

# Third-Party VOIP Management on the Rise

*What's driving the trend toward managed services, and what are the keys to success?*

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## **Executive Summary**

*Voice Over IP (VOIP) has in many ways revolutionized the way people communicate. The technology itself doesn't get the credit—it's how many companies have responded to their VOIP projects, overall. They have used the projects to streamline their wide-area networks, standardize their voice infrastructures and calling features, unify their voice-messaging platforms, and implement collaborative applications that integrate with their IP-telephony systems. It's a movement, more than anything, whereby VOIP is the first application in a broader strategy that unifies voice, data and video communications.*

*But with these advancements comes unprecedented network complexity and lack of internal expertise on how to implement, troubleshoot and optimize these networks. During a time when IT and network staffs are lean, IT executives are challenged to bring their teams up to speed to manage these networks—starting with IP telephony alone. As such, a growing number of IT decision-makers are considering third parties, or Managed Service Providers (MSPs), to take over the monitoring and management of all or a portion of their converged networks—connecting a growing number of remote locations. This issue paper will explore the overall VOIP market and the latest trends and best practices for MSPs and their customers.*

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## **The Issue**

VOIP migration opens the door to numerous additional applications and a converged voice, data, video environment across multiple locations, time zones and geographies. As this trend continues, effective management of VOIP becomes more challenging because there are so many moving parts. Think of all the new factors that affect the once closed-network TDM voice environment: router tables, quality-of-service parameters, application contention for bandwidth, firewalls, encryption... The list goes on. Even the IP-telephony equipment itself is new to traditional telephony experts. At issue: How are organizations managing VOIP, and what role do managed service providers play?

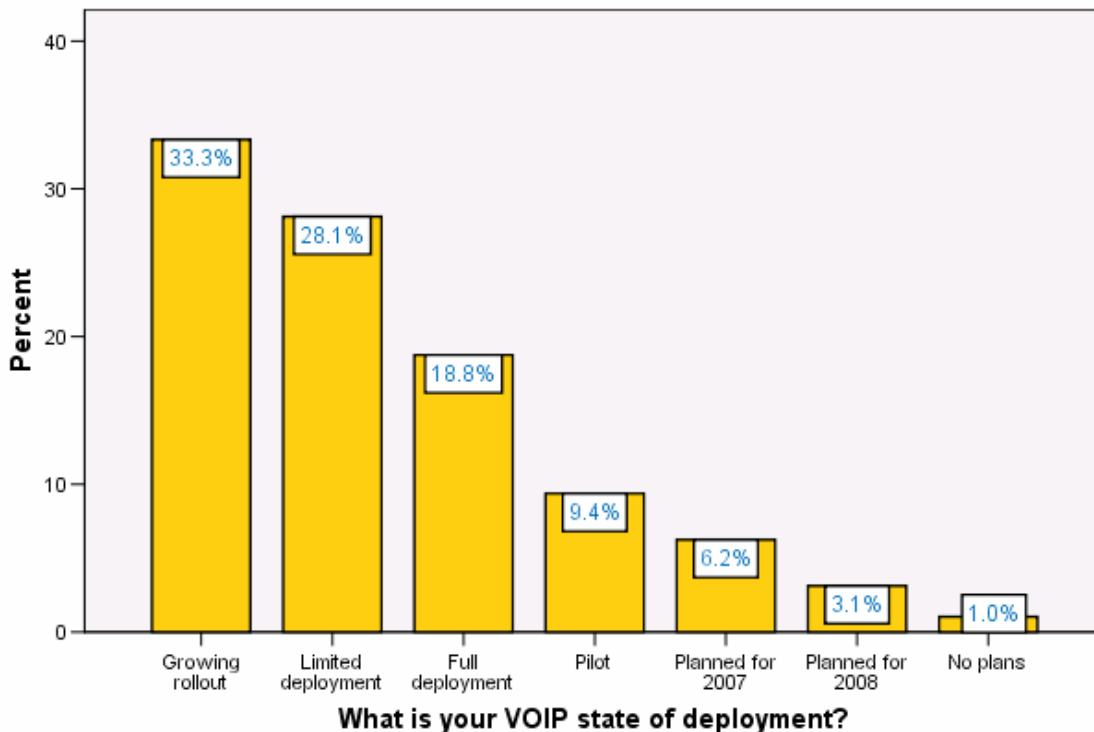
In Nemertes' *Building A Successful Virtual Workplace* benchmark, we conducted detailed interviews with 120 IT executives regarding their branch locations, IP telephony, collaboration, and mobility, analyzing trends and best practices. The data points presented here come from that benchmark.

