Law firm Brinks Hofer Gilson & Lione’s new Voice-over-Internet-Protocol (VoIP) system saves money and boosts employee productivity.
The firm, one of the country’s largest specializing in intellectual property, recently replaced its aging and overburdened PBX (private branch exchange) phone system with a new Avaya IP telephony solution that can scale as the firm grows and needs more phone lines. The new technology is reducing the company’s phone bill and revolutionizing the way its attorneys and staff communicate, resulting in improved productivity and better customer service.

When lawyers are out of the office, they can take advantage of new phone applications, such as unified messaging, through Avaya’s Unified Communication Center, which lets them check voice mail from their e-mail software client and Blackberry devices, or “follow-me” capabilities with Avaya’s Extension To Cellular, which allows them to seamlessly route calls from office phones to cell phones.

Just as important, the new system is fully backed up and redundant. If the new IP telephony system fails at the firm’s Chicago headquarters, the backup system in the company’s Ann Arbor, Mich. office will transparently keep the phones running with all functionality. (If the firm’s old PBX crashed, the phone lines would go dead, resulting in lost voice communication and potentially lost revenue.)

“The field of law is very demanding of technology – it needs to be up and running 24 x 7, 365 days a year,” says Brinks’ Chief Information Officer Rod Sagarsee. “It’s all about providing exceptional service, and the new VoIP system allows attorneys to do more, stay connected and have additional ways to communicate with our clients.”

Brinks’ decision to turn to VoIP is part of a global trend. Vendors have long touted IP telephony as less expensive and easier to deploy and maintain than traditional phone systems. For years, they preached “convergence,” the concept of combining voice and data traffic onto the same network based on IP, which allows for new communication applications, such as unified messaging and conferencing on-demand.

After a period of years of skepticism by businesses, IP telephony is finally taking off because the technology has become standardized and proven to work, the network infrastructure has been deployed to support quality of service, and companies have an increasingly mobile workforce, all of which will reinforce the need for advanced phone features, analysts say.

In fact, sales of IP-based phone systems now rival traditional PBX systems, according to In-Stat, a Scottsdale, Ariz.-based analyst firm. Shipments of IP-based PBX modules are expected to grow from 9.5 million in 2005 to 28.1 million in 2009, at which point the technology will account for 91 percent of all new shipments, the study predicts.

Choosing VoIP

Last year, Sagarsee knew he needed to overhaul Brinks’ phone system. With a growing firm of more than 350 employees, the company’s 16-year-old PBX was having trouble handling an escalating demand for phone services. It was starting to break down, and the task of finding replacement parts for a legacy phone system was becoming too time-consuming. Also, having to hire outside consultants for repairs was getting too costly.

“You can only do so much patching to keep it going” Sagarsee says. Eventually you have to replace it.”

Brinks’ IT team spent eight months researching a new solution and decided on an IP telephony system because of its advanced phone features and redundancy. The company purchased an Avaya IP telephony system for its Chicago headquarters and Ann Arbor office, IP phones for every employee and new data networking equipment from Avaya and 3Com to ensure optimal voice quality.

When Brinks’ IT staff deployed the IP phone system this year, they added a twist to the traditional network architecture for IP telephony systems. Instead of a typical deployment where data and voice traffic are combined throughout the local area network (LAN), the IT team created two separate LANs—one for data and one for voice—on each floor of Brinks’ buildings. Then they integrated both voice and data networks at the core. The architecture assured Brinks of clear voice quality, while allowing the firm to still take advantage of converged voice and data services.

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Brinks invested in additional IP telephony and network equipment to make sure the network is redundant. The firm installed two IP servers at headquarters, so if one goes down, telephone services will continue to operate. As further backup, the firm installed disaster-recovery equipment in its Ann Arbor office, so that if the entire Chicago phone system goes down, the Ann Arbor office can keep its Chicago extensions running.

Having a redundant system and separating out the voice network on each floor increased costs, but it’s worth the extra expense, Sagarsee says.

“We anticipate that the return on investment [ROI] will be realized within the first year with improved efficiency, increased worker productivity, savings on local and long-distance services and minimized unanticipated downtime,” he says.

VoIP Benefits

This fall, Brinks will roll out IP telephony services in the firm’s two other offices in Arlington, Va. and Indianapolis, Ind. In the meantime, the rest of the firm is reaping the benefits of IP telephony.

The new Avaya phone system has already saved $16,000 on Brinks’ phone bill for long-distance calls and conference calls between offices, Sagarsee says.

Calls between the Ann Arbor and Chicago offices are now internal. When Ann Arbor employees need to call a Chicago-based client, the new IP telephony system automatically dials out using the corporate directory through the company’s Chicago office, making it a local call. This saves the firm on long distance bills, he says.

And because Avaya’s Communications Manager IP telephony system comes integrated with a six-party conference call
capability, the firm can hold conference calls between Chicago and Ann Arbor for free, and in the near future, employees will have the ability to set up conference calls with clients. It used to pay a service provider for the same service. When Brinks implements Avaya’s Meeting Exchange conferencing solution in its two other offices, the company will cancel its conference call service with its provider, Sagarsee says.

In addition to unified messaging and follow-me applications, Brinks’ attorneys can turn their computers into their office phones. If they’re working on the road, they simply launch phone software, called Avaya IP Softphone, connect to the corporate network through a virtual private network, and securely dial and receive calls with their office phone numbers through the office switch.

