

VoIP: How Does it Fit into Your Solution Profile?

You may be facing champions of VoIP within your own company, pushing you to deploy such technology. To them, it's a win/win scenario, full of cost savings and productivity gains. To you, it could be a technological uncertainty that may actually drive up costs and create more problems than it solves. So what is the right answer?

The key to accurate cost/benefit analysis of VoIP lies in a proper network assessment. This will help determine if a VoIP approach is indeed right for you. An obvious benefit of VoIP is in the area of data convergence. While placing voice traffic on the data network will no doubt increase the network load, converging the voice and data can add up to significant savings. This can reduce both the equipment and personnel needed for implementation, maintenance and traffic monitoring, making a VoIP network a very attractive option when looking to reduce your operational expenses.

But this benefit only applies if you have a network that is ready to handle voice communications. Some IT professionals view VoIP as simply another application that can be plugged into your network with little or no attention paid to the performance effects that this will have. Keep in mind, VoIP works by packetizing voice transmissions. While a 1 second delay may not have a noticeable impact when someone is sending an email, it is an unforgivable amount of time when someone is trying to have a conversation.

Network Assessment and QoS

Voice quality and reliability depend on network throughput—plain and simple. VoIP doesn't usually have a problem operating across a 10/100 full duplex LAN because bandwidth is plentiful making latency is a non-issue. However, the bottleneck occurs (and voice quality degradation results) across the WAN. All traffic must be monitored as it moves across this path.

Implementing network monitoring tools such as NetAlly can help pin point voice and data traffic congestion, allowing you to optimize end-to-end performance. Only a fully managed network with guaranteed QoS will ensure successful VoIP implementation. A key to successfully deploying a VoIP system is that you need a clean network to do it. A corollary benefit to implementing VoIP is the motivation to do some network "house cleaning" that might have been long overdue.

What VoIP Asks of Your Network

Latency—VoIP requires a latency of not more than 80ms each way for toll-quality voice communication (A delay of 150ms can still be acceptable). Latency is also a factor in the VoIP protocols that handle call control functions between systems or users.

An IP network can also be subject to unpredictable behavior, including packet loss. This is primarily an issue at the LAN/WAN boundary. Packet loss of 1% or less will not be noticeable from the end user's perspective. When packet loss exceeds 3%, the user will start to notice the call "breaking up". This packet loss can ultimately lead to dropped calls.

Will VoIP Save You Time and Money?

VoIP can definitely save you time and money, but only when applied in the right situation. Consider this example: If you are deploying VoIP in a building where you already have the infrastructure in place for a PBX phone system, you will not save anything in terms of installation effort and costs. However, if you are moving into a new building that does not yet have an infrastructure in place, VoIP can save you money in terms of the time and effort spent in actually wiring the building for service.

Companies that stand the most to gain from VoIP are mobile enterprises. If telecommuters are part of your workforce, they can remain completely connected to your voice and data network - even from a remote location. An employee can be working from home, and yet still be reached at the same phone extension and email address used in their office desk.

VoIP can improve your intra-office mobility as well. With VoIP, moving staff and offices no longer requires extensive move/change work. When an IP-phone is moved, the extension number and all assigned features moves along with it, eliminating the need for complicated rewiring at the new location. With VoIP, you can move your staff dynamically while keeping effort and expense at a minimum.

Needs Assessment is the Key

When it comes to the decision on whether VoIP is right for you, a proper needs assessment is critical. Is your current network up to the challenge and will the effort/expense of a VoIP implementation be justified by the overall productivity gains that will likely be experienced? A telecommunications vendor who handles not only VoIP, but other technologies as well, will be the best qualified to help you answer these questions and give you an objective assessment to help you meet and exceed your communication goals.