### VOIP/Convergence Overview

Nemertes has been tracking VOIP deployments for the past four years with both quantitative and qualitative data. Year after year, a growing number of organizations move toward VOIP and away from TDM technology.

Overall, only 1% of the benchmark participants have no plans for VOIP. That's not to say that everyone is using VOIP all the time and in all locations. But what it does mean is that nearly all organizations are doing *something* with the technology—running a pilot, evaluating vendors for a future rollout, or totally using VOIP. We also found that about 20% of organizations are using more than one IP telephony vendor, compared to 10% last year.

#### VOIP State of Deployment



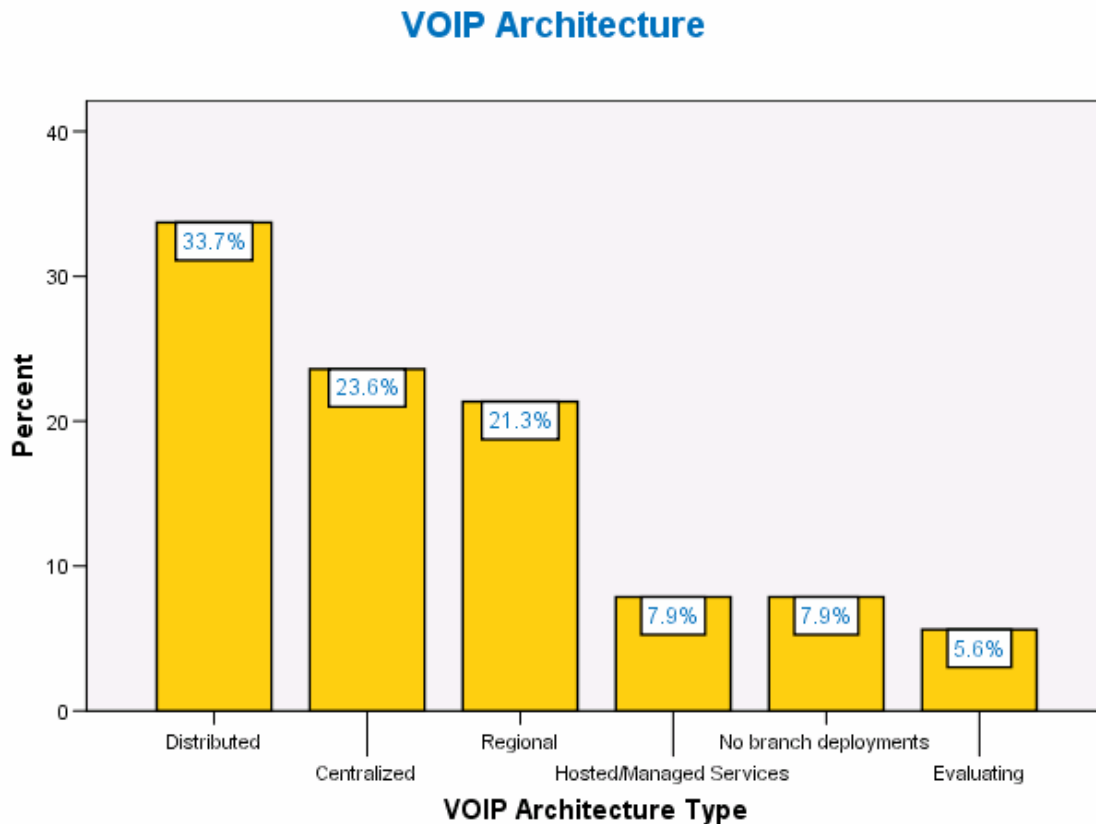
**Figure 1: VOIP State of Deployment**

One-third of the benchmark participants are engaged in a growing rollout of voice over IP. A growing rollout means the organization has decided to move entirely to VOIP, and it's in the process of installing it. That process could be quick if it's a midsize company with a small number of locations, or it could take

years if it's a global multinational trying to coordinate telecom contracts, for example.

Other companies—about 28%, to be exact—have no intentions for now to implement voice over IP throughout the organization. But they have found reasons to implement VOIP in a tactical manner—only at new locations or certain types of sites. We call those rollouts “limited deployments.”

