

# ISPIRIAN INSIDER

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## Lease vs. Buy

*Ispirian Incorporated helps its clients move to state-of-the-art technology while preserving capital.*

**B**usinesses change almost daily. New competitors, new market forces, new financial strains and new organizational structures all add up to a need for flexibility. When selecting new technology, business owners often wonder if it will be replaced by a faster, more powerful alternative next year, or even next month. That risk alone is enough to make business owners hesitant about pouring money into new technology equipment.

One way this risk can be avoided is through leasing options. A lease is an easy way to enjoy the benefits of the latest technology without assuming the up-

front costs and risks of ownership. Also, keep in mind that a lease can include the equipment, the software, the voice and data cabling, extended maintenance agreement, installation, programming and other services.

Furthermore, when a lease expires, an organization can buy the equipment, trade it in for the latest technology or simply walk away – depending on the type of lease that was agreed upon. Leasing technology equipment offers business owners a technological “safety net,” so the company’s competitive edge is never dulled by the process of moving to faster, larger or different equipment.

### The Technology Advantage

As leasing technology equipment becomes more popular among business owners, more and more leasing companies seem to pop up – especially in the last few years. However, Popular Leasing U.S.A. has been offering leasing

options for more than 10 years. That’s a wealth of experience considering that Microsoft Windows 3.0 was the operating system staple in 1995. Popular Leasing, a subsidiary of Banco Popular North America, is now the 32nd largest bank-affiliate leasing company in the U.S.

One of Popular Leasing’s primary objectives when leasing technology equipment is to offer the highest-quality, state-of-the-art equipment that is available in the marketplace. To ensure this, the company has partnered with Ispirian Incorporated – a St. Louis-based IT equipment and solution provider.

### The Financial Advantage

Popular Leasing lets organizations keep capital free for investment or other business expenses instead of tying it up in fixed assets. Profits from these investments offset the cost of the lease – organizations don’t have to own an asset to make money using it.

Unlike bank loans, leasing means no down payment and no required compensating balances, in most cases, on approved credit. And, leasing guarantees a fixed monthly lease payment for the length of the lease term, so it’s easy to forecast equipment expenses. It also gives business owners the flexibility to obtain unbudgeted equipment like a new phone system if the organization suddenly outgrows the old one, or if the gear stops working in the middle of the budget year.

In all, leasing protects organizations from being locked into owning equipment that may not meet future needs – and it provides the flexibility to move up to the newest releases, features and functionality as they become available. Leasing is often the financing solution of choice for businesses that hesitate to buy equipment because they fear it will become obsolete before they can fully depreciate it.

“A lot of the advantages of leasing are based on protecting the company against technological obsolescence by making it easier to replace and upgrade equipment more frequently.”

Ispirian is partnered with some of the most elite technology vendors in the world, including Microsoft, Panasonic, Samsung and Sony to name a few. Combining Popular Leasing’s experience in equipment leasing and financing with Ispirian’s ability to provide cutting-edge technology, the two compa-

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# Breathing Room

*Sarbanes-Oxley deadline extensions give companies more time to comply.*

Companies struggling to determine exactly what requirements and efforts are needed to achieve full compliance with the Sarbanes-Oxley Act now have a little more breathing room.

In March, the Securities and Exchange Commission extended until July 15, 2006, the deadline by which smaller firms and foreign companies have to comply with the Sarbanes-Oxley Act's internal control reporting requirements. The affected companies had initially been required to comply with those provisions by July 15 of this year.

The SEC classifies companies into two categories, accelerated filers and non-accelerated filers. Accelerated filers — typically U.S. companies with equity market capitalization of more than \$75 million — were required to begin complying with Sarbanes-Oxley on Nov. 15, 2004.

"This extension is not a sign that the SEC is caving in to pressure groups' claims that the cost of Sarbanes-Oxley is too much for the U.S. economy to bear or that it's bad for business," John Bace, an analyst with Gartner, said in an online research note. "A 'kinder, gentler' SEC is not on the horizon."

## Relieving the SMB Burden

Instead, the change was fostered by a realization that smaller firms bear a bigger cost to comply with Sarbanes-Oxley, said Bace, who cited a report from the Small Business Administration that estimated companies with fewer than 500 employees face costs 60 percent higher than their larger counterparts.

Small to midsize businesses (SMBs) should not rest easy because of the extension, but should put the extra time to good use. Alan L. Beller, director of the SEC's division of corporation finance, noted in a statement that companies should "use the extension not to delay but to improve the quality of their efforts."

The deadline extensions apply only to Section 404 of Sarbanes-Oxley, a piece of the legislation that mandates an annual evaluation of internal controls and procedures for financial reporting. Internal controls are essentially rules for ensuring the integrity of a company's financial information. This could include basic IT security measures, risk management, transaction authorization and change management processes.

Section 404 has been the focus of most compliance efforts because it requires management to assess and vouch for the effectiveness of these controls. The

annual report must also state that the company's public accountant has attested to and reported on management's evaluation of internal controls over financial

reporting. Officers of the company who sign off on a falsified report face up to \$5 million in fines, up to 20 years in prison, or both.

Industry experts say the key issue with Sarbanes-Oxley is not how to achieve compliance this year — it is how to set up a repeatable and predictable process within your organization to stay compliant over the long haul.

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## Beyond the Deadline

Despite the focus on deadlines, industry experts say the key issue with Sarbanes-Oxley is not how to achieve compliance this year — it is how to set up a repeatable and predictable process within your organization to stay compliant over the long haul. In their race to meet the deadline, many companies are following the path of least resistance by adopting a manual approach to documenting their internal controls and processes using software such as Word, Excel or Visio. But that type of process is not repeatable or scalable, and it does not enable enforcement and audit of processes and controls once the documentation is completed. Without the use of enabling technology, such a manual approach would have to be repeated every year.

"Enterprises that choose one-off solutions for each regulatory challenge that they face will spend 10 times more on compliance projects than their counterparts that take a proactive approach," said French Caldwell, research vice president at Gartner. "Although there are times when adopting a 'quick and dirty' solution may be necessary to meet deadlines, enterprises should avoid committing too much time, effort or data to such systems."

