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Newsletter of the AICPA  
Information Technology Section

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## WIRELESS TECHNOLOGIES

### Understanding Wireless Technologies for Maximum Benefit

By Michael R. Dickson, CPA.CITP

Michael R. Dickson, CPA.CITP, is president and CEO of Business Technology Group, LLC, a company he founded to help CPAs and business executives minimize risk and maximize ROI in their technology investments. Mike serves on the AICPA Information Technology Executive Committee and the Governing Council, and chairs the CITP Credential Committee. He is a new member of *InfoTech Update's* Editorial Board.

Wireless networking has become one of the latest "in vogue" technologies. It seems that everywhere you go; people are talking about how they effortlessly connected their notebook computer or Personal Data Assistant (PDA) to the Internet or office local area network. Wireless access is not just available at airports, hotels and coffee shops; it is rapidly becoming a new communications commodity. If you don't have a wireless network in your office and/or home office, then be prepared to answer the simple question, "why not?"

Wireless networking is inexpensive, simple to set up and can be secure, but unless you understand how a wireless network works, how to select the proper wireless technology, and understand the unique security risks of using wireless networking, your initial experiences with it may be very frustrating. Once you get past the euphoria of being able to walk around your house or sit in your favorite patio chair while browsing the Web or connecting to your office network, you must be sure you are not broadcasting your personal financial or company data to your neighbors or to total strangers.

### Wireless Technologies

It should come as no surprise that a network is simply a group of two or more computing devices connected together. Therefore, a wireless network is a group of two or more computing devices connected using wireless technology. While this article focuses on wireless technologies commonly available for home, or small- and medium- sized businesses, each wireless technology has its own unique attributes. It is important for the consumer to understand the differences. For example, some wireless technologies are capable of supporting entire Local Area Network segments, while others only provide a computer with the ability to connect to or gain access to a network or the Internet.

### Popular Wireless Standards

#### Home RF

Home RF (Radio Frequency) was an early wireless standard that did not make it past the "early adopters." While it was engineered to support voice services, and is more resistant

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AICPA

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to interference than some other standards, it is no longer being supported by any major vendor or standards groups. I recommend that you avoid any wireless devices labeled as "Home RF."

### Infrared

Most laptop and notebook computers built in the last several years have an infrared port. Infrared (like the remote for your TV or DVD player) is a light beam where "line of sight" is required to exchange data. Infrared has a limited range (generally 5-25 feet) and is best suited as a file transfer link between PCs or PDAs. Because of its line of site and speed limitations, infrared wireless devices are better suited for small file exchange rather than providing full network connectivity to home or business. In other words, its scalability is not designed for the more intense needs of today's integrated professional.

### Bluetooth

Bluetooth is another RF standard designed for connecting peripheral devices within a short range (30 feet). The most common use of Bluetooth is in connecting small devices, such as cell phones, PDAs, printers, keyboards, headsets and other devices, to PCs located nearby. Bluetooth does not have native support for TCP/IP, so its use as a wireless network supporting IP applications is not recommended.

### Wi-Fi

Wireless Fidelity (Wi-Fi) represents the current best standard for wireless personal or commercial networks because of its broad acceptance and available coverage. Based on the 802.11 IEEE specifications, Wi-Fi offers several different "flavors" (a, b, g, etc.) of 802.11 connectivity, each with its own strengths and weaknesses. Wi-Fi currently offers speeds up to 54Mbps and ranges up to 300 feet. There are compatibility and interoperability issues between the different flavors of 802.11, so it is recommended that some understanding be developed before selecting or purchasing wireless hardware.

A single Wi-Fi access point can provide local area connectivity to PCs located within 300 feet. Wi-Fi is ideally suited to replace the traditional network cable except when conditions exist that prevent wireless from working. Such extreme conditions typically are defined by distance, but sometimes, the surrounding environment can prevent wireless technologies from being effective where heavy equipment, construction materials and electronic interference prevent the wireless network from working. For more information on Wi-Fi wireless standards, see the section below, "Which Wi-Fi standard should I select?"

### Cellular Based —CDMA2000 1xRTT

Some of the most versatile, cost-effective wireless technologies are being offered by cellular providers. One such technology is known as Code Division Multiple Access (CDMA). I have used a PC Card with a small antenna to connect with a Verizon Wireless High Speed data network for nearly two years. My experience is that I am rarely in a location without a wireless connection. CDMA2000 1xRTT uses a 1.25 MHz CDMA channel to provide data up to 153 Kbp or 3 times faster than the best 56K dial-up connection. Depending on where you are, throughput will vary. My experience is that speed rarely falls below 56K. There are other cellular-based technologies (most notable is GPRS) that support wireless Internet access, but the current availability and speed of that technology in the United States is generally not as good as CDMA. Cellular-based network connections provide acceptable speed and reliability today in terms of supporting VPN access to home or business local area networks, and with 3G speed and service improvements already being implemented, cellular wireless providers are well positioned to provide connectivity to the local area network for the mobile worker.