Nearly 20% of organizations have VOIP fully deployed. Interestingly, 59% of them started their deployments in recent years--2004 (11.7%) or 2005 (47%). About 12% started and completed their deployment in 2006. Roughly one in five organizations (18.7%) are conducting pilots of VOIP or planning to use the technology within two years. These pilots, of course, can last for years in some cases. (Please see Figure 1: VOIP State of Deployment, Page 2).



**Figure 2: VOIP Architecture**

### **The Master Plan: Architecture Decisions**

One of the big changes with a VOIP infrastructure, as opposed to TDM, is that communications becomes more networked. In the TDM world, it's common to see individual key systems and PBXs at different locations that operate in isolation. With VOIP, companies want to remove boundaries between locations. So regardless of where someone is located, he or she can use the same features to contact another individual, whether he or she is down the hall or across the globe.

VOIP adopters are using a few architectures to accomplish this: distributed, centralized, regional and hosted/managed. We asked research participants how they were bringing or planning to bring VOIP to their remote locations to create a consistent communications infrastructure with common features, reliability and predictable performance across all sites. (Please see Figure 2: VOIP Architecture, Page 3).

Most commonly, they distribute IP PBXs to various sites and network them together. That distributed architecture, in about 33.7% of organizations, places an IP PBX at all or most locations. Similarly, 21.3% of organizations adopt a regional approach, whereby they break their geographic locations into different regions, and implement any number of IP PBXs in key sites within each region, with small branches connecting directly to them. The PBXs in each region then interconnect. Overall, that means 55% of organizations have some level of distribution to their IP PBXs, making management somewhat challenging.

In fact, management issues and having hands-on control of the IP PBX is a big reason 23.6% of companies prefer a centralized architecture. Going along with a consolidated data-center where they centralize all or most applications, they install a huge IP PBX in a central location with a back-up IP PBX at a secondary site.

Nearly 8% of companies are using hosted services for their branch locations. This figure has more than doubled in the past year, and all indicators suggest it will continue to increase. For example, 23% of organizations say they're evaluating such services, and another 2% already are planning to use them.

### **VOIP and the Virtual Workplace**

The popularity of distributed VOIP architectures is the result of a growing virtual workplace. *Virtual workers* are located remotely from their supervisors or workgroup(s) full or part time. They can be "road warriors," telecommuters, or simply mobile workers within a corporate campus. A *virtual workplace* is the environment that supports these workers. Eighty-three percent of organizations say they operate a virtual workplace, up from 57% in 2005.

This environment requires a well-managed communications infrastructure that is robust enough to provide remote workers' predictable performance when they access data or applications, or when they communicate with one another using voice, video or other real-time applications. One of the focal applications in this virtual environment is voice. To bolster employee productivity, a voice-communications infrastructure that has consistent features, handsets and monitoring across all locations is a must.

But operating a high-performance network with consistent voice performance and features is a huge challenge, particularly when considering how many locations are involved and how much that's changing.

On average, the number of branch offices will grow by 11% in 2007, up from 8.9% between 2005 and 2006. Overall, 62% of benchmark participants say they are increasing the number of branch-office locations, while only 13% are decreasing the number of sites. About one-fourth of the participants are holding steady. (Please see Figure 3: Change in Number of Branch Offices," page 5). Additionally, about 90% of employees work away from headquarters.