## Use What You Have

In truth, many organizations already enforce sound financial controls and auditing processes supported by some form of systems automation. As such, sensible compliance efforts will pursue enhancement of existing systems rather than engaging in sweeping makeovers driven by new application packages.

Gartner recommends that all applica-

tions than can assist with compliance be brought together in a common architecture. According to Gartner, public companies that don't have this common compli-

ance architecture by 2006 will have to spend 50 percent more annually to achieve compliance. By establishing a compliance architecture, enterprises will be able to reduce the cost of regulatory compliance because such an architecture "eliminate(s) requirements to hire external auditors or consultants every time a new law appears," said Rich Mogull, research director for Gartner.

To build the most effective compli-

ance architecture, Gartner says enterprises should expand and standardize the use of Business Continuity Planning, document management systems, and Business Process Management, and should add some business intelligence and perhaps a compliance tool for reporting, as well.

"While many large companies see Sarbanes-Oxley compliance as a way to improve risk management and to rationalize IT management, midsize enterprises are less likely to see the opportunity and return on investment in Sarbanes-Oxley. That's a mistake," Caldwell said. "Focusing just on compliance misses the big picture of improving corporate governance and transparency that will lead to better business decisions and real ROI."

The Sarbanes-Oxley Act is widely considered the most far-reaching financial reform legislation since the 1933 and 1934 securities acts. While many companies still don't fully understand the implications of the regulations, the extension of compliance deadlines provides another opportunity. Prudent companies will use the extra time to ensure there are no gaps in their processes and applications.

## Identity Management Aids Compliance

Identity management solutions that allow companies to more easily manage all the identities and access rights of their users are essential for complying with the internal-control requirements of the Sarbanes-Oxley Act, according to a recent study by the Boston-based Aberdeen Group research firm.

Seventy-five percent of those responding to the Aberdeen Group survey said user provisioning is important to their company's compliance efforts, with separation of duties and attesting to specific internal controls most often cited as its key contribution.

Numerous firms also believe that user provisioning addresses from one-quarter to fifty percent of the controls that are required to comply with Section 404 of Sarbanes-Oxley.

User provisioning is a key component of an identity management platform. Provisioning refers to the software and business processes that grant or deny access to digital or physical resources to employees of an organization or its business partners.

These resources can range from e-mail accounts to application access rights to telephones lines and computers.

Provisioning allows the company to create automated, repeatable and auditable processes for granting and revoking user resources.

By managing all user access to protected information, and by being able to formally document and validate those controls, a company can more easily meet Sarbanes-Oxley requirements.

"Identity management products and services are one part of a solution capable of providing enterprise-wide user access controls and provisioning, which can strengthen an organization's internal controls process," said Earl Perkins, a vice president of security and risk strategies with META Group. "Too many critical processes are handled manually today. Automating such steps as user de-provisioning through identity management is definitely a step in the right direction for both adhering to compliance and streamlining the environment."

## Security Reaches C-Level

More organizations are elevating IT security to the senior management level — 44 percent in 2004 versus 39 percent in 2003, according to the annual Information Security Survey by the Information Systems Security Association and the Business Software Alliance. Making security a top priority brings greater efficiency, less downtime and competitive advantage, 76 percent of those surveyed said.

"This survey demonstrates that awareness and action are replacing fear," said Robert Holleyman, BSA's president and CEO. "With an increase in global online vulnerabilities, it is imperative for companies to continue to elevate the issue to the highest levels within their organizations. When they do, nine out of 10 report that financial resources have followed, enabling investments in new, more secure technologies, more secure networks, better processes and better-trained personnel."

While 59 percent of security professionals believe there will be a major cyber-attack in the next 12 months, 73 percent say they feel better prepared than they were just 12 months ago to evade the attack.

## Small Businesses See Growth

Small-business owners are doing something unusual this year — smiling. According to the 2005 QuickBooks Small Business Survey, conducted by an independent market research firm, 57 percent of respondents say they are optimistic about the overall business outlook for the 2005. Moreover, only 31 percent cited the economy as the top issue facing small businesses this year — down from 36 percent in 2004.

With this optimism comes a focus on growth. The survey found that 34 percent of small-business owners are focused on actively growing their businesses this year. When asked about how they would invest to achieve growth, 39 percent reported purchasing new software and equipment, 27 percent said marketing programs, and 11 percent cited adding new employees. Further demonstrating this growing optimism, 69 percent would encourage others to start small businesses at this time.

## Supercomputing on Demand

IBM is making its Blue Gene supercomputer available to customers on demand. With Deep Computing Capacity on Demand, customers can access the world's most powerful supercomputer via a dedicated virtual private network and pay only for the capacity they use.

The cost of supercomputing has limited its application to very large enterprises and government labs. Deep Computing Capacity on Demand will open up the potential of the Blue Gene supercomputer in areas such as drug discovery and product design, simulation and animation, and financial and weather modeling.

The Blue Gene supercomputer delivers a peak performance of 5.7 teraflops with a single full rack system. With a footprint of less than one square meter, the system delivers more than 10 times the performance of other supercomputers on the market while occupying less floor space and consuming significantly less power.

## CIA Invests in Facial Imaging

The U.S. government is investing in 3-D facial imaging technology as part of its homeland security efforts. In-Q-Tel, a private venture group funded by the CIA, recently signed a strategic development agreement with A4Vision, a maker of advanced identification software and 3-D facial-imaging products. The agreement enables In-Q-Tel to use A4Vision's core 3-D facial biometric imaging and identification technology in new applications planned for commercial and government markets.

"A4Vision has been working with the U.S. and other governments worldwide since our inception," said A4Vision CEO Grant Evans. "We anticipate forthcoming developments with In-Q-Tel to present new dimensions in 3-D imaging security, ranging from access control at borders, to buildings, networks, airports and secure areas to identifying persons or objects in transit or transport — all areas of keen global interest at present."