The next step in the development of broadband wireless will result in significantly faster connection speeds using 3G technologies such as 1xEV-DO. Be sure to read *The Promise of 3G Wireless* by Doug Brady — in this issue of *InfoTech Update*.

### **Satellite-Based Services**

Today there are several satellite-based broadband access services. The typical satellite services offers up to 1,000kbps download speed, but are limited to upload speed with a maximum of 100kbps. Typical upload speeds are significantly less than the maximum stated. The 1,000kbps "fast" data transfer speed is more than ample for Web browsing and downloading unsecured POP e-mail messages, but there is a latency inherent in satellite-based connections because of the distance the signal must travel to and from the satellite.

This latency, combined with the relatively slow upload speeds, make the use of a VPN to connect to an office network problematic. VPN is the two-way exchange of data that must occur when encrypted data is sent between client and server. While it is possible to use a satellite system for work-at-home applications, it is not recommended.

### **What is the Proper Wireless Technology?**

From the descriptions above, it should be apparent that some wireless technologies are designed to support connections between very close devices (infrared and Bluetooth), while others exist primarily to provide access to the Internet (cellular and satellite-based). That leaves Wi-Fi as the remaining standard that can really provide for a complete wireless local area or work-group network.

Wi-Fi does this because it connects computer devices located within 100-300 feet to a single "network." When used outdoors or in large open, unobstructed spaces indoors, Wi-Fi can reach up to 300 feet. Connected to a single network, the wireless devices can share resources and

connect through routers to other networks. These other networks could be the Internet or other local area networks throughout the enterprise — whether located in the same building, or at some remote or distant location. In fact, most Wi-Fi access points act as routers more often than gateways to the Internet or the enterprise network.

Wi-Fi networks are defined by a letter following the base 802.11 specification for Wi-Fi networks. In selecting a Wi-Fi network, there are several important choices based on frequency, speed and distance. See *Table 1* on page 4 for a complete explanation.

Confused by all the choices? Are you looking for a card that will "do it all?" The good news is that one is available; several vendors now offer a dual-band wireless A+G notebook adapter that lets your notebook communicate with all three wireless network standards.

### **Four Unique Security Concerns in Wi-Fi Wireless Networking**

The security concerns for Bluetooth and infrared are similar to Wi-Fi, but the risk is significantly lower because of the limited range. It is recommended that you disable your infrared and Bluetooth transceivers, especially when you take your notebook outside your office into a public place, such as an airplane or coffee shop. The concerns for Cellular CDMA2000 are limited because of the digital technology used to scramble the transmissions to the providers' cell towers. These scrambled transmissions are very hard to hack into; however, Wi-Fi's widespread acceptance and relative long ranges gives rise to significant risk.

Here are four unique security concerns related to Wi-Fi that are important to understand.

1. The first change to your wireless access point (router) when you take it out of the box should be to change the default

settings, such as administrator account username and password. The second step is to change the default Service Set Identifier (SSID) from the one provided by the manufacturer. This will prevent hackers who know the default account names from logging into your wireless access point and obtaining security settings or otherwise disrupting your network.

2. In a wired network, an intruder has to locate a wire and make a physical connection to your network to sniff your data. The existence of the wireless network and certain details about how to connect to it are broadcast by radio waves to anyone within range. Therefore, it is much easier to spot an intruder plugging in a notebook computer into an open network port in your office, than it is to know a thief with a wireless scanner is sitting in your parking lot or an adjacent office. To protect physical access to the wireless network, you must disable the Wireless Access Point from broadcasting its SSID. The SSID is a critical name that any device attempting to connect to your network must know.
3. Enable Wired Equivalent Privacy (WEP): As its namesake suggests, WEP is a wireless encryption protocol designed to make your wireless network as secure as a wired network. Most vendors offer encryption key length of 64 bit and 128 bit. Some of the new G cards also offer 154 bit key lengths. While most attempts to hack into your system will be thwarted by the existence of a 64 bit key, it is becoming relatively easy for a determined, experienced thief to hack a 64 bit key. A 128 or 154 bit key will stand up to even the most determined wrongdoer.
4. Most wireless access points offer the ease and convenience of Dynamic Host Configuration Protocol (DHCP), which automatically sets the TCP/IP settings on a compatible wireless network interface card. Like many ease-of-use features, they significantly degrade