### Changes in Number of Branch Offices

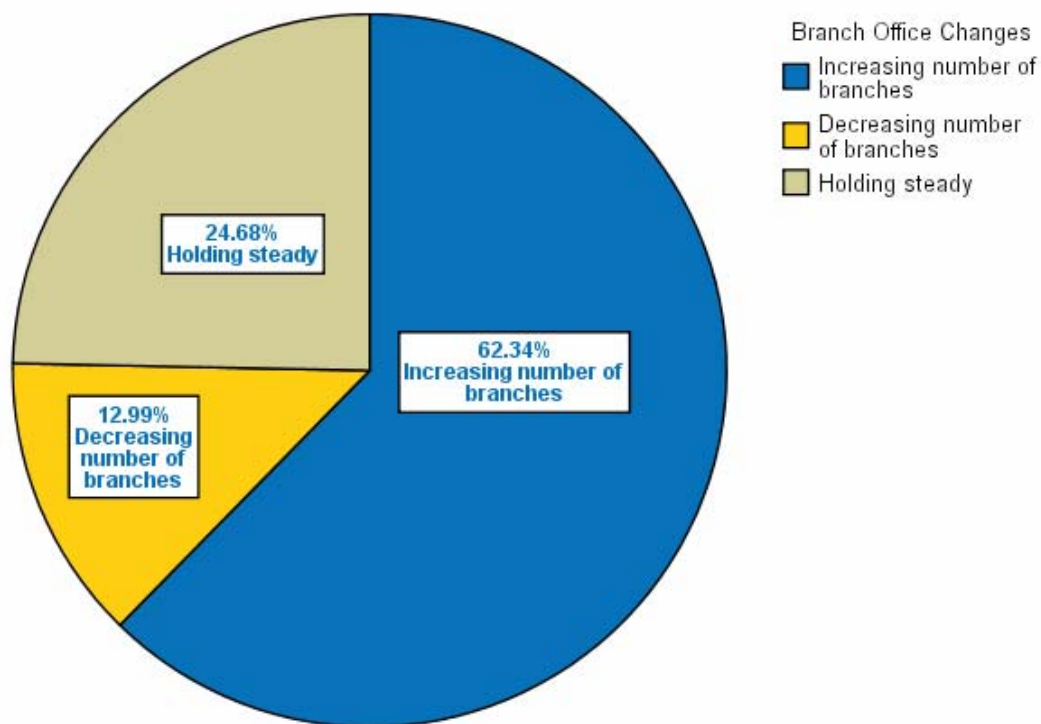


Figure 3: Change in Number of Branch Offices

Collaborative technologies, including audio conferencing, video conferencing, Web conferencing, instant messaging, presence, wikis, whiteboards and shared workspaces, have bolstered the comfort level with effectively managing virtual workers. Managers are accepting of employees who work in a branch or otherwise away from their peer group—*providing the appropriate productivity tools are in place*. Naturally, this has placed another layer of business responsibility on the IT staff.

Considering IT budgets will increase by only 4% on average in 2007, most IT executives are concerned they will not have the required headcount to effectively manage a growing number of remote workers, branch offices, and applications. Consequently, they are focusing heavily on offloading some of the day-to-day burdens to third parties. We refer to those companies as *Managed Service Providers (MSPs)*, and they include carriers, vendors, systems integrators, value-added resellers and traditional outsourcers.

#### **Business Drivers: Offloading to MSPs**

The most often-referenced business driver underscoring the movement toward VOIP is “futureproofing” the network. IT executives view the strategic move toward VOIP as the first step in preparing their networks for the future of convergence and multi-application IP infrastructure serving numerous locations.

Other business drivers include improving employee productivity, streamlining communications features and reducing costs.

Those are the high-level drivers for the technology itself. But the desire to prepare networks for the future is making it much easier to justify offloading VOIP management to MSPs. Here's what we see at many large organizations:

Their TDM PBXs, which generally include dozens of brands, are reaching the end of life, and IT executives do not want to reinvest in old TDM technology. So if they haven't started their VOIP migration yet, they're scrambling to develop a strategy and set of standards for how to do so.

As they run their cost analysis, they find the capital investment for IP telephony is equal to or greater than TDM, and operational startup costs are higher initially. Ongoing operational costs are lower—except when it comes time to troubleshoot an outage. It takes *one to three times longer* to isolate an IP telephony outage than a TDM outage.

So the idea of going to VOIP solely to save money has slowly subsided. In the early years of VOIP, companies had to find an ROI in order to justify replacing tried-and-true equipment for new technology. Now, they're moving more into the TDM-replacement phase, so ROI becomes less important. To be clear, there *can be* a net savings after the first two years, but organizations are focusing on other benefits, such as streamlined features, improved productivity and integrated voice/data/video collaborative applications.

They then face the challenge of running this new telecom network internally, or leveraging third parties, which now have a few years of experience. Many are simply applying the money they had been spending on maintenance for Moves, Adds, and Changes (MACs) of TDM systems to overall management and monitoring of IP telephony. (External MACs for TDM environments cost \$168 on average, and range from \$65 to \$400 each. IP MACs cost only about \$10).

So the bottom line is that enterprises are willing to spend money to outsource management of IP telephony. It's something they have been doing for years with their telecom maintenance contracts. Now, they can just get more for the dollar in the IP world.

### **Defining Managed Services**

Although only 8% of companies are using hosted VOIP services, almost 14% are using MSPs to oversee their internal VOIP systems. But before delving further into the details, it's important to distinguish between the different types of third-party services:

***Hosted Services:*** Companies buy hosted VOIP from the carriers but in some cases, even equipment vendors offer them. The IP PBXs are physically located on the carrier network/data center. The carrier owns, monitors and manages the PBXs, and provides access to management portals for customers.

