

VERTEKS CONNECTION

JUNE/JULY 2007



A Matter of Time

In business for well over a century, George Mangan Insurance entrusts its IT needs to its longtime business partner — Verteks Consulting.



In a world of here-today-gone-tomorrow businesses, George Mangan Insurance is notable for its longevity. The firm has been serving the insurance needs of Ocala, Fla., residents and businesses since 1894 — longer than some of the well-known insurance providers it represents.

It makes sense that an organization with such a storied past would choose a technology provider that's also in business for the long haul. For more than a decade, George Mangan Insurance has turned to Verteks Consulting for IT

knowledge, service and support. The relationship is based upon the kind of trust that only comes through time.

“When Don [Gulling] first opened Verteks he came to me for insurance and we soon made Verteks our exclusive partner for automation. It has worked well ever since,” said Pat Mangan, president of George Mangan Insurance. “Don has a great staff. They’ve been very helpful and supportive of our agency.”

Expert Advice

In fact, Verteks Consulting’s experienced engineers serve as IT staff for George Mangan Insurance. By fully outsourcing its IT needs, George Mangan Insurance can focus on its core business and leave technology to the experts.

“I learned early on that, as the owner of a business, there are several things I need to know how to do. Fixing computers is not one of them,” Mangan said. “When it comes to prob-

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lems with the computers or the server, the first phone call we make is to Verteks.”

To keep those problems to a minimum, the Verteks team takes care of all the regular maintenance and security updates on Mangan’s network. If equipment needs to be upgraded, Verteks provides valuable advice and invaluable expertise.

“We had an older server that we held onto until the very end. About six months before it simply had to be replaced, Verteks came out and gave us some recommendations as to what sort of server would be good for us. I always trust their judgment because they’re the experts — plus I know they have our best interests at heart,” Mangan said.

Superior Service

Verteks Consulting implemented a new HP server and saw to it that all the data was transferred from the old machine. The server runs an application that support Mangan’s entire insurance business, so speed was crucial.

“It went really well,” he said. “There was a lot of data to be switched over, which took a little time, but we were soon back up and running without any problem.”

Over time, Verteks has upgraded several of Mangan’s desktop computers with highly reliable HP workstations. Verteks also recently began handling Mangan’s voice communications needs.

“Verteks implemented a 3Com phone system for us, which is working out to be an excellent fit for our organization,” Mangan said. “Our previous phone system was probably 20 years old and had reached the point where it really

needed to be replaced. The 3Com system should last us for a very long time because of its flexibility and ability to expand.”

Unmatched Support

The 3Com IP telephone system is easy to administer and provides George Mangan Insurance with a number of useful new features. Because the system routes calls over the firm’s data network, it is able to integrate voice mail and e-mail and provide Web-based call logs and reporting.

“I was visiting Don one day and he gave me a demonstration of the 3Com system they have in place in their offices. It was amazing,” said Mangan. “When Don showed me how I could retrieve my phone messages through e-mail I was sold.”

Like any business, George Mangan Insurance can’t be without its phone system, so Verteks Consulting handled the implementation without any downtime. Verteks also trained Mangan’s staff on how to use the system, and is available at a moment’s notice should any problems arise.

“We had one problem early on, and it wasn’t with the phone system itself. The battery backup went bad, and Verteks came out and replaced it within 30 minutes,” Mangan said. “I was very impressed.”

In the rapidly changing technology field, that kind of customer support is hard to find — and that’s why so many Ocala-area businesses rely on Verteks. As George Mangan Insurance continues its second century in business, Verteks Consulting is there to serve all its technology needs.



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”
**— Pat Mangan, President,
George Mangan Insurance**

IT Infrastructure Outsourcing Delivers Highest Cost Savings

Businesses can achieve average cost savings of 27 percent by outsourcing their IT infrastructure, a recent Impact Research study from Info-Tech Research Group reveals. Enterprises traditionally outsource IT in four areas: infrastructure, application development, application support and help desk. Among companies that are good candidates, the best results are achieved by moving IT infrastructure to an outsourcing model.

“Every enterprise should evaluate their infrastructure, both server and network, for an outsourcing fit. It has the highest average return, low variability of success, and few risks,” said Jennifer Colasanti, research consultant with Info-Tech Research Group.

The report finds that application development had the second-highest average savings rate at 20 percent, while application support offered 16 percent and help desk 13 percent.

For research purposes Info-Tech defined outsourcing as any engagement in which a third party has ownership over a deliverable. Info-Tech's Impact Research Report “IT Outsourcing with Purpose,” also documents that cost savings are correlated to the percentage of IT budget being outsourced. As the percentage increases, the amount of savings declines given that cost savings no longer take the top priority.