*Continued on page 4*

**Table I – Wireless Frequency, Speed and Distance**

Wireless Standard	802.11b	802.11a	802.11g	Super G (not yet approved standard)
Frequency	2.4 GHz	5 GHz	2.4 GHz	2.4 GHz
Max speed	11Mbps	54Mbps	54Mbps	108Mbps
Useful Range	100–150 feet	25–75 feet	100–150 feet	100–150 feet
Compatibility	No	No	11g devices will interoperate with 11b devices, but not compatible with 11a devices.	No in “static” mode, will interoperate with G mode in “dynamic” mode
Acceptance — public hotspots	Most popular, wide spread adoption.	Very limited or none.	Some, and more will come. The Access provider must buy G/B solutions instead of just B, but there is little incentive to replace existing B infrastructure.	Not at this time.
Recommended application	Mobile Road warrior when most of your time is in airports, hotels, coffee shops, or bookstores.	Limited close workgroup where primary motivation is to avoid interference in 2.4GHz frequency space and the additional speed can be utilized.	New corporate workgroups should consider G because of its backward compatibility to B devices, but expect to move to pure G to avoid interoperability performance issues that exist in mixed environments.	At this time Super G is for the Super Geeks. Until a standard is adopted and all the manufactures begin to follow it, this is for limited test bed deployments only.
Other comments	Good for the home users connecting to the internet, where speed in excess of 11Mbps is rarely needed.		For any new investment in Wi-Fi, this is the best place to start. Implement G in corporate workgroups or home office, and have backward compatibility to extensive 11b hotspot.	The static mode is recommended, but may cause interference with other 2.4GHz legacy networks.
Interference from other devices?	Many wireless telephones operate in 2.4MHz frequency and it is not uncommon to have significant interference between access points and these phone systems.	5MHz frequency space is not as crowded as the 2.4MHz space is.	Many wireless telephones operate in 2.4MHz frequency and it is not uncommon to have significant interference between access points and these phone systems.	Because of the way Super G bonds two adjacent channels to double the Speed of G devices, some interference within the 2.4 MHz legacy networks should be expected.

security. For a small workgroup or home office environment in a highly congested area (apartment building or multi-tenant floor of a commercial office building), you may want the added security of setting all wireless devices to static addresses to reduce the likelihood that the casual hacker would discover your network. To obtain the best security wireless networks have to offer, create a table with Media Access Control (MAC) identification that is unique to every network adapter. With this table, your wireless infrastructure will only

recognize connections from those specific adapters whose MAC ids are loaded into the router table.

### A Final Word

Wireless Networking is a very cost-effective, convenient way to connect multiple PCs to a network or the Internet located in your home or business. While wireless networking *can be* secure, it only is effective if you take simple, necessary, incremental precautions to make it secure. Don't forget that even if you apply these four controls to your wireless segments,

securing your wired networks and information systems is also critical to the overall security of the entire network. To learn more about basic security practices and assess the security of your small business network, take the 8-hour CPE course, “Diagnostic and Assessment Course IdentIRISK for Trust Services-Security,” available at <http://cpa2biz.com>.

\*\*\*\*\*  
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## VIRTUAL OFFICE

# Working Remotely Brings HR, Technology Issues

By Richard Oppenheim, CPA.CITP

**Richard Oppenheim, CPA.CITP, is president of SysTrust Services, a provider of products for the assessment, verification and certification of a computer data center's operational reliability. He has worked with computer technology, information systems and business operations for more than four decades.**

There was a time when all people in a single enterprise actually worked in the same building, and at some distant time ago, there were no e-mails, no search engines and no instant messaging; even making a long distance phone call was expensive, requiring special operator assistance.

What a different world today: outsourcing, telecommuting, virtual companies, independent contractors. Wherever you are, so is your office, but not all of the connected world is necessarily positive. Those who work remotely for a firm or business, as well as supervisors, managers and owners who must deal with telecommuters, have faced some, if not all, of the following obstacles:

- ◆ **Increased isolation:** Being alone can be substantially debilitating and demotivating.
- ◆ **Increased need for coordination:** Similar to isolation, management has to provide time and interactive support.
- ◆ **Communication challenges:** Technology can increase efficiency, but there is a potential loss in communication effectiveness.
- ◆ **Loss of camaraderie and synergy:** With increased distances, there are fewer opportunities to build trust within the department or workgroup.

Technologically, the virtual office is a reality and it also is continually expanding. The Gartner Group estimates that there are more than 137 million teleworkers worldwide. One fifth of U.S. workers, including a high percentage of meeting professionals, workers currently work away from the main office in one way or the other.

How do you support and sustain the world of remote working? Working remotely is not a new topic, yet it came in as number eight on the AICPA's 2004 Top Technologies list because so many CPAs and accounting professionals want to increase the advantages of working remotely, while lowering the negatives brought about by distance and isolation.

### Establish Firm/Company Needs

There are four groups and several categories that a company should review to determine what is needed for their remote workforce:

- 1. Communications technology:** Used for messages, files, data or documents. Examples include e-mail, faxing, voice messaging and Web publishing.
- 2. Electronic conferencing:** Facilitates the sharing of information. Examples include data conference, Web-based presentations, Webinars, voice conference, chat rooms and bulletin boards.
- 3. Collaborative software:** Includes in-house or Web-based products. Examples include calendars, Blogs, Web-based management systems, Microsoft Office, Salesforce.com, Colligo and Adobe.
- 4. Sharing of enterprise-wide computer resources:** Includes office networks, home-based and Web-based. Access tools examples include PCAnywhere, GoToMyPC, Microsoft's Remote workplace, network printers and shared hard drives.