As a result, attorneys traveling abroad can use their computers to make phone calls with their office numbers, which will save more money. “There are no international charges whatsoever,” Sagarsee says.

In the office, the biggest change for employees is a new Avaya 4625 Series IP Telephone with a color screen on their desks. The screens alert callers when their coworkers are on the phone, away at trial or out of the office. Employees can use the screens to connect to the Internet and check news, weather and traffic and get restaurant listings. They can also access the company’s directory and emergency phone numbers.

Because the phones are connected to the IP network, employees can even dial their IP phones by clicking contacts on their e-mail client. The firm also outfitted its receptionists with Avaya’s IP Office SoftConsole, computer software that allows them to manage and route calls.

The new phone system also allows employees to hold video conferences via overhead projectors in conference rooms. The technology has helped unify the offices, allowing employees to put faces to people’s names. “They feel more a part of the meeting, rather than just a distant voice on a conference call,” Sagarsee says.

Along with the new services, it’s important to note that the IP phone system offers all the voice features and functionality of a traditional phone system, including voice mail and the ability to put callers on hold to take another call, he adds.

Going IP

Brinks spent one month upgrading its local and wide area networks last December. Then the IT staff implemented the IP phone system at headquarters in one weekend in January and in Ann Arbor on another weekend in March.

In IP telephony installations, IP gateways connect the LAN to the outside phone lines. Specifically, IP gateways convert voice traffic from the IP world to the traditional public switched telephone network. IP gateways and IP phones are controlled on the corporate network by IP servers, which process calls and manage phone settings and extensions.

Brinks’ system operates on Avaya’s Communication Manager software. Avaya’s EC500 Extension to Cellular allows employees to transfer calls to their cell phones.

At headquarters, the firm installed two Avaya S8710 Media Servers and two G650 Media Gateways, which are attached to Avaya Cajun Gigabit Ethernet Switches in the network’s backbone. To ensure voice quality, the IT staff installed three 3Com Switch 5500 Series Layer 3 Gigabit Switches on each floor to handle quality of service for voice traffic. The switches include support for Power over Ethernet (PoE), which powers IP phones through Ethernet ports.

In Ann Arbor, the company installed an Avaya G700 Media Gateway, designed for branch offices, and three 3Com Switch 5500 Series Ethernet Switches. For disaster recovery, the IT staff installed an Avaya S8300 Media Server to the gateway to allow the Ann Arbor office to keep the company’s phone services running if connectivity is interrupted at headquarters.
To handle the bandwidth, Ann Arbor’s phone system is connected to three bonded T1 lines.

Because of Brinks’ unique network topology, the firm has suffered only isolated, minor Quality of Service (QoS) issues. Voice quality is normally excellent and traffic load balancing typically resolves any issues, Sagarsee says. IP phone systems are easier to maintain than traditional PBX systems, he adds.

Strong Support

Sagarsee credits his coleader on the project, Brinks’ telco applications supervisor Leslie Mistina, and his entire IT team for implementing the IP telephony system, with assistance from two Avaya engineers. Sagarsee says he also couldn’t have done it without CDW’s help.

CDW senior systems engineer Bryan Cohen gave Sagarsee advice on vendors, what equipment to purchase and visited Brinks’ offices multiple times to help with the installation and to assess the company’s network to make sure it could handle voice traffic. When Brinks’ IT team deployed the IP telephony system on a weekend, they discovered that a piece of equipment was missing. They called Cohen, who immediately made arrangements for the equipment to be shipped and arrive the same day.

“Every time we encountered a major problem or had a question, Bryan was immediately there. He was on the phone with us for hours, making sure all the equipment got there,” Sagarsee says. “There is no way the implementation would have been as smooth, organized or timely without Bryan and CDW. He gave an extra effort that went well beyond the call of duty.”

Cohen says good customer service is just part of the job and credits Brinks’ IT staff for their technology expertise and their ability to implement the Voice-over-IP system mostly by themselves. “They really took the time to put in a good system. They are highly skilled IT people to begin with, but they read manuals and got additional training to support VoIP,” he says.

The Future

In addition to the firm’s plans to equip its Indianapolis and Arlington, Va. offices with IP telephony this fall, Brinks’ IT staff is busy rolling out new telephony applications. Sagarsee is making wireless IP phones available to attorneys, so when they’re in the office, but away from their desks, they can retrieve phone calls from clients over the firm’s wireless network. The company is also planning to add more applications to the IP phones which will help make billing more efficient. In the future, hourly staffers will use the phone screens as a time clock to track their work hours.

Overall, Sagarsee is thrilled with the new phone system. “We’ve always implemented leading-edge technology, from our data storage area network and Blackberry devices to a high-end document management system,” he says. “We now have a state-of-the-art phone system to match, which will further enhance our advanced communication capabilities.”

Tips on Implementing VoIP Successfully

- Do your homework. Research vendors and talk to other companies about their implementations.
- A successful implementation requires good collaboration, teamwork and preparation among IT staffs, third-party vendors and consultants.
- Assess your network to make sure it can handle voice traffic. CDW helps customers assess their networks by using tools that inject simulated voice traffic into their networks to see how they respond.
- Businesses may need to redesign their networks with new switches to ensure good voice quality. To support Voice-over-Internet-Protocol (VoIP), networks require Layer 3 switches with support for Quality of Service (QoS) and Power over Ethernet (PoE).
- Train employees to use IP phones. Leave cheat sheets on their desks to reduce support calls.