## It's All So Clear Now



Engineered with ground-breaking technologies, the GigaWorks™ S750 is a 7.1 speaker system that represents the new state of the art in PC audio performance. The two additional surround speakers give FPS gamers the advantage of precise positional audio that a 5.1 speaker system simply can't match. And with a chest-thumping 220 Watt subwoofer, and the amazing detail delivered by titanium supertweeters in each two-way satellite speaker, the GigaWorks S750 will give you a more intense and dramatic experience with games, movies and music than you've ever imagined.



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# At Your Service

## *Web services promise to revolutionize the data center.*

In his keynote address at a recent industry conference, Eric Rudder, Microsoft's senior vice president of servers and tools, outlined the shift under way toward a world of highly connected software. He described a future in which applications are able to interact and exchange data with other applications, independent of the underlying platform.

"The world we live in is more connected than ever before," Rudder said. "It is vital that developers have the tools to build connected systems that can enable organizations to reach out beyond their four walls to interact with customers and partners in new and valuable ways."

Rudder was talking about "Indigo," the code name for Microsoft's next-generation Web services technology, which is slated for beta release later this year. However, the fact that Microsoft is readying a Web services product points to the significance of this technology trend and the service-oriented architecture (SOA) concept at its heart.

An SOA is an approach to application development that breaks down business applications into "services" — specific pieces of functionality — that can be combined and re-used. It enables application functionality to be delivered to any end-user interface or be used to build other services. This modular approach allows businesses to build applications that can provide more flexibility.

In other words, business processes and data are no longer "trapped" within monolithic applications that cannot communicate with other applications and interfaces. Some obvious applications of an SOA include customer and employee self-service portals, Web enablement of legacy systems, supply-chain management and executive dashboards.

However, an SOA can enable a wide range of applications, including trading exchanges, e-commerce, business-process management, reservation and loyalty systems, e-government and service delivery. It offers strategic benefits for organizations in industries such as energy, financial services, government, healthcare, insurance, travel, pharmaceuticals, manufacturing, publishing, retail, shipping and telecommunications.

"With consolidation and mega-mergers impacting so many market sectors, customers are telling us they want to adopt technologies that can help them integrate systems to maximize business value as well as enable them to implement innovative business strategies that can improve their competitive positions," said Alfred Chuang, chairman and chief executive officer, BEA Systems. "We see

SOA as an enabler — an IT approach that can help companies unify their infrastructures, work smarter and faster, and turn creative ideas into strategic advantages."

The SOA concept is linked to Web services technologies, such as extensible markup language (XML) and Simple Object Access Protocol (SOAP), as these open Internet standards provide a near-ubiquitous framework for application inte-

*"Until now, service-oriented architectures have only been implemented by a few leading-edge enterprises due to high costs and the level of technical skill required. However, Web services are now making it both affordable and possible from a skills point of view."*

gration. According to Gartner, advances in Web services technology and standards are the driving forces that will take SOA to mainstream adoption.

"Until now, service-oriented architectures have only been implemented by a few leading-edge enterprises due to high costs and the level of technical skill required," said Massimo Pezzini, VP and distinguished analyst at Gartner. "However, Web services are now making it both affordable and possible from a skills point of view."

However, an SOA isn't a technology per se but rather a set of principles and practices that makes the enterprise more agile and less locked into certain ways of doing business as applications. It is a key component of the real-time enterprise, creating the foundation to respond faster to changing business requirements and to react to events in real-time.

According to analysts, an SOA is the first salvo in a data center revolution that will ultimately lead to the event-driven architecture (EDA). While services are connected in predictable sequences, an EDA allows for events to trigger less-predictable, parallel actions. So far, only the most sophisticated developers are creating EDAs, but an SOA will provide organizations with the basis for an evolution to an EDA over the next several years.

# Aria

*The delightfully diminutive PC.*



There are plenty of computers based on cube-shaped cases available today. So what's so nifty about Aria? First of all, it's upgradeable. While other cube case computer systems force you to live with pre-installed, proprietary motherboards, Aria accepts standard MicroATX motherboards. So when it's time to upgrade your system, you can choose from a vast range of available motherboards. Secondly, its built-in 300 Watt power supply delivers far more power than the barely-adequate units installed in other cube cases. And finally, Aria is the quietest PC case in the entire world. So if you're tired of your boring, bulky computer, upgrade to Aria.



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# Wi-Fi Gets Vocal

*Phones combining wireless and cellular technology are set to make noise.*

**W**i-Fi technology seems to be everywhere these days. College campuses, airports, bookstores, coffee shops, hotels, sports arenas — even entire cities — feature wireless “hotspots” where people can use their laptops to check e-mail messages and explore the Internet. In addition, more and more consumers are using the technology to wirelessly network computers and printers in their homes, while countless retail, distribution and manufacturing businesses are implementing wireless solutions for improved mobility, productivity and inventory control.

But Wi-Fi is poised to break new ground with the development of dual-mode handsets capable of making calls over either cellular or Wi-Fi networks. The phones are called Voice over Internet protocol (VoIP) over Wi-Fi — or, simply, voice over Wi-Fi — handsets. Like conventional VoIP services, they digitize the voice and send it as data packets over the Internet. But they do it wirelessly, over an 802.11, or Wi-Fi, network.

“Wi-Fi capability will eventually become a common feature in cell phones, just as it is becoming standard in laptops today, giving mobile operators a big opportunity with Wi-Fi voice,” said Infonetics Research analyst Richard Webb.

## Rapid Growth Expected

Corporate Wi-Fi-only handsets have been commercially used for the past year or so, but analysts agree that voice over Wi-Fi will only gain mass-market appeal through a union with cellular. Cellular networks far outnumber Wi-Fi networks and cell phones currently own the mobile voice market.

The hybrid phones let users make connections using a local wireless Internet access point and seamlessly switch over to a cell phone network whenever necessary. The net result is greater flexibility in mobile communications as well as potential cost savings gained by shifting onto the Internet call minutes that would otherwise count against a cell phone plan.

Infonetics reports that sales of dual-mode Wi-Fi/cellular handsets hit \$6.6 million in 2004, and units totaled more than 8,000 — even though the units were not commercially available until the fourth quarter of the year. The number of deployed dual-mode devices is projected to grow dramatically — to about \$3 billion worldwide by 2009 — as enterprises take advantage of the opportunity to offer employees flexible mobile access over different forms of wireless networks. In-

Stat/MDR predicts that almost a quarter of the world’s cell phones will use Wi-Fi for voice by 2009.

