

**WELCOME TO THE  
NEW, CONVERGED WORLD  
OF VOICE AND DATA—VoIP.  
HERE'S WHAT YOU NEED TO  
KNOW TO ROLL IT OUT RIGHT.**

# VoIP ROLLING OUT

By Alan R. Frank

**WHERE BEFORE, EVERY BUSINESS HAD TWO NETWORKS**—the telephone system and the data network—now they are merging. But Voice over IP (VoIP) is not merely the convergence of two different data types on the network wire. For previously data-oriented networking VARs and integrators, it's an opportunity to enter an entirely new market—telephony. And the bonus is that you can work with prospects you already know, and who know you: your existing customer base.

Voice/data convergence is well under way. "Essentially the entire market is making the switch to IP telephony or Voice over IP, so it's no longer exploratory technology," observes Mauro Lollo, co-founder and chief technology officer of the Toronto-based integration firm Unis Lumin Inc. In his estimation, "2007—and 2008 in particular—are watershed years; we're getting elevated adoption of VoIP and unified communication applications."

According to Lisa Pierce, a vice president and principal analyst at Forrester Research Inc., "In 2007, 18 percent of SMBs had deployed IP PBXs." (Forrester classifies small to midsize businesses as those having between six and 999 employees.) That same year, 9 percent of SMBs deployed hosted VoIP (in which the IP PBX is not on the customer's site, but hosted elsewhere—usually by a telco or Internet telephony service provider, or ITSP).

Add those together and more than one-quarter of SMBs deployed some form of VoIP last year. And about one-third of those that deployed VoIP opted for the hosted variety. "Considering that hosted VoIP solutions have not been around for long," comments Pierce, "this number is pretty encouraging."



## VoIP CHALLENGES

As a real-time application, voice makes some stringent demands on the network. “VoIP has its complexities,” cautions Unis Lumin’s Lollo. “It has to be treated with kid gloves. The care and feeding of the system—but also the planning and implementation—are exceptionally important to ultimate success.”

Sam Wong, president and principal architect at the San Mateo, Calif.-based integration firm Network Architects Inc., recounts: “We’ve run into situations where some customers have tried to deploy VoIP with another company that really wasn’t familiar with [it]. And a common scenario is that call quality deteriorates and nobody knows why.”

According to Pierce, “You’ll need to think about how the system will connect to the outside world.” She notes that the majority of VoIP installations today are not connecting to the carrier using a session initiation protocol (SIP) trunk—which is the leading way to carry packetized voice in the larger world. Most are connecting using T1 primary rate interface (PRI) or plain old telephone service (POTS) analog lines. Pierce attributes this to the fact that “not every provider offers SIP trunking,” and those that do require that customer premises equipment (CPE) meet the carrier’s network specifications. If the carrier hasn’t tested the equipment you’re planning to install, it isn’t safe to assume that it’ll just work, because it’s SIP-compliant.

Chris Nantes, global SMB portfolio marketing leader for Toronto-based Nortel, agrees that there can be interoperability issues with SIP trunking: “Even different SIP application servers can sometimes have slightly different interpretations of the SIP standards. As such, industry leaders like Nortel are working closely with the service provider and SIP application server vendors—including our own solutions, of course—to ensure optimal interoperability with various testing and verification methodologies.”

Ben Brauer, senior product manager for Response Point, Microsoft Corp.’s small business phone system offering created by a team at Microsoft Research, says that the “flavor” of SIP trunking that Response Point will support is SIP-connect. SIPconnect, promoted by the SIP Forum, is intended to minimize the amount of CPE needed to interface with a carrier’s SIP trunk. Brauer says SIPconnect is being installed by car-



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**SAM WONG, PRESIDENT** (SHOWN ABOVE)  
 NETWORK ARCHITECTS INC.

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riers now and should be available for use by the second half of this year. Service Pack 1 for Response Point, announced in March by the Redmond, Wash.-based company, will add support for SIPconnect. A summer release is expected.