***Managed Services:*** The customers own the equipment and house it in their own locations. They contract with a third party to monitor and manage the infrastructure. Often, they install the VOIP system with the full intention of managing it themselves. But after doing so for about 12 to 24 months, they decide to rely upon a third party to manage the infrastructure. This is the most common configuration, and what this paper focuses on.

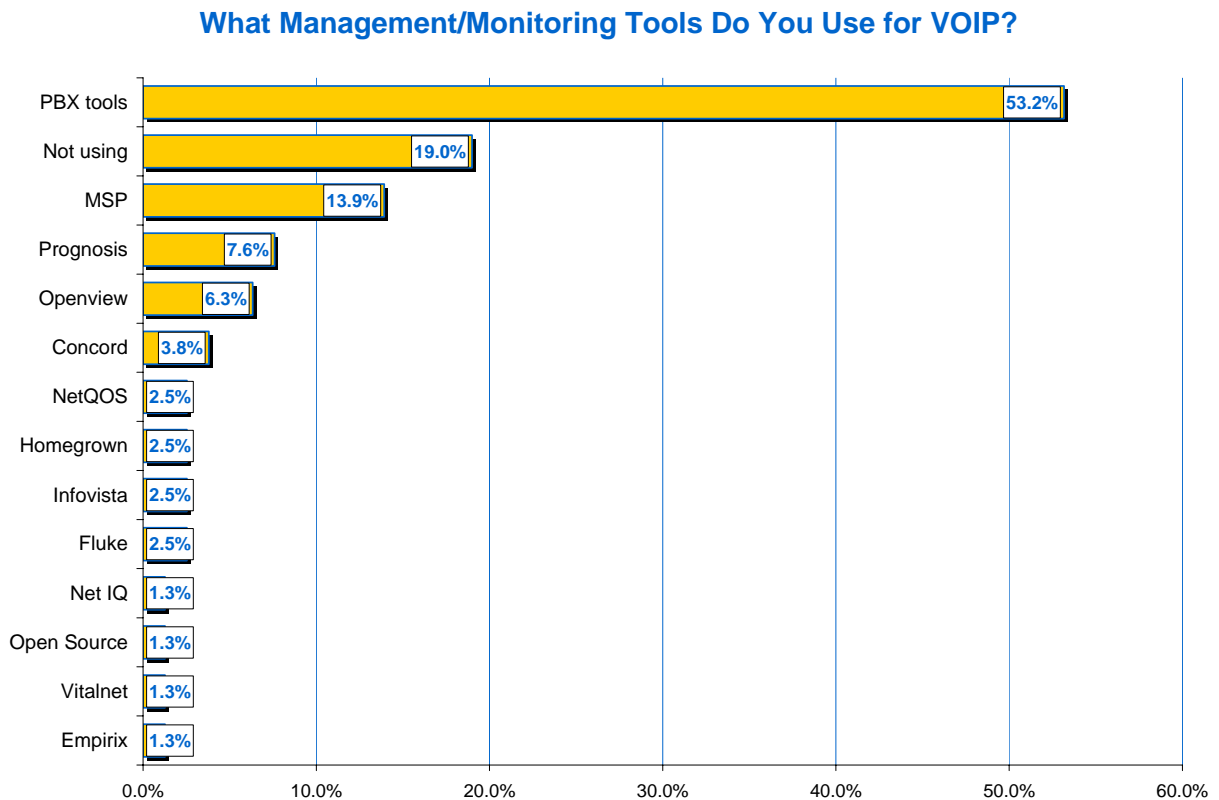


**Professional Services:** Companies buy professional services for a specific task, including engineering and design, installation, baseline assessments, security audits and training.

Although the interest in MSPs is on the rise, the majority of organizations continue to operate their VOIP networks internally, and the majority (53.2%) use administration tools that come with their PBXs. As we have seen for four years now, organizations with more than five locations find the need for more sophisticated management tools within 12 to 24 months of using VOIP. From that point on, they begin to understand the type of metrics and services they need.

“We want to get a lot more proactive. We have to wait for someone to call us now [to tell us there is a problem]. We want to have indicators for problems. As far as actually monitoring for call quality, we can't do that,” says the IT director of a large university that uses Nortel.

At that point, Nemertes sees management teams using a bevy of specialty and/or network tools. Specialty vendors include Prognosis, NetQOS, Infovista, NetIQ, Fluke (through its Visual Networks acquisition), and Empirix. The teams also rely upon network and system tools, from vendors such as HP, IBM, and CA, to provide some insight into overall performance affecting VOIP. (Please see Figure 4: VOIP Management Tools, Page 7).