## Power Play

Until recently, Wi-Fi adoption in handheld devices has been hampered by design limitations in Wi-Fi chipsets, and their relatively high power consumption. But that is changing due to breakthroughs in the design of Wi-Fi integrated circuits (ICs). These new circuits have allowed the integration of all three of the necessary subsystems — radio, baseband and Media Access Control (MAC) — onto one chip offering 802.11b and/or 802.11g communication. This has resulted in smaller ICs that use less power, especially in the “sleep” or “standby” modes that take up most of a Wi-Fi appliance’s running time.

“As Wi-Fi ICs continue to solve the problem of power consumption they will find their way into smaller devices,” said Phil Solis, senior Wi-Fi analyst at ABI Research.

Such ICs are also cheaper to manufacture than their predecessors, and a trend of increasingly lower cost seems set to continue as the market develops. Several manufacturers are now producing these combination chips, notably Atheros, Broadcom and Philips, and handheld devices employing them are starting to enter the market. Nokia and Motorola have each announced new smartphones that integrate Wi-Fi with cellular technology. It is also well known that HP has one in the works.

## Targeting Corporate Users

The basis for Wi-Fi’s adoption in cell phones, PDAs and other portable devices lies in its increasing use in the home. Surveys indicate that, in the U.S., about a fifth of all broadband Internet customers already employ Wi-Fi for wireless distribution of online access around the house. Increasing availability of affordable Wi-Fi handsets and services should build on that foundation. ABI Research expects strongest growth in the cell phone sector, rather than in PDAs.

Yet, ABI says enterprises eventually will become prime target buyers for dual-mode phones. The research firm notes that commercial concerns account for nearly 30 percent of cell phones being purchased today. This is largely due to the fact that the convenience of mobility and access to information stored on cell phones has made it more practical for office users to continue to use their cell

phones versus switching to the enterprise telephone system when at the office.

“Many enterprises now have established Wi-Fi networks and integrating voice-over-Wi-Fi functionality is a natural

with larger scale availability by way of integration into existing mobile devices, this market will gradually become mainstream.

Many questions remain about

Currently the voice over Wi-Fi market is limited to niche verticals such as healthcare, manufacturing and education. But with larger scale availability by way of integration into existing mobile devices, this market will gradually become mainstream.

progression,” said Solis. “As Wi-Fi networks proliferate, it only makes sense to give users the ability to switch from the cellular carrier’s network to the enterprise Wi-Fi network.”

Manufacturers are also working on the issues of integrating the Wi-Fi network with the company PBX, a requirement for Wi-Fi-enabled handsets to remain useful as a voice device outside the enterprise Wi-Fi data network.

Currently the voice over Wi-Fi market is limited to niche verticals such as healthcare, manufacturing and education. But

whether cellular carriers are going to accommodate this market but as most cellular standards are open and interoperable, carriers cannot prevent handset makers from producing handsets with voice over Wi-Fi integration.

“Initially, of course, carriers may see this as a threat for fear of losing service revenue when these handsets are used on the Wi-Fi network,” said Solis, “but long term, as with most new developments, carriers will likely see dual-mode cellular/voice-over-Wi-Fi handsets as a means to differentiate their offerings.”

## Chicago Ponders Massive ‘Hotspot’

**C**hicago city officials in March formed a task force to investigate the possibility of a massive Wi-Fi network that would make wireless access available throughout the nation’s third-largest city.

Chicago already offers wireless access through the city’s 78 public libraries, and city officials want to complement this service with 7,500 wireless antennas placed atop light poles. Christopher O’Brien, the city’s chief information officer, told the Chicago Tribune that such a service would cost about \$18.5 million to roll out. He suggested the city could make up the costs by charging a small fee to locals and a higher fee to tourists.

In addition, Edward Burke, a city alderman, said he would propose a law that would preserve the city’s right to install such a network, even if the state legislature approves a bill that

would prevent municipal networks.

A number of other cities are examining the feasibility of deploying wireless networks or have actually begun deployment. That, in turn, has elicited strong opposition from large telecom vendors who have been lobbying for legislation in a number of states limiting the right of municipalities to create such systems. The telecom operators claim that municipal networks are an unfair form of competition.

Philadelphia is preparing to launch the biggest municipal Wi-Fi project in the nation. When the city announced its plan, the phone and cable TV companies that already provide broadband service fought back by pushing a state law banning cities from building Wi-Fi networks. Philadelphia won an exception to the rule, but the ban still applies to other communities in Pennsylvania.

## High-Tech Military Training

Artificial reality and wearable computers — two formerly hot technologies that never really got off the ground — have been combined in a development system for markers of training programs for military and first-response personnel.

Quantum3D's Expedition solution integrates the latest in binocular helmet-mounted-display technology, an M4A1 training weapon and a tactical visual computer worn as a vest. Together these components provide an immersive, real-time 3D environment complete with surround sound, voice commands, a weapon-mounted synthetic environment scene and motion control. A wireless LAN enables coordinated squad-level interaction.

The open-architecture platform, based on commercial off-the-shelf software, enables the rapid development of mission-rehearsal systems. Expedition is based on technology developed in partnership between Quantum3D and the U.S. Army Research Development and Engineering Command, among others.

## Anti-Spam Code Battles HIV

Microsoft Research has pioneered promising new ways to combat HIV with software typically used to analyze large computer databases and complex digital images, or to separate spam from legitimate e-mail.

At the 12th Conference on Retroviruses and Opportunistic Infections, Microsoft researchers David Heckerman and Nebojsa Jojic showed how medical researchers can use machine learning, data mining and other software techniques to comb through millions of HIV strains to find the genetic patterns necessary to train a patient's immune system to fight the virus. The first of these vaccine designs is currently undergoing laboratory testing.

The researchers, in collaboration with doctors and scientists from the University of Washington in Seattle and Australia's Royal Perth Hospital, plan to exploit these patterns to create improved vaccine designs that pack more HIV-fighting genetic markers into vaccines.