When planning a VoIP rollout for a customer, VARs and integrators will need to find out what carriers serve their customer’s locations, which of those carriers offer SIP trunking, and what CPE is on those carriers’ approved lists. “I would say it’s part of your due diligence,” says Forrester’s Pierce. Also, investigate whether the carrier offers service-level agreements on uptime and quality of service (QoS).

## 8 STEPS TO SUCCESS

Some VoIP deployments have gone off with few hitches, while others have been train wrecks. Why the seemingly random results? Are some company cultures (and individual users) just change-averse? Perhaps so, but there’s more to it than that. Certainly, technical competence in IP telephony is a basic requirement. Beyond that, however, much of the success—or lack thereof—can be attributed to taking the time to really understand the customer’s business (which is key to finding the right solution for a customer), properly setting expectations, and conducting thorough training.

### 1. Understand the Business

“Don’t lead with technology,” counsels Sally Stanton, director, market management, for worldwide channels marketing at Cisco Sys-

tems Inc., headquartered in San Jose, Calif., “You’ve got to sit down with that customer and understand their business needs. What do they want to accomplish, and how can the technology address that?”

It’s a matter of establishing where the customer wants to be in the next 12, 24, and 36 months, Stanton says. “You need to make sure that not only does that initial implementation go well, but that the integration partner has presented the right platform, so that, as the business’s needs change and grow, the [communications solution] can grow and evolve with them.”

“Establish the scope,” says Pierce. “Are we talking about just a single location, or a number of locations? Are all of those locations, just a few, or just one [getting the VoIP installation]?”

## 2. Establish the Goals

Why is the business considering a move to VoIP? Jim Cavanagh, knowledge transfer agent at Atlanta-based The Consultant Registry, says it’s one of the first things he asks. “And they often give me that deer-in-the-headlights look that says: ‘Are you stupid? This is the future.’” They

may have heard the buzz about tremendous cost savings,” Cavanagh says. However, he adds, “A lot of them find out that VoIP may cost a certain percentage more than doing it the old way.” Also, he says, “The really compelling reason to make the shift to VoIP is manufacturer discontinuation of their equipment.”

Therefore, advises Cavanagh: “Make absolutely certain that the customer is doing this for the right reason. The customer will respect you and you’ll have a better relationship, long-term, if you’re taking their side.”

Ted Wallingford, founder and executive consultant for Elyria, Ohio-based IT consulting firm Best Technology Strategy, says that relying too heavily upon carrier savings as a means of justifying the cost of the project is a prime pitfall. “If your target savings delta isn’t met, then you end up blowing your project budget or you don’t get the ROI you were expecting by engaging in the project,” he says. “I’ve seen it happen over and over.”

Wong of Network Architects calls selling VoIP solely on the basis of saving money on long-distance costs “a five-year-old model.” The message

his company tries to convey to customers is: “The reason for doing VoIP is the productivity benefits you get when you integrate the telephone and a computer together, and what that can do.”

## 3. Educate the Customer

Educating the customer and properly setting expectations are closely intertwined. Joe Scotto, global director for small business solutions marketing at Avaya, headquartered in Basking Ridge, N.J., observes: “There are going to be fewer pitfalls with larger businesses,” as the larger firms usually have in-house IT staff who can speak the technical lingo. But for smaller businesses, “there’s less that they understand, so the onus is on the VAR to educate and really make sure that what they are saying is setting the right expectations—and making sure that the customer really understands what it means.”

Scotto says that a situation in which education is needed “could be something like softphone usage. [A softphone is software used for making calls over the Internet using a computer.] Someone who’s familiar with softphones has an expectation of the quality, because they know that the

## IP TELEPHONY SOLUTIONS FOR SMBs

**A number of vendors offer portions of an IP telephony solution, while others provide the complete solution. Here, we highlight some product solution sets from among those that offer a complete solution—IP PBX and IP phones.**



### Allworx Corp.

Allworx phone systems (image 1) are designed for up to 100 users per site. Products include the Allworx 6x, 10x, and 24x systems (analog and VoIP), and Allworx 9200 series and 9100 series phones with traditional key or PBX system functionality. Software options provide call assistant, call queuing, conference bridging, and VPN. Allworx systems can also function as email and Web servers, SPI firewalls, and routers.