“In a third of the organizations studied, increased IT efficiency was the key motivator for outsourcing,” said Colasanti. “In these instances, benefit drivers like access to more expertise, repurposing of employees and the reduction of management overhead and internal training bring greater benefit to the business than cost savings alone.”

Colasanti notes that in addition to reducing the cost of existing operations by 13 percent to 27 percent and improving efficiency, IT outsourcing can help small and fast-growing companies level the IT playing field with large enterprises by providing similar advantages.

Info-Tech Research Group recommends that when evaluating outsourcing, companies first identify their primary motivator. If organizational fit is not investigated appropriately, outsourcing can be a detriment to the company.

“It’s important to consider how much of the IT budget will be dedicated to outsourcing as well as the type of outsourcing planned,” Colasanti said.



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Letting Go

Voice over wireless LAN technology can help organizations kick the cellular habit.

Organizations are becoming increasingly mobile, but many business people remain chained to their desks. That's because one very important communication device — the desktop phone — remains firmly tethered, and a personal cell phone isn't always a good alternative.

Luckily that's changing thanks to voice over wireless LAN (VoWLAN), which combines voice over IP (VoIP) and wireless networking technology to free the desktop phone from its cord. When an organization adds VoIP to an existing wireless network, every employee can have a cordless phone in the office, carrying their extensions with them everywhere they go — much like a cordless phone in the home — without the need to buy cell phone contracts for everyone.

In addition to wireless VoIP phones, PDAs equipped with softphone software can be used to make calls over the WLAN. Dual mode handsets allow users to switch seamlessly between WLAN and cellular, even in the middle of a call. End-users can be reached via a single phone number wherever they are, and can take advantage of PBX features even when they're on the mobile carrier's network.

A growing number of organizations see VoWLAN solutions as an alternative to cellular phones within the enterprise environment. Although cell phones have revolutionized voice communications, VoWLAN offers a means to reduce cell phone charges, address the problem of spotty cell phone coverage inside many buildings,



and bring mobile users back into the corporate voice network.

Cases in Point

The healthcare industry has been among the earliest adopters of VoWLAN technology. Cellular frequency signals present problems for sensitive equipment in hospitals and other healthcare facilities, yet hospital staff — doctors in particular — often need to be contacted by voice. Wireless VoIP fits the bill.

The hospitality, retail and manufacturing sectors have also been early adopters because employees tend to be highly mobile. VoWLAN enables widely disbursed employees to communicate effectively, increasing productivity and improving customer service.

VoWLAN is also an ideal solu-

tion in education, where many facilities still lack phones. Because adding phone lines can be prohibitively expensive, many faculty members bring their personal cell phones into the classroom but such a stopgap introduces privacy concerns without solving the core problem. VoWLAN enables teachers to keep in touch and brings added security to the classroom.

VoWLAN Challenges

In a wireless VoIP implementation, mobile handsets connect to the network over wireless access points (APs) that route the voice traffic to the telephony server or digital PBX. It's quite similar to the way handsets connect to the network over Ethernet cables in a wired LAN. However, implementing VoWLAN isn't simply a matter of adding another application to the wireless data network. Just as wired LANs must be upgraded for VoIP to account for QoS, reliability and security concerns, chances are that an existing WLAN will also need upgrading.

Part of the problem is that wireless is a contention media — users must share the available bandwidth, so wireless will always have overhead issues and more complex management requirements. While data traffic tends to be sporadic and bursty, voice QoS can't tolerate delays, so throughput capacity is a key consideration. The number of simultaneous calls a single wireless AP can support varies from five to 40, depending on the codecs and data rates used. The WLAN must be engineered with consideration for those factors.

Coverage is another key issue. Unlike data-only WLANs, a VoWLAN infrastructure must be designed for mobile use, with blanket coverage of places such as hallways, stairwells and elevators where people will often need to use their phones. This means more APs must be positioned throughout the facility with sufficient overlapping coverage to eliminate dead spots.

Security has been one of the key sticking points for VoWLAN. The flawed Wired Equivalent Privacy (WEP) standard originally defined in the Institute of Electrical and Electronics Engineers 802.11 wireless standard has long been considered a weakness. However, the IEEE's 802.11i WLAN security standard is a major improvement, incorporating the Advanced Encryption Standard (AES) encryption algorithm and the 802.1x authentication framework. It allows support for the Wi-Fi Protected Access (WPA) security standard and locks down radio frequency communications.