## Le Métro Goes Wi-Fi

Workers in Paris' La Defense subway station are now using handheld devices that deliver information specific to their jobs, location and the time of day. The PDAs inform workers of service disruptions and traffic jams as well as timetables and routes so they can provide time-constrained commuters with accurate answers to their questions in real time.

The Paris subway system, Régie Autonome des Transports Parisiens (RATP) has deployed the context-aware Wi-Fi service in the La Defense subway station, the second-largest transportation hub in France and among the 10 largest in Europe. More than 480,000 passengers travel daily through the La Defense hub, the connection point for six types of transportation systems.

Today, passengers can connect to the Wi-Fi network in La Defense and access the Internet but only RATP employees are able to access advanced Wi-Fi services.

## Bill Gates Knighted

Microsoft Chairman Bill Gates received an honorary knighthood from Her Majesty Queen Elizabeth II on March 2 in a private ceremony held at Buckingham Palace. Because he is not British, Gates cannot use the title "sir" before his name, but can include the initials KBE — Knight Commander of the British Empire — after it.

According to the U.K. Foreign & Commonwealth Office, the honorary knighthood recognizes the contributions of the Bill & Melinda Gates Foundation in improving health and reducing poverty in parts of the Commonwealth and elsewhere in the developing world. The foundation has an endowment of approximately \$28 billion.

Gates also was recognized for his contribution to enterprise, employment, education and the voluntary sector in the U.K. Microsoft employs nearly 2,000 people in the U.K.

# Survey: Laptop Data is at Risk

*Most companies lacking formal procedures for laptop data backup.*

Laptops represent one of the most overlooked backdoor risks to data backup and security for small to mid-sized businesses (SMBs), according to a recent survey conducted by storage vendor Imation.

Despite the growing use of laptops in business, most companies do not have formal data backup and storage procedures in place for backing up data, and instead rely on the individual employee for laptop data backup. Imation surveyed 200 companies that said they rely on an extensive network of employee laptops, and half reported they have no formal procedures in place for backing up mission-critical data hosted on laptops, leaving them vulnerable to potential data loss.

In addition, 57 percent said they hold the individual employee responsible for uploading their data onto the company server. The survey also found that less than one-third (29 percent) of these companies use software to back up changed files to a corporate network.

"Protecting the data hosted on laptops traditionally has not been a concern of IT departments. Their role has been to maintain and protect a company's servers and systems," said Brent Ashton, Imation's marketing manager for small and mid-sized businesses. "The IT department won't miss a backup window due to a lost laptop or hard drive failure, but as the workforce becomes increasingly mobile, more and more mission-critical information, such as customer records, sales presentations and company financials, is being stored on laptops putting data at potential risk of loss."

To avoid potential data loss on laptops, Imation recommends that users take the following steps:

- Implement software that automatically backs up laptop data on a regular basis. Most programs work by having the software monitor the laptop hard drive for any changes to data files or directories. Changes are then backed up locally on the laptop's hard drive. The next time the user connects to the company's network, the backup software automatically sends the changes to a server for further backup to tape.

- Copying laptop files to a network drive for further backup to removable tape media is also a common strategy for companies not employing special software. In this case, the user should review the company's network backup processes

to understand how often backups are performed. Users should learn what files, programs or folders regularly get backed up, where data is stored and for how long, and how the data can be accessed once stored.

- If users don't have regular high-speed access to a company's network/file server, they should back up mission-critical data to removable data storage media. CDs and DVDs are simple, effective and cost-efficient solutions for backing

*"As the workforce becomes increasingly mobile, more and more mission-critical information, such as customer records, sales presentations and company financials, is being stored on laptops putting data at potential risk of loss."*

up employee laptop data quickly. Users should clearly label their files with the contents and date of backup, and keep one copy in the laptop case and one copy in a secure location — away from their place of business or laptop case. In addition, sensitive data should be protected from loss or theft while traveling by transferring sensitive files from the laptop to a USB flash drive with password protection.

Imation also noted that it's not just laptop data at risk. While 90 percent of these companies are operating today with a formal data backup and storage strategy in place, less than half (32 percent) of these companies perform regularly scheduled testing and evaluation of their backup policies and procedures on a minimal basis of once per quarter.

"Performing regularly scheduled backups, as well as testing and evaluating backup processes and procedures at least quarterly, is the best way to protect against data corruption or deletion," Ashton said.

# Beyond the Password

*Proposed standards promise to enhance security by making two-factor authentication easier to deploy.*

**W**hat's the password? For millennia, that challenge provided adequate protection against all manner of security threats. However, the rise in malicious Internet attacks, combined with the growth of mobile computing and more open corporate networks, has increased the need for strong authentication for user login and remote access. Online identities secured only by static passwords can be exploited easily, resulting in identity theft or compromised systems.

Strong or two-factor authentication requires users to possess a hardware token, such as a key fob or smart card, in addition to a password or PIN in order to gain access to the network. The token generates a unique identification number that is changed frequently — as often as several times a minute. After entering his password or PIN, the user is challenged to enter the identification number displayed on the token.

Even if someone were to guess the

user's password, authentication would be denied unless that person also had the security token. If the token were to fall into the wrong hands, it could not be used to access the network without knowledge of the password.

## Standards Needed

So why isn't strong authentication more prevalent? Most existing two-factor technologies have proven too expensive and inflexible for broad-based deployment, according to an industry consortium promoting an open standard for strong authentication. This constraint has become especially apparent to organizations that wish to use both strong authentication to protect customers from account compromise and phishing attacks.

"Despite increasingly higher levels of threats and attacks on the Internet, the adoption of strong two-factor authentication remains limited in scope. The lack of interoperability among technology vendors, as well as the absence of open

specifications, has resulted in solutions with hardware and software components that are integrated through proprietary technology, resulting in high cost, poor adoption and limited innovation," said Uzi Dvir, CTO for Aladdin Knowledge Systems.