While appropriate technology helps company employees work effectively from anywhere, there are a few essential "non-technical" requirements:

- ◆ Setting of clear goals, standards, guidelines and procedures for the company, and for all the variations of remote work and remote access.
- ◆ Establishing a company culture for performance measurements based on results, not just visibility. This should include a regular reporting routine between managers and workers.
- ◆ Business and personal practices that maximize mutual connectivity among workers and the organization.
- ◆ A strong commitment from senior management so that changing attitudes, behavior, and ultimately, the culture, will not fail.

The world we live in today is a culture change, and there are natural barriers that will obstruct a successful implementation of remote operations. To be effective, remote work guidelines have to address the needs of all employees working in a dispersed team.

Around 1982, Tom Peters and others started to promote the business process known as MBWA, Management By Wandering Around, a concept prompting managers to get out of their office and walk to where the staff and the company operations were located. Distance may make the heart grow fonder, but it is a lot harder for managers to wander and observe.

Keeping everyone connected also refers to the social connection between workers and their organization, and this is a crucial component of any remote work strategy. Ways to do this include e-mail, instant messaging, telephone, express delivery service,

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meeting face-to-face with small groups, large groups and one-on-ones.

It also can be helpful to set up a company intranet, a private company-controlled information source used by anyone who is permitted access. Information posted on an intranet can be product data, private meeting notes, the company telephone directory, company procedure manuals and many other tasks (see the Employee Self Service article in this issue of *InfoTech Update*).

While wandering around, working with technology and using tools like an intranet are tremendously effective, creating a short list of principles underlying the establishing and sustaining of a virtual office community will help you create a cohesive plan:

- ◆ Start with a set of goals for what the virtual office is to accomplish.
- ◆ Identify desired results; focus on how to measure the output, not the process.
- ◆ Assign responsibility, expect accountability.
- ◆ Create a continuing balance between virtual and face-to-face meetings.
- ◆ Communicate, Communicate, Communicate with all workers - virtual and on-site.
- ◆ Integrate training for the virtual office with all company-wide education.
- ◆ On a regular basis, review and assess the virtual office to determine effectiveness.

## Tools to Support Virtual Work

Determining the process is great, but you also should provide guidance/support to your telecommuters on the kinds of tools, systems and technology required to effectively function in the marketplace. There are lots of resources to support the virtual office world. The following selections are just a few of the many and are listed in no specific order. They are provided as a starting point to locate and implement support for virtual work.

### **Microsoft Office Suite ([www.microsoft.com/office](http://www.microsoft.com/office))**

Most companies support PC-based Microsoft (MS) Office. The suite of programs contains more than just Word, Excel, PowerPoint and Access; other applications that are all useful include Visio, FrontPage, Publisher, Project, OneNote and InfoPath.

Collaboration is very important in the virtual office. With suites like MS Office, documents, paragraphs and images can be passed back and forth, with some applications more integrated than others. For example, by using "track changes" on your documents, multiple workers can insert their corrections; all changes, inserts and deletions can be viewed by everyone.

### **MS Office Live Meeting ([www.microsoft.com/livemeeting](http://www.microsoft.com/livemeeting))**

This application is a low-cost solution to Web conferencing that supports group meetings for everyone on-site and in remote locations.

### **Lotus Notes ([www.ibm.com/lotus](http://www.ibm.com/lotus))**

Lotus Corporation had a life before being purchased by IBM, and they built some pretty good software, like Lotus 1-2-3. Lotus Notes is an integrated collaborative environment that supports collaborative applications, along with messaging, calendaring and scheduling capabilities.

### **Colligo ([www.colligo.com](http://www.colligo.com))**

This software enables you to take a group of workers with computers and set up a secure, private wireless network. Colligo enables a peer-to-peer network without servers, hubs and access points. And, if one of the computers has a wired or wireless Internet connection or a printer, all of the computers can share it.

### **Adobe ([www.adobe.com](http://www.adobe.com))**

Yes, the gold standard for images and photography applications has enhanced its entire line to provide collaboration among Adobe's Creative Suite, InDesign and GoLive applications. The key benefit for the virtual office is the integrated tools that make it easier to move work all around the enterprise. Among the new tools is Version Cue that provides for content collaboration and management.

### **Better Quality Printers ([www.konica.com](http://www.konica.com))**

Often, when virtual office workers set up their office, the printers used are the low end of the laser printers or of the inkjet variety. When setting up the office connections, companies can install higher-end shared printers in a central location that can be cost-effective. Such a shared printer can be the Konica Minolta Magicolor 2300DL. This networkable laser printer provides color, black and white, quality images and crisp text for under \$800.

### **Big External Disk Drive ([www.maxtor.com](http://www.maxtor.com))**

Sometimes, taking large files or whole systems from one location to another requires a few gigabytes of data storage, and one CD only holds a maximum of 650 Mb. One solution is the external drives from MAXTOR. This drive is a cigar-box size that connects with USB or Firewire and comes in a few sizes from 80 Gb to 3000 Gb. MAXTOR as an option for backing up the virtual office.