Making the Switch

In recent years the WLAN market has shifted away from so-called "fat" APs toward a more centralized management approach — primarily to support VoWLAN roaming. As users move across multiple APs in the network, handoffs must take less than 50 milliseconds in order to maintain voice quality. However, distributed architectures severely hamper handoffs as all the intelligence resides in the AP itself.

Centralized WLAN switching solutions borrow from the best practices of cellular networks to actively improve call quality. If the switch sees that a client is getting a weaker signal, it can pre-authenticate the handoff to reduce latency. Stateful flow classification gives voice traffic top priority to further improve QoS, and load balancing distributes users across multiple APs.

Many WLAN switches incorporate stateful firewall technology to authenticate VoIP phones and other handheld devices and restrict access to certain areas of the network. Wireless intrusion detection technology helps create a multi-layered defense to protect voice communications. WLAN switches are also scalable and upgradeable as new standards and services emerge.

VoWLAN is not meant to replace cellular phones. However, it helps organizations gain maximum advantage of their VoIP systems by giving every user one phone for both desktop and mobile use. And with evolving WLAN technology and sophisticated handset functionality, VoWLAN solutions can help organizations minimize cell phone costs while improving communications.

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Wireless to the *Nth* Degree

*802.11n boosts wireless LAN
throughput to at least 100Mbps.*

In the alphabet soup of wireless networking standards, 802.11n is the latest proposed entry. While current WLANs based upon the 802.11 standard have real throughput in the 20Mbps to 25Mbps range, this new version would increase real WLAN throughput to at least 100Mbps, with theoretical raw data speeds in excess of 500Mbps.

Of course, 802.11g WLANs have rated throughput rates of up to 54Mbps, even though actual throughput is only about half that. The proposed 802.11n standard improves the efficiency of media access control to provide end-users with at least 100Mbps of application-level bandwidth — comparable to the wired LAN technology used in most offices. As a result, 802.11n provides the capacity to run advanced applications such as streaming video and Voice over IP (VoIP).

At the heart of 802.11n is a technology called MIMO — short for multiple input, multiple output — that employs multiple antennas and radios to transmit and receive data. Although multiple paths typically degrade radio signals, MIMO uses a technique called spatial multiplexing for simultaneous transmission. This not only increases bandwidth but provides greater coverage, enabling very high-speed connections over distances of 150 feet or more.

In addition, 802.11n uses more of the wireless spectrum, when available, to enhance performance; while 802.11g uses 22MHz-wide channels, 802.11n supports up to 40MHz-wide channels. It is also designed to resist interference from neighboring Wi-Fi systems and 2.4GHz devices.

Slow Route to Higher Speeds

Development of the 802.11n standard was officially announced by the Institute of Electrical and Electronics Engineers (IEEE) in January 2004. The process has been slow, however, with substantial reworking of the original draft.

In October 2005, 25 Wi-Fi vendors formed a coalition to accelerate the IEEE 802.11n standard development process. The Enhanced Wireless Consortium designed its specification to support speeds of up to 600Mbps, with mixed-mode interoperability with 802.11a/b/g in the 2.4GHz and/or 5GHz unlicensed bands.

In January 2007, the IEEE 802.11 Working Group for Wireless LANs approved a request to issue Draft 2.0 of the 802.11n standard, with approval slated for March. The battle is not yet over, however — a proposal has to win a 75-percent majority of votes in order to become a standard.

Nonetheless, the Wi-Fi Alliance,

which only allows the name “Wi-Fi” to be put on devices that meet its interoperability requirements, is expected to begin testing and certifying products based on the 802.11n draft standard soon. A final draft of the standard should become available later this year.

Ahead of the Game?

Although full ratification of the standard is not expected until October 2008, a number of companies have already introduced “pre-n” equipment. In December, Airgo announced the availability of the first chipset offering full support for Draft 2.0 of the 802.11n standard. Airgo, headed by former Stanford researcher Greg Raleigh, owns the registered trademark for what it calls “True MIMO.”

Apple made news in January when it formally announced at Macworld Expo that it had adopted 802.11n technology. The announce-

ment was somewhat anticlimactic; users had already discovered that certain Mac notebooks had shipped with a disabled 802.11n chip installed.

Other companies have also released notebooks with 802.11n chips installed but they are all based on Draft 1.0 of the standard, which has been substantially overhauled. Software updates will likely be required to ensure compatibility with the final standard and interoperability with other products.

Although pre-n products are ideal for consumers and small businesses that need a robust WLAN and don’t have to worry about interoperability, enterprises would be wise to wait until later in 2007 before deploying 802.11n devices. However, now’s the time for organizations to begin planning for WLAN technology that finally meets or exceeds wired LAN speeds.

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