The Business Case for voice over IP

INTERNET PROTOCOL

LARGE, MEDIUM, AND SMALL ENTERPRISES HAVE ONE thing in common these days—they're all looking at the viability of voice over IP (VoIP) for their organizations.

For some, the move to IP-based voice networks is predicated by the aging of their legacy telecom systems. Others want to consolidate their voice and data networks to save costs. Still others are looking to unify their telecom networks and services across remote offices and headquarters.

Whatever the reason, companies have stopped thinking of VoIP as a future technology and are starting to realize its potential for today.

Current research data bears out the groundswell of interest in VoIP. The market for hosted VoIP services among U.S. businesses—which was estimated to be $60 million by the end of 2004—will soar to $7.6 billion by 2008, according to a report from Framingham, Mass.-based International Data Corp. titled "U.S. Hosted IP Voice Services 2004-2008." In addition, the number of business lines in service will leap from 75,000 in 2004 to 12 million in 2008, the report states.

These are staggering projections for what is considered to be a nascent market. But they are easily backed up by recent headlines showing an increased interest in—and purchase of—VoIP by high-profile companies such as Ford Motor Co., Bank of America, Boeing, and IBM.

Companies are looking to VoIP for significant cost savings that can result from merging voice and data into a single infrastructure. But VoIP is about a lot more than just cost savings. Customers are also excited about the advanced applications and feature sets they'll be able to roll out over an IP-based voice network.

While some companies are choosing to deploy and manage their own VoIP networks, many are opting to fully or partially outsource this function to carriers like the SBC family of companies. SBC companies offer both premises-based services, such as SBC PremierSERV℠ IP Telephony Advantage, and fully hosted services, such as SBC PremierSERV Hosted IP Communication Service (HIPCS).

With a premises-based offering, the VoIP equipment is owned by the customer and resides on their premises. All design, installation, and ongoing monitoring and management of the core network are provided by SBC companies. With a fully hosted service, all IP telephony server equipment is outsourced to the carrier's central office.

"There is a growing interest these days in VoIP services—more so than even 18 months ago," says Robin Gareiss, executive vice president at New York-based Nemertes Research.

Meeting different needs

Gareiss says she sees two types of VoIP service customers—those that have tried to go it alone and are hitting roadblocks, and those that are just now considering the benefits of VoIP services.

For the enterprise that has tried to build a VoIP network itself, the struggles can be mighty. "The network might not perform as well as they thought it would, and they're finding they don't have the time, resources, tools, and so on to figure it all out," Gareiss says.

While these companies may have understood the basic voice infrastructure well, adding appli-

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cations that have performance requirements might have thrown off their plans. "They find that it quickly gets complicated to manage," Gareiss says. Their budgets continue to grow to support application management and monitoring. What might have been affordable at the beginning quickly spirals into an expensive proposition, she adds.

Enterprises just starting out have to consider if they have the internal resources to deal with voice as well as data traffic. "They have to figure out which equipment vendor to use, what management tools to put in place, how to secure the voice traffic, and how to train their users," Gareiss says. "If they're going to do VoIP in-house, they've got to understand how all this stuff works—how does the call server or IP PBX work? How will it integrate with legacy systems? How are you going to connect headquarters to your remote offices? How are you going to manage the VoIP services at the remote offices?"

Once IT managers get the basics down, "the end-user community will start demanding more," she says. Among the add-ons that users want to see: presence tools, Web conferencing, and virtual call centers. "All of a sudden the IT staff has to become well-versed in those tools and servers—they're handling upgrades, management, and maintenance," Gareiss adds.

In both situations, IT staffs quickly realize they are too strapped on both financial and personnel fronts to deal with this complexity. "There is an immediate strain," says Gareiss.

With a hosted VoIP service, enterprises can focus on their core competencies and not be sidetracked with managing an end-to-end voice network. They can avoid the capital expenditure that goes into building a voice network from scratch. They also see time and cost savings from not having to deal with maintenance contracts or systems management. Finally, they don't have to deal with upgrades to hardware and software, because the service provider takes care of that for them.

The many benefits of VoIP

The primary motives for companies to move to VoIP in the short term are often cost reductions enabled by on-net calling and consolidation of access facilities, according to IDC.

Whether companies choose a managed premises-based solution or a fully hosted service, the benefits of bringing together voice and data traffic are similar.

Companies can save significant money in their long-distance usage, since they can connect remote sites and headquarters to support on-net calling. They can also create on-the-fly networks with partners, customers, and suppliers to save on long-distance charges.