**Figure 4: VOIP Management Tools**

The IT staff of a university had developed its own tools and used some of Cisco's tools that come with the PBX. Then, it began using Prognosis and found it could get information otherwise unavailable. "Prognosis allows us to look at everything centralized. There is a quick and easy way to look at charts and graphs. It's relatively easy to give data over lengths and periods of time. We couldn't get that from Cisco. In fact, a lot of the data from Prognosis comes from Cisco, but Cisco doesn't give us views we want and it isn't flexible enough. Prognosis allows us to customize and create default views."

The sheer percentage of organizations shifting to managed VOIP services has drastically increased in the past year, from about 6% to 13.6%. Most companies shift entirely to managed services; some continue to operate some of their own reporting and analysis tools.

One of the most startling findings in our research is that 19% are not using management and monitoring tools for VOIP *at all!* Many—but not all—of these are small companies with only a few sites. But there are some multi-site organizations flying blind entirely when it comes to their VOIP performance, stating, "We're not doing anything *yet.*"

For example, when asked about VOIP management tools, the IT director of an automotive company that just started implementing VOIP last year, says, "Good question. The answer is we don't have specific VOIP-management tools other than what Avaya has given us with the solution."

### **MSP Overview**

In 2005, about 27% of organizations used MSPs to manage their branch locations. This year, that figure has increased to 46%. (Please see Figure 5: Third-Party Branch Management, page 9). These partnerships may or may not include VOIP initially, but often, companies add that support later. The figures do indicate the general movement toward MSPs, though. "That is something we're really considering," says the IT director of a global non-profit organization. "We're really leaning towards that way because the market is maturing and pricing is becoming reasonable, especially in the United States."

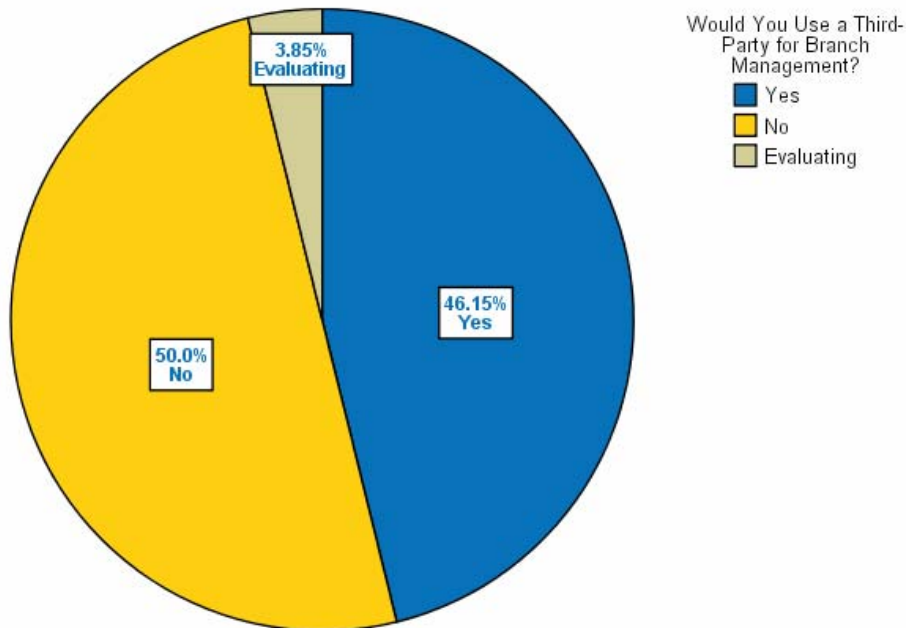
Just because organizations use MSPs doesn't always mean they're offloading everything to them. In some cases, they will have the MSP handle the WAN services or a particular application such as IP telephony, and the internal IT staff oversees LAN infrastructure and local desktop applications. In other cases, the MSP will handle troubleshooting and installation, but internal IT addresses ongoing management and monitoring.

Either way, we found participants were diligent about determining when and where it makes sense to use a third party. "The decision was based on several factors, including economics, architecture and relationship. Is there a supplier out there capable of providing the services we want? Do we have the skill set? Are the economics there," asks the associate vice president of an insurance company.