### Avaya Inc.

Avaya’s flagship IP telephone system for SMBs is Avaya IP Office, a scalable IP PBX platform that serves businesses with up to 270 seats (depending on exact configuration). It can be paired with a number of IP phones, such as the Avaya 5610 (image 2). For smaller offices, Avaya offers its Quick Edition solution, which handles up to 20 IP phones. Quick Edition features a distributed architecture in which the IP PBX server function is incorporated into each phone.

call is going over the Internet. A smaller business may not understand that; they may not have experienced that before.”

## 4. Set Expectations

Early in the sales process you'll need to set expectations—a key to ultimate customer satisfaction. Many people have read about how much money VoIP can save, for example, particularly in toll-bypass. It may be possible to save a lot of money by routing off-site calls across the Internet, but the Internet has no QoS—it's best-effort delivery, which can make voice call quality hit or miss.

## 5. Perform Needs Analysis

You'll need to take inventory of the customer's existing data network(s). Does it make a good host for a converged voice/data network? In most cases, upgrades will be needed. Echoing the views of Cisco's Stanton on a “platform” approach, Eren Hussein, senior manager for Cisco SMB solutions marketing, says, “When we look at SMBs today, there's a mishmash of lots of different networks. In a lot of cases, when they're

implementing a Cisco unified communications or VoIP solution, they're consolidating a lot of that technology into one fabric or network.”

Starting at the physical layer, are there Cat 5e/Cat 6 cabling drops in every place you'll need them? Mark Massingham, senior solutions manager for Avaya's Small Business Division, notes: “When VARs go into a business, in some cases they've forgotten to walk into the conference room or the lunchroom or break room, looking for areas where telephone extensions may need to be [besides the usual cubicles and offices]. Do they have Cat 5 cable into those particular areas, or are they going to have to put some new wiring in?”

An important decision, in Pierce's estimation, is whether to use an on-premise IP PBX or hosted VoIP. Hosted VoIP not only lowers the investment for the customer, but also eliminates compatibility issues between the IP PBX and the carrier, as the carrier is hosting that piece of the puzzle. (You still need to make sure that the individual IP phones you're planning to use are on the carrier's approved list.)

Unis Lumin's Lollo says that “for a lot of very

## GUIDE TO A SUCCESSFUL VoIP IMPLEMENTATION

- **UNDERSTAND YOUR CUSTOMER'S BUSINESS.**
- **ESTABLISH GOALS.** What does the customer want to achieve?
- **EDUCATE THE CUSTOMER,** especially about things like quality of service.
- **SET EXPECTATIONS.** The Internet may be a free telephony backbone, but the quality is hit or miss.
- **PERFORM NEEDS ANALYSIS.** What upgrades does the customer's network infrastructure need?
- **PLAN** for security, carrier connections, training, and hosted vs. on-premises.
- **DESIGN THE SYSTEM** and flesh out the details of your plan.
- **IMPLEMENT,** including training, with follow-on refreshers as needed.



### Cisco Systems Inc.

Cisco's Unified Communications 500 Series is the heart of the company's VoIP solutions for SMBs, supporting up to 50 users. Shown here in image 3 is the Cisco Unified Communications 500 IP PBX (bottom unit in equipment stack), accompanied by the Catalyst Express 520 PoE Ethernet switch (middle of stack), the 520 Wireless LAN Controller (top), IP phone, and wireless access point.

### Linksys

Linksys (a Cisco Systems business unit) offers the Linksys One hosted-VoIP solution as well as an IP PBX-based (CPE) solution. Shown in images 4 and 5 are the SPA9000 IP PBX (which handles up to 16 IP phones) and SPA942 IP phone, a four-line IP phone with integral two-port switch that allows the phone and a PC to share a single office Ethernet drop. The phone is powered over Ethernet, or can be used with an optional local power supply.