Aladdin is one of more than 30 device, platform and application companies that are supporting the initiative for Open AuTHentication (OATH) to drive adoption of open, standards-based strong authentication technology. The OATH reference architecture leverages widely adopted protocols such as LDAP and RADIUS as its foundation. In addition, member companies are developing new specifications for key missing standards for credential provisioning and a One Time Password (OTP) algorithm.

"The transition from proprietary to open architecture should expand the use of strong authentication across all industries," said Bob Blakley, chief security and privacy scientist for IBM and OATH participant. "OATH and its focused efforts will help create online security that is stronger and faster to deploy. OATH participants encourage others to join this effort and become active participants driving the evolution of authentication."

## Taking the OATH

OATH participants are united in three key goals: promoting secure and safe online transactions for consumers and business users; leveraging existing standards to create an open reference architecture for strong authentication; and reducing the cost and complexity of strong authentication to drive broad enterprise and consumer adoption.

"There is a strong need for a common standard that can enable the increasing number of two-factor authentication devices and authentication servers to interoperate," said Ernesto Frutos, director of product management, Authenex. "The OATH initiative's roadmap fully satisfies this demand."

With OATH, device manufacturers, software vendors and service providers will be able to integrate these open interfaces within their products to create interoperable solutions. Vendors will be encouraged to create a new, more versatile generation of physical tokens that can combine three authentication methods, including OTP, PKI-based authentication and SIM-based authentication for GSM and 3G networks. Armed with such flexi-

bility, the same device will be capable of securely authenticating an end-user across multiple networks and applications with much greater flexibility and interoperability.

Through the adoption of OATH, organizations will find more technology choices and lower total cost of ownership. They will also be able to leverage their existing network, application and directory infrastructure instead of having to purchase and deploy specialized proprietary solutions.

"As OATH adoption becomes ubiquitous, scalability requirements will move from enterprise to Internet scale," said Mark Griffiths, vice president, Authentication Services, VeriSign Security Services

## RSA's Alternative

RSA Security also believes that two-factor authentication will see increasing interest from large enterprises aiming for stronger security inside the firewall, and from small to midsize business (SMB) and consumer markets seeking to better protect identities. The company has proposed its own OTP specification standard, which is designed to ensure that credentials are created in a manner that enables businesses to reduce deployment costs and provide access to multiple sites with a single credential or token. Credentials are at the core of any authentication solution, and customers gain the greatest value from these systems when credentials are managed throughout their lifecycle.

"The IT security industry is at a turning point, as strong authentication becomes mainstream with a broader range of companies, along with consumers, expecting the same levels of security that enterprises have leveraged for years," said Art Coviello, RSA Security's president and chief executive officer. "As strong authentication becomes pervasive, organizations need a robust and open platform that allows for easy, cost-effective integration of one-time passwords with back-end technology."

Regardless of which two-factor authentication solution comes to the forefront, such standards are poised to push stronger security out of the enterprise and into the SMB and consumer markets. The challenge, "What's your password and unique token ID?" will herald a new era where network security breaches and phishing attacks are thwarted by strong authentication.

## IETF Under OATH

The initiative for Open AuTHentication (OATH) has submitted its algorithm for the generation of One-Time Passwords (OTP) to the Internet Engineering Task Force (IETF). The industry consortium plans to make the standards-based algorithm freely available to ease the adoption of strong authentication and enable mobile users to securely access networks from varied computers.

According to OATH, OTPs are one of the simplest and most versatile forms of two-factor authentication because their use does not require the installation of client software or access to the ports of remote machines. As a result, users can roam across multiple machines, including home computers, kiosks and personal digital assistants.

Most existing OTP solutions are time-based, and thus require devices with clocks and careful time synchronization between devices and servers. In contrast, OATH's algorithm is counter-based and can be embedded in high volume devices such as Java smart cards and USB dongles. The counter-based design also significantly

reduces the burden on enterprises that adopt solutions using OTP.

Based primarily on existing standards, the architecture is designed to ensure that secure credentials can be provisioned and verified by disparate software and hardware platforms, removing traditional barriers to widespread adoption and ultimately giving enterprise IT managers better control over their security environment.

OTP can be implemented by any hardware manufacturer or software developer to create interoperable authentication devices and software agents.

"The OTP algorithm is a cost-efficient and secure building block for one-time password authentication systems. The publication of the OTP specification as an IETF Internet draft will give the security community free access to the algorithm description, as well as a public forum to discuss and improve the specification," said David M'Raihi, principal scientist, VeriSign. "Transparency is the best way to foster confidence and wide-spread adoption of any algorithm or protocol."

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# Divide and Conquer

*Isolating voice traffic on a virtual LAN can improve VoIP security.*

Moving voice traffic onto the data network with IP telephony solutions offers significant business advantages such as simplified network infrastructure, reduced operating costs and improved productivity. Often lost in the excitement is the reality that voice calls face security challenges as they move to IP.

Like the data networks they are built upon, Voice over IP (VoIP) networks must be secured from end to end in order to minimize risk and provide value. One way to boost the security of IP telephony systems is to separate voice traffic from regular data traffic by using a virtual LAN (VLAN). Industry experts say these voice VLANs can limit the threat posed by packet-sniffing tools and minimize disruption in the event of an attack.

VLANs have long been used in data networks to logically group users within an organization. Introduced in the mid-1990s, most VLANs are based on the IEEE 802.1Q and 802.1p standards. The 802.1Q specification establishes a standard method for inserting VLAN membership information into Ethernet frames, while 802.1p is a specification for giving Layer 2 switches the ability to prioritize traffic and perform dynamic multicast filtering.

Computers networked within a VLAN behave as if they are connected to the same wire even though they may actually be physically located on different segments of a LAN. They are extremely flexible because they are configured through software rather than hardware. One of the biggest advantages of VLANs is that when a computer is physically moved to another location, it can stay on the same VLAN without any hardware reconfiguration.

VLANs also have traditionally been used to improve network security by isolating groups. High-security users can be grouped into a VLAN, and no users outside that VLAN can communicate with them.