Not surprisingly, there are advantages and disadvantages to using MSPs. On the plus side, some IT executives have found some cost savings when compared to internal 24 x 7 operations. They also have been able to eliminate or reassign internal staffs to reduce operating costs or improve strategic areas of IT. In cases where companies are using more than one IP telephony vendor, they eliminate the need for training and employing experts on each system.



### Would you use a third-party for branch management?



**Figure 5: Third-Party Branch Management**

On the negative side, companies have found MSP services to be more expensive than internally managed systems—which is why it’s key for MSPs to know their market dynamics and price their services accordingly. Also, the customer loses control of the network by giving that up to the MSP. This could be negative if the MSP doesn’t do a good job managing the system or providing appropriate reports and success metrics.

The biggest challenge for the MSPs is pricing these services attractively enough to win the business. Several IT executives said they wanted to use MSP services, but the payback simply didn’t exist particularly with U.S.-based carriers. “The Verizon costs had a 10-year payback; ours was a three-year payback,” says the director of unified communications for a major financial-services company. “If we get everything built and roll to managed services, it might work. But we don’t see the carriers being very aggressive now.”

“We talked to AT&T and Verizon. If they can do it as well as or as cheap as us, then it’s a home run. The longer you wait the more opportunities you have. Now, pricing is all over the place,” says a VP for a financial-services company.

So far, the majority of those considering or using MSPs have turned to the carriers, including AT&T, Verizon, Sprint, Orange, Telstra and others.

But also in the past year, several global enterprises started using or evaluating the traditional outsourcers, who had been quietly watching the VOIP market without much to offer in terms of formal managed services. These major outsourcers, including IBM, EDS, CSC, each have won some key deals to manage the VOIP infrastructure of large global enterprises.

Midsize companies face a different set of dynamics. Many were early adopters of VOIP. They implanted IP telephony and managed the technology internally. What they found was that it only took them about 20 hours a week, on average, to manage the system. When there was an outage—at least for the first two to three years—it took them one to three times longer to isolate and repair the problem as it did in the TDM world. So they were faced with having effectively a part-time person running telecom. That person had other responsibilities, so when an outage happened, he or she didn't have time to keep up with training to help isolate the problem.

Consequently, many midsize companies have turned to MSPs to help. They have found success with regional or even national resellers, integrators or outsourcers, such as Black Box, CenterBeam, INS, Extellysis, Dimension Data and Aimnet. Those types of MSPs have been implementing and managing VOIP for two to six years now, and they are pricing their services aggressively. For example, the VP of IT for an upscale health-club chain says his VOIP management provider charges about 20% of the cost of the phone system annually for 24 x 7 coverage, training and user support.

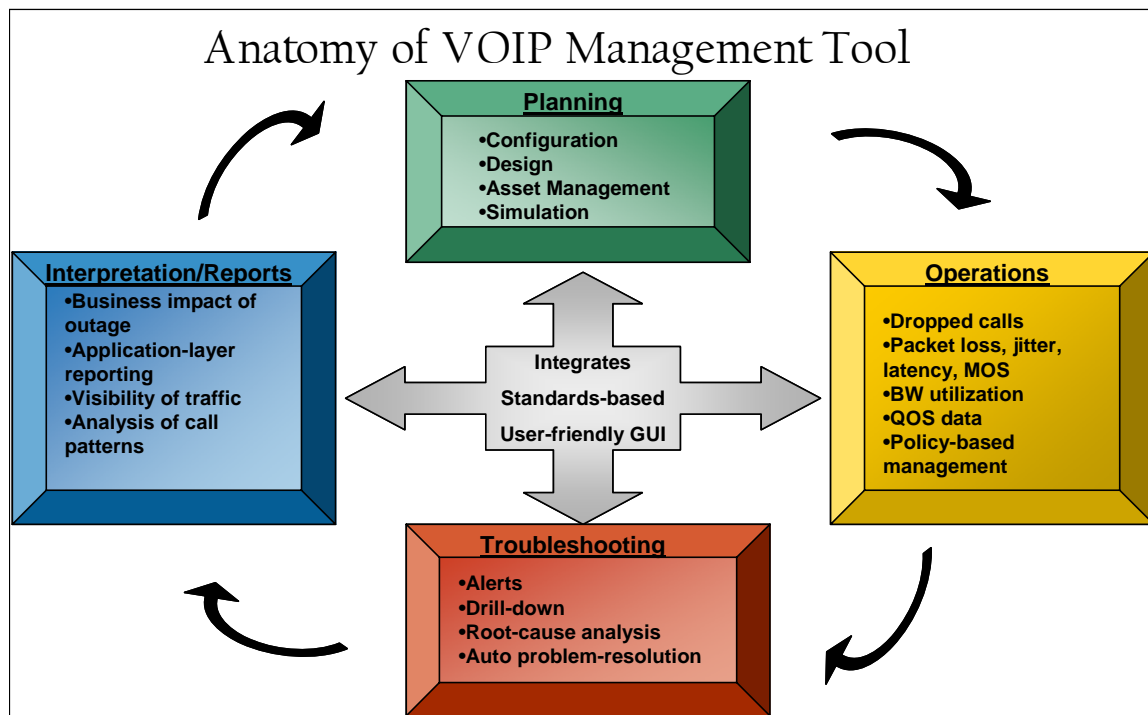
### **MSP Best Practices & Success Strategies**