## At the End of the Day

The biggest hurdle in implementing collaborative tools is convincing people to use them. Training is required to help with the comfort levels when using these tools. In many cases, collaboration is at odds with the company's corporate culture so implementation of these new methods can be disruptive. Shifting a corporate culture requires a mind change at all levels of the organization, including top management.

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## INFOTECH UPDATE PROFILE

### Kevin Martin: CPA Advocate in Technology

By Scott H. Cytron, ABC



Kevin Martin

If James Brown is the hardest working man in show business, Kevin Martin, CPA.CITP, MCSE, MCP+I, may be the hardest working CPA/technologist in the accounting profession. I recently caught up with Kevin during the AICPA's TECH 2004 Conference in Las Vegas, and what was extremely obvious is the tenacity and excitement he brings to the profession through his charisma and natural ability to promote technology as a means to improve productivity and processes.

Kevin is a partner with Martin & Associates ([www.martinandassoc.com](http://www.martinandassoc.com)) in Cincinnati, Ohio, an accounting and information technology consulting firm founded in 1988 that provides medium-sized companies "the right business software solutions," according to Kevin. Martin and Associates represents several middle-market business software solutions, including MAS 500, Microsoft Great Plains, MAS 90, MAS 200, MAS 200 for SQL Server, SalesLogix, Abra Suite Human Resources, Best Fixed Assets and Batchmaster PFW. Kevin and the company also provide support for network operating system platforms, including Microsoft Windows Server 2003, XP, 2000, NT, Novell and Unix.

**ITU:** I noticed Martin and Associates just celebrated its 15<sup>th</sup> anniversary. What aspects or traits have sustained your business for the last 15 years?

**Kevin Martin:** Our 15th year celebration in 2003 came about because of a hard working and fluid combination of three items: taking risks, being an entrepreneur and using solid CPA/business skills in managing a business and staff. Fifteen years may not seem like much to many readers, but I beg to differ. I am very proud of our company's longevity in servicing our clients — a tribute to our past successes and an indication to successful, future opportunities.

**ITU:** Tell me why providing solutions to the middle market is an important part of what you offer as a company. In other words, why not small or large? Why middle? What do these clients need that you or others can provide them

**Martin:** I enjoy the middle market space — working with business owners, CFOs, CEOs and their staff is what I get most excited about in doing the work I do. I like making positive impacts on their business processes and IT systems. The middle market space is not too large that you have to work through committees and implementations that take 12-18 months and million dollar+ solutions. Yet, the middle market is not too small to present clients an ROI on their dollars spent for ERP level solutions.

**ITU:** Considering the last several years, tell me three aspects of technology that have improved the way you and your firm do business internally and/or externally.

**Martin:** The past three years have shown me the increased importance of communication, knowledge in technology, understanding business processes and sharing this knowledge. A complete package is needed to be successful. Technology workers focusing on business solutions need to have a combined knowledge of

knowing how to use software/technology solutions and understanding business processes. These combined skills are crucial in 2004 for you to be successful. In the 90s, being good in one of the areas would have been enough, while now, it is just a start to what you need to know.

**ITU:** Tell me why you advocate and stand behind the AICPA's CITP credential. Why do you think it's important and what does it say to your clients?

**Martin:** The CITP is a bridge that connects my knowledge sets. The technical certifications I hold and the CPA requirements obtained represent diverse skill sets. When connected by the CITP, these blend together beautifully in the business world. The CITP shows my clients and staff that I am prepared to address complex business solution problems. In many ways, the CITP is part of the icing on the cake of a lifetime of achievements, with yet more achievements still in store to earn. ●

**I am very proud of our company's longevity in servicing our clients — a tribute to our past successes and an indication to successful, future opportunities.**





## VIRTUAL OFFICE

# Employee Self-Service Enables the Remote Worker

By Mary Doize

**Mary Doize is vice president and general manager of the Abra HRMS solutions at Best Software, Inc., a provider of business management products and services for small- and medium-sized businesses and small enterprises.**

Employee Self-Service (ESS) is a hot topic in the HR and accounting departments of large and small organizations. As more employees work from home and/or remote locations, Web-based ESS systems are being adopted at a much faster pace in order to manage employee information, as well as make data available to employees and employers through the Internet.

Over the past several years, companies have moved services online to cut costs and give employees easy access to vital data, including benefits, compensation and tax information. Allowing employees to manage their own information saves time, resources and money, as well as empowers the staff. These HR functions, as well as other vital transactions — managing insurance programs, health plans and workers' compensation claims — now can be made available to all employees anytime, anywhere. As workforces become more mobile, this advantage is especially appealing to employers.

However, ESS is being addressed by companies as more than just a way of allowing employees to view and manage their own records. Organizations are saving millions in administrative expenses and costs that were associated with redundancy. The Internet enables HR departments to offer significantly more functionality, while keeping costs to a minimum. Data can be accessed and managed by an employee and made available for verifying performance reviews and tracking professional development training, as well as keeping tax information, military history and other data, once handled by HR staff, up to date. These services allow companies to connect employees, supervisors, managers and administrators through the Web with automated systems.