It is this ability to isolate groups that has made VLANs important elements of VoIP implementations. VLAN features enable organizations to separate their voice traffic from their data traffic while ensuring that traffic flows through regulated checkpoints rather than directly

between any two unsecured end points. This allows network administrators to greatly reduce the risk that intelligent data devices can be used to sniff VoIP packets. For example, a VLAN could be restricted to accessing just a voice server and barred from accessing data servers and the Internet.

The VLAN layer provides basic network security and can be added without changing the physical infrastructure. Most experts also recommend that packet filtering be done on the routing device providing connectivity between the voice and

Separating voice and data traffic reduces the competition for network resources and thus reduces latency (waiting time) for transmission services.

data VLANs. An additional level of security can be accomplished with the use of a stateful firewall between the voice and data segments.

In addition to security considerations, VLANs can significantly impact Quality of Service in converged networks. Separating voice and data traffic reduces the competition for network resources and thus reduces latency (waiting time) for transmission services. Since VoIP calls are extremely sensitive to latency issues, experts say VLAN segmentation is an inexpensive approach to improving call quality in an existing network infrastructure. In addition, the IEEE 802.1p/Q standards allow packet prioritization, giving voice frames higher priority than data frames.

VoIP is gaining traction because it offers important business benefits. Market research firm Infonetics Research found that worldwide revenue from VoIP equipment rose 54 percent to \$3.9 billion in 2004. But new technology always comes with new challenges, and VoIP does introduce security risks into the network infrastructure. Separating and isolating voice traffic onto a virtual LAN is one way of mitigating those risks.

# Staying On Track

*Earned-value management can keep projects from veering off course.*

**T**he Sarbanes-Oxley Act makes senior executives legally responsible for accurately reporting the financial condition of their companies. For companies involved in any kind of project management, that includes an accurate assessment of the work status and costs on all ongoing projects.

Cost overruns are not uncommon with huge, multi-year projects — but if they are not anticipated and reflected in the financial forecasts of the company, there could be big trouble. Because cost overruns can seriously impact projected profits, they fall under the category of “material changes in the financial condition or operations” that must be publicly disclosed within four business days of their discovery, according to Section 409 of Sarbanes-Oxley.

Project management is also affected by Section 404 of Sarbanes-Oxley, which details internal controls requirements. “Scope creep,” shifting requirements and personnel changes have always been key factors in managing large, multi-year projects. Now, however, companies must be

able to demonstrate that they have adequate internal controls and established processes for dealing with such factors.

Employing a form of earned-value management (EVM) can help executives meet their project management obliga-

**EVM is a method of imposing accountability on a project and exposing potential problems while there is still time to fix them.**

tions under Sarbanes-Oxley. EVM is a set of best-business practices, processes and tools that promise to give project managers a powerful early warning system for programs veering off course.

EVM enables a comparative analysis of actual and projected costs of a project throughout its life. A number of government agencies, including the Department of Defense, Department of Energy, NASA and the Office of Management and Bud-

get, have long regarded EVM as a solid means of forcing discipline on project teams and contractors.

“Most corporate financial executives track only planned and actual project costs; all too often this leads to early calculations that underestimate final costs,” said Joel M. Koppelman, CEO of Primavera, a leading provider of project management solutions. “The final cost of a project can be accurately predicted — even years before completion — by taking into consideration the earned value of work accomplished to date.”

Basically, EVM involves breaking down a project into manageable chunks with clear work tasks and budget figures for each chunk. As the work progresses, the budget for each task is earned. This provides a metric to measure what was spent and the budgeted amount of the work completed. In addition, there are several indices used as early detection mechanisms to allow problems to be corrected before it is too late.

To get a feel for EVM in action, consider this example offered by Primavera: Suppose there is a 12-month, \$1 million software project with 10 deliverables,

each of which is budgeted at \$100,000. At the end of the first quarter, assume the project team in charge has spent \$300,000. In a traditional planned vs. actual analysis, the project would seem to be on target. But what if the vendor had completed only two of the 10 tasks instead of three as prescribed at the project’s onset? This means that \$300,000 in funds was spent to accomplish \$200,000 worth of work — an earned value of only 67 cents on the dollar. That is a sign the project could be in trouble.

EVM is a method of imposing new levels of accountability on a project and exposing potential problems while there is still time to fix them. Industry experts say it can be easily used to control project costs and provide accurate forecasts in businesses of all types and sizes. And it can help ensure that the balance sheets corporate executives sign will stand up to regulatory scrutiny.

“Given today’s business climate, EVM is virtually mandatory to comply with regulatory requirements such as Sarbanes-Oxley,” said Koppelman. “It isn’t just a good management tool; it’s also an ethical business practice.”

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# Losing the IT Edge?

*U.S. in danger of losing its global technology advantage, reports say.*

The U.S. faces serious challenges to its leadership in science and technology and is losing competitive advantage in the global economy, a high-tech lobbying group warns in a report released recently.

The American Electronics Association (AeA) claims the U.S. is ignoring the factors that sparked a technology revolution in this country and that this ultimately threatens U.S. economic vitality and competitiveness in the global marketplace.

According to the report, entitled "Losing the Competitive Advantage: The Challenge for Science and Technology in the United States," other countries are rapidly gaining on the U.S. in terms of manufacturing capabilities and technological innovation. Booming economies in India and China are way ahead in churning out skilled engineers, the Washington-based organization noted.

"Even if we were doing everything right, the United States still faces major new challenges from an intensely competitive world," said AeA President and CEO

William T. Archey. "But we are not doing everything right, which exacerbates the challenges before us."

## Other Warnings Issued

Others have echoed warnings about an impending U.S. technology skills gap. Federal Reserve Board chairman Alan Greenspan recently told a Senate panel that the U.S. faces a critical, long-running economic challenge to ensure that its workforce is equipped with the technology skills required to compete in a global marketplace. And a new study by Deloitte Consulting predicts the U.S. will experience a shortage of experienced IT talent when baby boomers begin retiring in 2008.

The AeA report finds that other countries, including but not limited to China and India, have restructured their economies to benefit from the free-market system they once resisted. They are dramatically increasing the skill sets of their workforce, investing in research and development (R&D), and adopting

advanced technologies — all to create wealth and spur economic growth.