Based on discussions with hundreds of IT executives in the past four years, we expect the trend toward using MSPs to continue. Like any technology, there always will be companies that choose to keep management and monitoring internal. But if the MSPs can price the services right and provide consistent, high-quality service globally, they will see some solid results.

So what do MSPs need to do today and tomorrow to serve this market? There are a few key focal points:

- Offer the right mix of services, and give customers the option of how much or how little you will control. For example, offer the following as table stakes:
  - Management of equipment, including all software upgrades for the IP PBXs and handsets;
  - Repair of any outages or problems on the network;
  - Provide access to monitoring portal so IT and telecom managers can get insight to performance on demand;
  - Provide reports illustrating key performance metrics weekly, monthly, quarterly and/or annually. We recommend providing statistics and reports for all of these time frames for the first 12-24 months, and then you can ratchet back.
  - Reports and SLAs should address the following metrics:
    - Mean Time to Repair: 3 hours;
    - Uptime: 99.999% (if higher uptime is required, equipment redundancy must be evaluated);
    - MOS (Mean Opinion Score): 4.0, using G.711 for codec compression (Scale is 1-5, with 5.0 the best. MOS will drop with higher compression);
    - Round-trip delay: <150 ms;
    - Packet loss <0.25%;
    - Jitter: <40 ms.

- Know what's driving customers to use you and make sure your company or division is organized around those drivers. For example, cost savings, highly responsive customer service, and expertise are big drivers.
  - Be prepared with interactive cost models to help illustrate your cost savings, and price your services competitively to illustrate those savings. Make sure you include soft costs in those models;
  - Provide references to validate your service, and make sure you're highly responsive during the sales process. (Sounds basic, but some large outsourcers have displayed solid customer service selectively);
  - Demonstrate your expertise by discussing past experiences with similar customers and by highlighting the specific experience of the people who are actually doing the day-to-day management. Stress that you have the expertise to make them feel comfortable reassigning some of their team to other more strategic tasks.
- Plan for growth. Multi-vendor IP-PBX environments are becoming more common, increasing from 10% to 20% year over year. MSPs, particularly those serving the midsize business market, tend to focus on managing a single vendor. That's a good start, but as time goes on, we expect to see more companies with more than one IP PBX vendor, driven by merger and acquisition or demand for new features.
  - Buy VOIP tools that monitor and manage multiple IP PBX manufacturers. Check their roadmaps and make sure multi-vendor support is in their plans;



**Figure 6: IP Telephony Management Framework**

- Offer enhanced services. IT staffs prefer to deal with a single third-party for engineering, installation, training and management. If you can provide those additional services without sacrificing quality and service, it could help you win more business.
- Focus on the IP telephony-management lifecycle. Nemertes built this framework based on comments and input from hundreds of IT executives and managers in response to what they wanted from their IP telephony management products. (Please see Figure 6: IP Telephony Management Framework, Page 11).
  - Focus on four key areas: Planning, operations, troubleshooting, and reporting.

Make sure you can address or have on your roadmap to address the sub-bullets referenced in the framework.

## **Conclusion**

VOIP clearly is a critical and common application at the vast majority of organizations. As they add additional collaborative applications, expand the number branch locations, and find end users demanding even more functionality and predictable performance, management issues will rise to the forefront—as they already have in many companies. MSPs are uniquely positioned to offer a value proposition for organizations who can't tolerate lackluster performance, yet may not have the internal resources, desire or expertise to do so.

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**About Nemertes Research:** Founded in 2002, Nemertes Research specializes in analyzing the business value of emerging technologies for IT executives, vendors, and venture capitalists. Recent and upcoming research topics include security and information protection, mobility and collaboration technologies, and outsourcing.