"The elimination of PSTN [public switched telephone network] costs for interfacility calls is compelling," says IDC. Companies connect IP telephony systems via the Ethernet network to bypass the PSTN.

But long-distance costs are not the only savings opportunity, according to experts. Other savings come from reducing the exorbitant costs associated with moves, adds, and changes (MACs), as well as avoiding the high cost of separate voice and data technical teams. Eliminating the headache of trying to manage dozens of service contracts for remote offices and mobile workers is another benefit.

With a converged network, IT managers can cross-train their staffs to handle both voice and data over IP, alleviating the need for full-time, high-priced voice experts.

VoIP also offers users and IT managers alike a host of productivity-enhancing features. Find-me, follow-me features allow users to direct calls to other phones when they are out of the office. Auto-attendant lets companies create a virtual office without the need for physical office space and a live receptionist. Web portals let users take advantage of directories, call lists, and click-to-call contact databases.

Users also enjoy unified messaging (UM), which lets them

intermingle voice mail, e-mail, and faxes in a single e-mailbox. They can access their e-mail and faxes via voice mail or play voice mail messages back via their e-mail applications. This is an important feature for users on the go who might not have an Internet connection, but need access to their messages.

For IT managers, Web-based software facilitates simple MACs as well as new-user provisioning. There is no need for expensive visits from telecom experts to install lines or move users around. IDC estimates that companies today pay as much as $100 to $400 per call for MAC requests, and with the average employee changing desks at least once a year, that can be costly.

There are also benefits gained in mobility. Road warriors can use softphones to access VoIP services. (Softphones are software-based phones installed in desktop or laptop PCs, which require a headset and microphone to operate.) This saves companies the high cost of using dial-up at hotels and airports. It also allows employees to access and use employee directories, their contact databases, and other important resources while traveling—saving them time and boosting productivity.

One of the biggest VoIP benefits for organizations is that it creates a unified presence for the outside world. With four-digit dialing, employees in headquarters and remote offices can seamlessly connect. Also, because employees are on a single network, customers can easily reach them no matter where they are located, creating a better overall customer experience.

Wireless devices will also channel VoIP services. IDC says: "Enabling seamless connectivity through a multitude of devices will remain the Holy Grail of convergence. This vision will be achieved through wireless devices that can adapt to wireline applications and be driven by the disparate needs of the end user."

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Eventually, companies will deploy videoconferencing services over IP as well, but IDC predicts that significant deployments in this area are at least two years away.

Current Analysis, a research firm in Sterling, Virginia, says in a May 2005 report that fully hosted VoIP services from the SBC family of companies "yield operational savings and streamlined efficiency."

The firm adds, "SBC's VoIP solutions scale well into the thousands of lines and they scale down to as few as 10 lines, offering a quality VoIP solution that is a good fit for most sizable businesses."

Flexibility reigns supreme

Greg Langham, IT manager at United-Bilt Homes, Inc. in Springdale, Arkansas, says the best value he's received from VoIP is the flexibility to try new things. A regional home builder, United-Bilt constructs 350 homes a year in Arkansas, Louisiana, Missouri, Oklahoma, and Texas. The company has 16 sales locations and two corporate offices, as well as a sister company in the banking industry (which is also VoIP-enabled).

"VoIP has allowed us to be unified from a systems standpoint," says Langham, who contracts with the SBC family of companies to provide hardware, software, implementation, and training for the VoIP network. "It allows us to connect two disparate phone systems and look like one company."

Langham says managing the remote sites previously had been a headache. "If someone moved offices or needed voice mail at a remote location—basically any kind of remote administration—it was difficult," he says, because that required someone to come in from an outside telephone service. "There was no consistency, and the billing was a pain."

Now everything—including moves, adds, and changes—is

under one roof. "We've absorbed the administration with the current IT staff of two network administrators, one help desk person, and a programmer," he says.

He also enjoys the ease of four-digit dialing among sites. "If I call down to our people in Shreveport, [La.,] it's no different than dialing in-house. I can even page people at different locations."

With the VoIP network, United-Bilt was able to consolidate operators—having a centralized operator in Springdale, Arkansas, that serves Shreveport and the other locations. Users can easily move between sites—a requirement in the construction business—by simply logging into the phone at that locale. "You have extension mobility with your speed dials, and your extension, and it functions just like your desk phone. You can set up camp in any location just like you plug in your laptop," Langham says.

Another benefit United-Bilt has seen is the ability to easily set up and tear down remote sites. "Now that we have the infrastructure in place, adding a branch to the phone system is much simpler than with our legacy system," he says.