Today's robust solutions offer much more functionality than their predecessors. Superior workflow capabilities, as well as highly customizable features for employees, managers and administrators, are but a few of the perks made available by the maturity of Web-based systems. By automating employee activities like time-off requests and W-4 changes, companies save significant amounts of time associated with manual processes, not to mention the bonus of having real-time access to information. This saves managers time and money simply by allowing them access to information about their teams that, in the past, they would have obtained

through research and/or making numerous phone calls. In addition, this frees up HR departments and allows staff to focus on business issues at hand, such as recruiting and retention efforts.

Other benefits of ESS include improved efficiency and productivity by allowing employees and managers direct access to routine inquiries and requests, as well as streamlined approval and notification processes. Routine inquiries and requests might include time-off information, professional development courses or insurance information. Used effectively, ESS systems can have a significant impact on these processes. Managers have the power to find out with the push of a button what their teams are working on to evaluate talent and workloads of employees across the organization.

By moving services online, organizations improve customer intelligence, and increase team efficiency and accuracy. For example, one of the most attractive benefits to ESS is increasing collaboration among managers and employees to streamline workflow and operations. Plus, studies have shown that making company information readily available can significantly improve employee morale and retention. Now, instead of a phone call that may last 30 minutes, an employee can go online and obtain key factual data in just a few seconds. Collaboration is not yet the strong selling point of ESS that control is, but companies that take advantage will enjoy interconnectivity that they never imagined.

Allowing employees easy access to personal compensation and benefits, time off, professional development opportunities and other data, gives them a sense of ownership in their own development. This results in employees being more engaged with one another — particularly management — and may reduce turnover.

Another factor driving the adoption of ESS is HR departments that are being stretched thin by keeping track of basic information like payroll and benefits enrollment. While the economy sputters back to life, HR departments are still being asked to "do more with less" while employees are seeking easier access to their benefits. In turn, limiting access to this critical information is stifling staff development. Over-taxed HR departments only inflate the problem. By connecting employees and the business through ESS, companies are streamlining HR processes. Employees are responding positively to being given the control and the ability to enroll and update personal employee data.

ESS may be making lives in the HR department easier, but it is not meant to be a complete hands-off experience. What an organization does not want is to simply shuffle HR tasks to the employees

*Continued on page 9*

themselves. This will have the opposite effect on collaboration. Instead of becoming engaged, workers may resent the extra work and simply ignore it. This will make an ESS system useless, because the information will become hopelessly out of date. Employers must find the line between empowering employees and saddling them with even more administrative work. Before adopting ESS, companies will need to communicate to their staff that balance can be achieved with effective implementation. In addition, the more employees are educated about stock plans, benefits packages and incentives, the more likely they are to participate in such programs. The bottom line of enticing employees to participate in an ESS solution is helping them realize that it affects them personally.

As more and more products crowd the market, it is important for organizations to carefully consider what they are looking to achieve with an ESS solution. Some factors to consider are increased flexibility and scalability, as well as the ability to decrease the complexity of an organization's payroll process.

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## EMERGING TECHNOLOGIES

### The Promise of 3G Wireless

*By Doug Brady*

**Doug Brady is chief information officer and partner-in-charge of technology for Plante & Moran, PLLC, in Southfield, Mich. With more than 25 years' technology and accounting experience, he directs the use of technology within his firm to better serve its clients. Doug is a frequent speaker at various technology-related gatherings and conferences focusing on the use of technology in business.**

Operating in today's business world can be very hectic; the pace of our work and everything in our life continues to accelerate at a breakneck speed. As a result, we attempt to stay connected with our clients, family and friends by using telephones, voice mail and e-mail. One of the ways to accomplish the constant connection is through mobile devices and services provided by various wireless communication providers.

Staying connected with voice *and* data services — including Internet access — *and* remaining mobile, has tremendous potential for cost reduction and productivity gains. While these devices and services have had an interesting evolution, we have heard for some time the promise to deliver "3G wireless services." What is 3G, what's it all about and how can we use this technology to our advantage?

#### What is 3G Wireless?

3G wireless technologies represent the convergence of various



**Allowing employees easy access to personal compensation and benefits, time off, professional development opportunities and other data, gives them a sense of ownership in their own development.**



2G wireless telecommunications systems in a single uniform global system. Basically, these systems are designed to offer increased voice capacity and higher-speed data rates by providing a bigger wireless pipeline. The International Telecommunications Union (ITU), a regulatory and standards-setting body in the area of wireless communications, states that any system claiming to be 3G must be capable of a minimum speed of 144Kbs with an upper range of 2Mbs. At its core, 3G wireless technologies represent a shift from voice-centric services to multimedia-oriented services, such as video, voice, data and fax.

When it finally does get here, 3G wireless will bring several key features. The first feature is improved bandwidth that will provide the ability to deliver rich media to our devices, and make accessing and using the Internet through a mobile devices a much better experience. Second, 3G will unify existing cellular standards, such as GSM, TDMA and CDMA, and thereby provide the roaming capabilities we can only now dream about today.