## FOR MORE INFORMATION

- **ALLWORX:** VoIP whitepaper. [www.ChannelProOnline.com/jun/voip.html](http://www.ChannelProOnline.com/jun/voip.html)
- **REALTIME PUBLISHERS—THE DIGITAL LIBRARY FOR DIGITAL PROFESSIONALS:** *The Definitive Guide to Successful Deployment of VoIP and IP Telephony*, a 238-page e-book offered by Prognosis, a developer of VoIP monitoring tools, that has an extensive treatment of VoIP implementation considerations. Registration required. [www.ChannelProOnline.com/jun/realtime.html](http://www.ChannelProOnline.com/jun/realtime.html)

small organizations, a simple hosted VoIP solution might be an option.” But he also notes that “hosted VoIP solutions don’t necessarily deliver all of the potential features that you could get with an in-house IP PBX.” Lollo is referring to not just the basic voice or telephony features, but the ability to integrate with more applications within the environment. “If, for example, an SMB company has some existing in-house applications that you want to tie into the VoIP system, you’re somewhat limited with a simple hosted solution.”

## 6. Planning

IP phones need power. Most can be powered by plugging into an electrical outlet, but many support Power over Ethernet (PoE), in which the phones are remotely powered over the network cable from PoE-capable network switches in the wiring closet. PoE makes for a neater installation at the user’s desk, but you need to make sure that those switches are PoE-capable.

Security needs to be a big part of the planning and design process as well. “VoIP and unified communications, although extremely compelling

from a business benefits perspective, create different security challenges than traditional digital systems,” says Nortel’s Nantes, who also advises that VARs and integrators “ensure the products they’re entrusting to their customers have the security considerations they need, which typically [requires] a multilayered perspective, including not only telephony but also platform, access management, and interface levels.”

Lollo says that VoIP presents new security challenges. “You’ve now converged your infrastructure, and if [unauthorized] people were able to access data before, they’re now able to also access voice, in the form of data,” he says. “The manufacturer has to build certain capabilities into the equipment to ensure for security, and the partner has to implement it accordingly into the environment.”

## 7. Design

In this phase, the hardware, software, and carrier connections are specified and the implementation laid out. Will it be a phased rollout, site by site? This is also when security measures and equipment are detailed.

## 8. Implementation

Training plays a key role in the success of the implementation. The more training you can do in advance of the physical rollout, the better. As Forrester’s Pierce says, “Training can make all the difference on user acceptance. And user acceptance can make all the difference on whether the project is accepted or not.”

## FINALLY, SUCCESS

The payoff! If you’ve got technical staff properly trained on VoIP, you’ve spent enough time really engaging with your customer, planned in depth, and followed through on the steps outlined here, how can you miss? Well, a VoIP rollout can be an iffy proposition. The key is to take as many steps as possible to tip the odds in your—and your customer’s—favor.

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### Microsoft Corp.

A key feature of Microsoft’s Response Point small business (up to 50 seats) phone solution is voice-activated control, as well as MS Outlook address book integration. Aastra Technologies Ltd., D-Link Corp., and Quanta Computer (under the Syspine brand) are OEM partners that offer telephone systems based on Response Point software. D-Link’s VoiceCenter IP PBX and IP phone are shown in image 6. Aastra plans to debut its offering this summer.



### Nortel

Nortel’s Business Communications Manager series is Nortel’s IP PBX offering for SMBs. The Nortel IP Phone 1200 series (IP Phone 1230, image 7) is paired with the BCM series to form a complete SMB IP telephony solution. The BCM50 (image 8) is designed for a target range of up to 20 users, serves up to 32 IP phones, and includes an integral DSL interface.



### ShoreTel Inc.

ShoreTel phone systems use a distributed software architecture to eliminate single points of failure. Components of the system include ShorePhone IP phones (ShorePhone IP 230, image 9), ShoreGear voice switches (ShoreGear-60, image 10), and ShoreWare software supporting voicemail, automated attendant, and management functions. The ShoreGear-60 supports up to 20 IP phones and eight analog trunks.