This has enabled the company to be more flexible. "If we want to try a location somewhere, it's not as big a commitment as with a traditional phone system. If we need someone to move to that location, they can take their entire office with them."

Options abound for outsourced voice over IP networks

The SBC family of companies offers enterprises the choice of a premises-based or fully-hosted voice over IP network service. Big-name organizations are coming down on both sides of the fence. For instance, Ford Motor Co. made a big splash by signing on with the SBC PremierSERV℠ IP Telephony Advantage premises-based offering. At the same time, the University of Notre Dame chose the fully hosted SBC PremierSERV Hosted IP Communication Service (HIPCS).

You buy, we manage

Ford contracted with SBC companies to design, build, and manage a converged voice and data network in addition to a voice over IP phone system for 50,000 workers in 110 offices across southeast Michigan. The system will be deployed in Ford's Dearborn, Michigan-based data center and operated by SBC staff. The voice over IP equipment will be owned by Ford.

The automaker, according to an IDC report titled "Ford Shifts to VoIP," considered the trade-off between a high upfront capital investment in voice over IP hardware and software with a relatively low recurring fee of management and monitoring against a relatively low capital investment with a higher per-user fee for the services plus management and monitoring. Ford "had minimal internal staff resources available to take on the new phone system," according to the report.

The main goal of the voice over IP deployment, which will employ the Cisco® CallManager and AVVID architecture, is to reduce costs, including those associated with moves, adds, and changes and interfacility call charges.

Ford hopes to capitalize on its ongoing relationship with the SBC family of companies, as well as on its GigaMAN® Ethernet pipe to connect the remote sites, IDC says.

Fully hosted service

For the University of Notre Dame, the goal was to

have all the benefits of voice over IP without detracting from IT's core competency.

"It is my belief that we've got to embrace voice over IP and benefit from its inherently rich set of features, but we are an educational institution, not a phone company," says Steve Ellis, Notre Dame's director of Integrated Communications Services.

The South Bend, Indiana-based university signed on with the SBC family of companies for full hosting via the company's SBC PremierSERV HIPCS offering. Notre Dame, already a client of Centrex service by SBC companies, agreed to a five-year, multimillion-dollar contract that will be one of the largest fully-hosted voice over IP projects in the country.

When it is ramped up, HIPCS will serve more than 7,000 users on the university's main campus and in remote offices across the country. Users will be able to connect via any Internet connection, including classrooms, faculty offices, and select remote locations. The goal, according to Notre Dame officials, is to enable the faculty and staff to be accessible from any location campuswide.

Today, Notre Dame has rolled out HIPCS to 260 users—all in the IT department—to test-drive the service, according to Ellis. However, he's looking forward to a wider rollout in the near future.

But he's also taking his time. Ellis says HIPCS enables moving users to the new system gradually. Also, his legacy system, while becoming dated, is not broken yet. "The time of inevitability is approaching, so it's a good thing to understand what we're going to be using before we're forced to use it on a wide scale," he says. "Working with voice over IP now is allowing us to build a knowledge base that will ramp up with us when we aggressively start rolling it out."

Ellis already likes what he sees. "We're excited to have a single infrastructure—we won't have to maintain the copper and fiber networks at the same time," he says. He is also looking forward to moving phones around more easily and to the benefits of a unified messaging and automated call distributor.

To prepare for the ramp-up, Ellis and his team are doing upgrades to cabling and power sources. "We're going power over Ethernet in the closet and category five cabling across the network. We have to make sure that the phones are on a sufficiently appropriate network link and have the right power supply."

He's also constructing separate virtual LANs to run the voice traffic. "Our backbone is not bandwidth-constrained, so that's not going to be an issue," he says. "But we want that traffic to be safe and insulated from the day-to-day challenges of publicly exposed networks."

In the future, Notre Dame also hopes to use softphones and voice over wireless networks. But today, Ellis is highly focused on the user experience for tethered IP phones. "You have to map your user expectations from the old system to what they'll be getting with the new phone. You have to let them know up-front."

Users will receive find-me, follow-me capability and a customization portal so they can manage their own call features. And IT teams can use the office administrator portal to simplify provisioning moves, adds, and changes.

Ellis says having SBC companies work through all these issues is critical: "It's good to know they're monitoring [the network] and will fix things fast."

While Ellis is considering a full move two to three years out, he says the fully hosted service allows him to bring interested users onto the voice over IP network and still support others via Centrex.

Ellis says having a partner like the SBC family of companies with whom he can work through all these issues is critical: "It's good to know they're monitoring [the network] and will fix things fast."