#### A Little Perspective

When we talk about wireless communications, there are three primary categories: Wireless Wide-Area Networking (WWAN), Wireless Local Area Networking (WLAN) and Wireless Personal Area Networking (WPAN). The term "3G" relates to the first category — WWAN — that provides wireless services, voice and





data, over a large geographic area using a system of switches and towers that are usually maintained by some public organization. Our interface with this type of network for the past 15+ years has been through our cellular or mobile phones.

WWANs are commonly referred to by their generation of technology. The first generation (1G) in the 1980s consisted of circuit-switched analog networks and mobile phones that were, most of the time, anchored to our cars (remember the cell phone cord?). The second generation (2G) came along in the 1990s and consisted of digital devices, along with the first all-digital networks. The cell phone became a valuable business tool as battery life, device features, and service coverage and reliability all improved with the digital networks and digital devices. Over the past 10 years, mobile phones made their way from our cars to our pockets and have become one of the largest segments of the consumer electronics industry. As we moved to digital devices, the demand for wireless devices and services increased significantly.

The most popular 2G wireless technology is the GSM system or Global Systems for Mobile Communications. GSM systems were first implemented in the early 1990s. Now in place in more than 125 countries throughout the world, GSM recently topped the 1 billion mark for customers world-wide. GSM systems use two different types of technologies: Frequency Division Multiple Access (FDMA) and Time Division Multiple Access (TDMA). These technologies simplify transmission and reception for the electronics in the mobile units. GSM and other TDMA-based systems are very popular in Europe, while here in the United States, Code Division Multiple Access (CDMA) technology was used to build our wireless networks. As you can imagine, with all of these technologies in place, and with the numerous wireless providers available today, interoperability between networks is next to impossible. In other words, your GSM device only works on a GSM network. But wait ... after 2G comes 3G right? With 3G systems comes the promise of seamless roaming between networks and the delivery of rich media to our devices at blinding speeds.

As you can imagine, one of the keys to getting to 3G is in setting standards. UMTS (Universal Mobile Telecommunications System) is a so-called "third-generation (3G)," broadband, packet-based transmission of text, digitized voice, video and multimedia at data rates up to, and possibly higher than, 2 megabits per second (Mbps). This offers a consistent set of services to mobile computer and phone users no matter where they are located in the world. Endorsed by major standards bodies and manufacturers, and based on the GSM communication standard, UMTS is the planned standard for mobile users around the world.

## Baby Steps

The explosion of Internet usage has had a tremendous impact on the demand for better wireless data communication services, and with it, the push to 3G wireless service. Today, effective

data transfer rates are too slow to be efficient when it comes to data transfer. Since the infrastructure for 3G is not completely built today, the providers of wireless services are faced with the challenge of meeting customer demands for high-speed services without the full-blown 3G infrastructure. As a result of the increased demand, some GSM and CDMA providers developed 2G+ technology that increases the data communication speeds as high as 384kbps. These 2G+ systems are based on General Packet Radio Service (GPRS) and Enhanced Data Rates for Global Evolution (EDGE) technologies. We will continue to see vendors go to these sorts of systems as we move along the path to 3G wireless.

## Bottom Line for Accounting

3G is coming, but getting the 2Mbps that is promised is still 18 to 24 months away for most of us. For example, in late July, AT&T Wireless launched 3G service in only four cities: Detroit, Phoenix, San Francisco and Seattle, and is expected to begin service in Dallas and San Diego by the end of 2004.

How does this benefit the Accountant Professional? One of the biggest benefits for the accounting profession, and, in general, for any mobile worker, can be summed up in three words: mobility, mobility, mobility. Getting out of the office and getting closer to our clients, potential clients, and, in general, "The Action," is critical to most successful businesses. Being mobile and staying connected in today's business world is critical. The next 18 to 24 months could bring some significant changes of wireless communications and we all need to do some planning.

The competition here in the United States of wireless providers, at a minimum, is spirited. In many cases, these providers are making huge infrastructure upgrades. In addition to AT&T Wireless, there are at least five other national providers all looking to own this market space, and there are multiple technologies at play in servicing the wireless consumer. This all adds up to, and smells like ... consolidation! In fact, many analysts predict that we will be down to four or less major U.S. carriers within the next 18 months.

So what do we do about it? The impact of these mergers will affect timing of 3G services and we should approach plans to use 3G with caution. In addition, as a result of the mergers' of the revised rate plans, service availability and roaming will be affected. We should all consider short-term contracts so that we can take advantage of new rate plans as they become available.

Although it isn't perfectly clear how and when the world of 3G wireless will happen, it is clear that it's almost here. The standards have been established, the demand is there and wireless providers are building the infrastructure ... so hold on; the ride should be interesting.

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## E - B I T Z

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### E-BITZ WITH SUSAN BRADLEY

#### Fasten Your Seatbelts, XP sp2 is here!

What's over two years in the making, 264 MB in size and needs to be installed as soon as possible?