"The good news is that as more countries adopt free markets, they open their doors to U.S. products and services. But, this also presents a challenge for the United States as these countries now aggressively compete against us — or soon will," said John V. Harker, Chairman of AeA's Board of Directors and

grams fell 36 percent last year. The report states that the trend is disturbing because the financial support of foreign nationals, who comprise more than 50 percent of math and engineering doctorates, make many of these programs feasible.

In February, Greenspan told the Senate Committee on Banking, Housing and Urban Affairs that the supply of highly skilled workers has failed to keep up with

**"We need to better educate our domestic workforce, tap into the world workforce through immigration, and rebuild a system that supports innovation and technology adoption."**

Chairman of InFocus Corp. "The United States can no longer take its technological dominance for granted."

The report analyzes how R&D funding supports innovation by investing in the technologies that advance society, increase productivity and ultimately improve standards of living. The Internet, MRI scanning technology, Doppler radar and GPS — to name a few — were all born from U.S. federally sponsored research. While funding remains available, it has decreased from its peak in 1987 and has declined substantially as a percentage of the economy.

a persistent rise in the demand for such skills over the past two decades. At the same time, he said, demand for lesser-skilled workers has declined.

"The failure of our society to enhance the skills of a significant segment of our workforce has left a disproportionate share with lesser skills," he said. "The effect, of course, is to widen the wage gap between the skilled and the lesser skilled."

## Adapting to Change

The Deloitte Consulting survey of 123 human resources executives from several industries including healthcare, retail, technology and telecom showed that up to one-third of respondents expect 11 percent or more of their overall workforces to begin retiring when baby boomers start turning 62 over the next few years. Fifteen percent to 20 percent of the surveyed HR executives expect those retirements to create "critical shortages" in IT talent functions within the next five years.

According to the AeA report, policymakers, industry executives, community leaders, teachers and parents need to recognize that the world is changing and that the U.S. must adapt to an increasingly competitive environment if it is to remain at the forefront of the technology revolution.

"While no country can totally control the forces governing world commerce, innovation and competitiveness, it can improve its chances for success by being prepared," said Archey. "We need to better educate our domestic workforce, tap into the world workforce through immigration, and rebuild a system that supports innovation and technology adoption. Confronting the issues that threaten future U.S. competitiveness can no longer be deferred."

## Brain Drain?

The AeA report also claims the U.S. K-12 educational system is failing to provide students with the math and science skills they will need to compete as knowledge workers in the 21st century. In an information economy, the majority of jobs — not just those specifically in high tech — require a grounding in math and science. The U.S. higher education system is also not graduating enough engineers, computer scientists and mathematicians to support the growth of the U.S. high-tech industry.

China cultivates almost four times as many engineers than the U.S. does. Chinese officials offer tax breaks to companies conducting R&D. And India's technology parks invest in home-bred workers who, in turn, join dominant Indian technology companies.

At the same time, the U.S. has raised the bureaucratic barriers for high-skilled immigration. One out of five U.S. scientists and engineers is foreign-born, but the number of skilled workers immigrating to the U.S. declined by 27 percent between 2001 and 2003. In addition, applications to U.S. graduate engineering pro-

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## Internet Pioneers Honored

The Association for Computing Machinery has named Vinton G. Cerf and Robert E. Kahn the winners of the 2004 A.M. Turing Award "for pioneering work on the design and implementation of the Internet's basic communications protocols."

In 1973, Cerf joined Kahn in a Defense Advanced Research Projects Agency project to link three independent networks into an integrated "network of networks." Their collaboration led to the realization that a "gateway" (now known as a router) was needed between each network to accommodate different interfaces and route packets of data. This meant designating host computers on a global Internet, for which they introduced the notion of an Internet Protocol (IP) address. By 1978 they had developed TCP/IP, the networking protocol that became the basis for what is now known as the Internet.

The Turing Award, named for British mathematician Alan M. Turing, was first awarded in 1966. Considered the "Nobel Prize of Computing," it carries a \$100,000 prize, with financial support provided by Intel.

## Spammers Boost E-mail Harvest

Directory harvest attacks (DHAs) reached record levels in February, according to e-mail security and management vendor Postini. DHAs are brute-force attempts by spammers to find valid e-mail addresses by connecting to e-mail servers and guessing addresses until valid ones are found. Those addresses are then harvested for use in later spam campaigns.

"February was the worst month ever for DHAs," said Andrew Lochart, director of product marketing for Postini. "In fact, the five worst days ever recorded by Postini were in February. The average Postini customer was attacked 224 times per day, with each attack comprising 166 invalid message delivery attempts."

The firm also reported that the volume of unwanted e-mail has remained virtually unchanged at 88 percent while only 12 percent of all e-mail is legitimate. Postini's findings are based on the 14.8 billion messages it processed in February.

## E-cycling Incentives Proposed

U.S. Senators Ron Wyden (D-Ore.) and Jim Talent (R-Mo.) have introduced legislation that would give consumers and businesses tax incentives to safely dispose of electronic devices, which contain a number of hazardous toxins including lead, mercury and cadmium. The Electronic Waste Recycling and Promotion and Consumer Protection Act of 2005 would establish a \$15 tax credit for consumers who recycle their old computers, TVs and other devices, provided they use qualified recyclers. It would also provide an \$8 per unit tax credit for companies that recycle at least 5,000 display screens or computer systems per year.

Harmful e-waste is a large and growing problem in the U.S., with some experts estimating that more than 150 million tons of electronic equipment was disposed of in 2004 alone.

## PDAs Nearing End of Life

The traditional PDA is nearing the end of its life as a major product segment, according to In-Stat. Shipments reached only 8.7 million units in 2004, down from 10 million in 2003, the high-tech market research firm says.

The outlook for upcoming years is not good, as the PDA market will have a negative compound annual growth rate of -21.5 percent during the 2004-2009 period. The market decline will occur as users switch to other products, such as smartphones and portable media players, a natural evolution of the category.

By 2009, In-Stat expects this segment will be composed of devices designed for specific vertical markets and low-end products. In fact, manufacturers will introduce more corporate-focused and niche-focused devices, such as those incorporating GPS, in 2005.

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