Managing VoIP Deployments

Jim Metzler
Ashton, Metzler & Associates
jim@ashtonmetzler.com

Introduction

In the August 2005 IT Impact Brief, I reported on the results of a survey given to the NetScout community. That survey identified eighteen possible projects and asked the survey respondents to identify the IT projects that they expected would have the biggest impact on their IT budgets and infrastructure during the next year. According to the results of that survey, deployment of VoIP was close to the top of the list, behind projects such as adding additional network security and redesign of some of the company's key business processes.

In a recent survey, we again asked the NetScout community to identify the IT projects that would likely have the biggest impact on their IT budgets and infrastructure during the next year. We also asked the survey respondents a number of questions about their VoIP deployment, such as the extent of that deployment and the degree to which they actively monitor their VoIP traffic. Throughout this IT Impact Brief, the respondents to this recent survey will be referred to as The Respondents.

In order to gather additional insight into VoIP deployment, I interviewed two of The Respondents. One of the interviewees is a network engineer for a branch of the government. The other interviewee is a network manager at a large utility. Throughout this brief, the interviewees will be referred to as The Network Engineer and The Network Manager respectively.

This goal of this IT Impact Brief is to present a reality check on how companies currently deploy and manage VoIP. To achieve that goal, I will utilize both the survey results as well as the two interviews.

Impact of VoIP

As mentioned, we asked The Respondents to rate the impact that a wide range of projects will likely have on their IT budgets and infrastructures during the next year. The Respondents were given four possible answers: not on the radar screen, little impact, some impact, and significant impact.

In this year's survey there were two IT projects related to VoIP deployment. One of these projects was 'New deployment of VoIP', and the other was 'Expansion of existing VoIP deployment'. For each of these projects, we added the percentage of The Respondents who indicated that the project would either have 'some impact' or 'significant impact'. Similar to the situation in August 2005, both of the VoIP related projects were close to the top of the list in terms of their anticipated impact, behind project to expand security, add more QoS, and redesign the company's key business processes.

Both The Network Engineer and The Network Manager indicated that their organization would be increasing their deployment of VoIP. The Network Manager stated that his company is planning to upgrade their existing PBXs and move to an all IP network. When that happens, they will use VoIP between their PBXs. The Network Manager stated that they will deploy VoIP in all new sites, and are looking at replacing some of their aging PBXs and key sets with VoIP.

Extent of Current VoIP Deployment

Two thirds of The Respondents indicated that their organization had already deployed VoIP. That percentage is in line with other market research into VoIP deployment.

There are a number of reasons why companies have deployed VoIP. For example, the Network Engineer stated that his organization deployed VoIP for two primary reasons. One of these reasons was to be able to offer services such as auto attendant and voice mail to small sites that previously did not have these services. The second reason was to create a feeling of cohesion among groups that had just recently come together as a result of mergers and acquisitions.

While the majority of companies had already deployed VoIP, it was interesting to realize how limited the extent was of most VoIP deployments. In particular, The Respondents were asked to indicate how widely VoIP had been deployed in their organization. Their responses are contained in Table 1.

Table 1: Extent of VoIP Deployment - All Respondents

Extent of Deployment	Percentage
Beta Sites	11.9%
Pilot Sites	37.2%
Throughout Headquarters	9.2%
At data centers and/or call centers	10.6%
Enterprise -wide	13.8%
Other	17.4%

One of the interesting conclusions that can be drawn from the data in Table 1 is that although the majority of companies have deployed VoIP, less than one company out of seven has deployed it enterprise-wide.

We also asked The Respondents to indicate how long their organization had deployed VoIP. Their responses are contained in Table 2.

Table 2: Duration of VoIP Deployment

Duration of VoIP Deployment	Percentage
Under six months	23.9%
Six to twelve months	22.5%
More than one year	27.5%
More than two years	17.4%
Other	8.7%

The fact that almost half of the companies have deployed VoIP for less than a year might explain why so few companies have deployed VoIP enterprise-wide. To dig into that a bit more, I looked at the extent of VoIP deployment (Table 3) from just The Respondents who indicated that their company had deployed VoIP for more than one or two years.

Table 3: Extent of VoIP Deployment - Long Duration Deployments Only

Extent Deployment	Percentage
Beta Sites	2.0%
Pilot Sites	34.3%
Throughout Headquarters	9.1%
At data centers and/or call centers	16.2%
Enterprise-wide	23.2%
Other	15.2%

The data in Table 3 shows that companies that have deployed VoIP for a long time are more likely than the general population to have deployed VoIP enterprise-wise. However, even within this group, less than one company in four has deployed VoIP enterprise-wide. In addition, one third of the companies that have deployed VoIP for a long time are still conducting pilots of the technology.

Monitoring and Managing VoIP

The conventional wisdom is that ensuring VoIP quality is both important and difficult. However, when asked about the approach that they take to monitoring the performance of VoIP on their network, the most common response from The Respondents (35.5%) was that they do not monitor VoIP traffic. In addition, we asked The Respondents to indicate if they test the VoIP quality in their network. The majority of The Respondents indicated that they were not testing VoIP quality.

The Network Manager and The Network Engineer had opposing positions relative to monitoring and testing VoIP quality. The Network Manager stated that he felt that the tools were not mature enough to show the level of detail he needed to manage VoIP. He also stated that many of the current tools to monitor VoIP are so expensive that if you spend the money to acquire them, you really hurt the business justification for deploying VoIP. The Network Manager did say that his organization does monitor link utilization in an attempt to ensure high quality communications and that his organization responds quickly to user complaints about poor voice quality.

The Network Engineer stated that "Life changes when you put voice on the network". He went on to say that carrying voice on what had been the data network makes that network all the more important. As a result, The Network Engineer uses Cisco Service Assurance Agent to monitor for delay, jitter and packet loss.

Summary

VoIP deployment remains an important issue. Some of the signs of that importance are the high percentage of companies that have deployed VoIP in the last year as well as the large percentage of companies that anticipate that over the next year they will either make a significant expansion of their existing VoIP deployment or implement new VoIP deployments.

While most companies have deployed VoIP, the majority start by deploying a beta site or by performing a trial. While some eventually migrate to deploying VoIP enterprise wide, that is typically a long slow process. In many cases, the expansion of VoIP past an initial limited deployment is driven by some kind of trigger; i.e., moving into a new building.

I have to admit to being somewhat surprised by how many companies do not proactively monitor and test the quality of their voice calls. I believe that as more companies move from piloting VoIP to broadly deploying it, this situation will change.

In the next IT Impact Brief I will discuss MPLS deployment. In order to write this brief, I am hoping to interview a number of you to better understand the experiences that you have had to date with MPLS.