Windows XP Service Pack 2 (XP sp2) is much more than a service pack and security release, and as you begin to test it and roll it out to your organization, let me give you a heads up to the issues.

#### The Big Change for end Users — Scripting

The major change you will see after loading XP sp2 on your machines, and in particular your laptops, is that in its native "medium" mode, scripting on Internet Explorer (IE) sites is disabled, along with java and pop-ups. In order to have some of your line of business Web sites be fully functional, you may have to add these Web sites to the "trusted site zone." In IE, you find this by clicking on Tools, Internet Options, the Security tab and the "Trusted site" icon.

This is the one area that I feel could have been better re-engineered. Adding sites to the trusted site zone is very cumbersome. Fortunately, I stumbled on an additional add-on tool that makes adding a site to the trusted zone much easier. While the tool bar was built for IE 5.0 and Windows 2000, it still works on Windows XP SP1, SP2 and IE 6. The tool is located at [www.microsoft.com/windows/ie/previous/Webaccess/pwrtwks.mspx](http://www.microsoft.com/windows/ie/previous/Webaccess/pwrtwks.mspx), and after downloading it, you can then much more easily add a site into your trusted site zone.

Be *extremely* careful about adding sites to your "trusted site" zone. You should either inform your employees that this means that they have "vetted" the site and know that it is not a malicious site, or that it has been approved by management. End-user education is extremely important in this day and age, and you should make sure that education is

a regular part of your security procedures.

The addition of the short cut of "Add to Trusted Zone" on the IE Tweak toolbar makes it much easier to add these key Web sites. I recently traveled to Las Vegas and found that Web sites such as the "pay per use" wireless offerings at the airport and hotels required me to add these initial log on sites to my "trusted zone" in order to purchase access. Therefore, if a Web site does not function as it should, it may need to be added.

#### Blocking Popups

Those of us who use IE as our main browser have probably long ago added a toolbar or some other mechanism to block Web page popups. The updated IE in XP sp2 comes with a configurable popup blocker with high, medium and low settings. I have it set, for example, at "high" and am prompted by a site when necessary to allow the popup. The prompting comes at the top of the IE Window and indicates that "Pop-up blocked. To see this pop-up or additional options click here ...." After you click on the message, you are prompted to allow the pop-up temporarily or always. Again, train your end users whether it's a good idea to allow the popup.

#### Even More Behind the Scenes

The firewall in XP sp2 is enhanced to allow for three levels. The first is "off," which you probably will want to use sparingly or only inside the office. "On" enables the firewall, and "don't allow exceptions" is recommended for laptops in wireless settings. Additional guidance and settings allow for the firewall to be enabled inside the network.

Keep in mind, however, that for most of the basic network connectivity to function, you

will have to enable file and printer sharing, and the other ports that I refer to as your "inner network goo." Ports 135 to 139 in my network pretty much have to remain open for my network to function. Newer networks may be able to only communicate over the more secure port 445 connectivity, but in my own testing, I am unable to have a functioning network with ports 135 to 139 blocked. Too many of my line of business applications depend on these ports to be opened. The firewall allows these exceptions to be built either by the user at the desktop level, or by the use of the additional functionality provided by group policy. The document located at [http://download.microsoft.com/download/6/8/a/68a81446-cd73-4a61-8665-8a67781ac4e8/WF\\_XPSP2.doc](http://download.microsoft.com/download/6/8/a/68a81446-cd73-4a61-8665-8a67781ac4e8/WF_XPSP2.doc) gives additional guidance for pushing out the firewall settings in a network environment.

#### The Other Big Change You'll Notice

The next big change is the Security Center that keeps track of the status of your firewall, antivirus and automatic updates. Most antivirus vendors have signed up to "plug into" this control panel and alert you regarding the status. If the Security Center senses that your antivirus software is outdated, you will receive alerts that you may be at risk. The same is true for the status of the firewall and the updates. If they are not in a "protection" level, you will get warned appropriately. This is a great way, especially for laptops, to ensure that they are monitored and maintained in a protected level.

#### Other Protections Included

Built into the operating system is firewall protection during the boot process to ensure that the system will be protected

while turning itself on. In addition, the recent issues with IE browser vulnerabilities were remedied in the IE included in XP sp2. Internet and local zones were strengthened as well.

### Test for your Environment

For any new software applied in your environment, you must test and ensure that the applications you have in your network or on stand-alone PCs will function as you intend them to function. Install XP sp2 in a limited setting in your networks and have

your tech testers report back their results. I think you'll like it — I know I do.

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**“End-user education is extremely important in this day and age, and you should make sure that education is a regular part of your security procedures.”**

### Attention IT Section Members

### COMING SOON

to a mailbox near you, “A CPA’s Guide to Understanding and Controlling Spam.” This guide, which is being sent free to all IT Section Members’ addresses, covers the latest tools for controlling and managing Spam.

Also, if you haven’t done so yet, be sure to visit our updated IT Section Web site at [www.aicpa.org/infotech](http://www.aicpa.org/infotech) for more information about the top technology issues of 2004.

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