

VoIP has great upside, but beware the technological trapdoors

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So, what is VoIP, and why is there so much buzz surrounding it?

Voice over Internet protocol (VoIP) is the ability to speak over a data network based on Internet protocol. Its greatest benefit to companies is the dramatic gain in productivity by seamlessly connecting applications as well as interoffice communications. Billed as the next “best thing since sliced bread,” VoIP has made believers out of many — and given headaches to an even larger group of information-technology and facilities managers.

As with the adoption of any new technology, VoIP comes with two costs: one for the equipment and another in the form of the time, energy and commitment it takes to do it right. Therefore, it’s important for every president and business owner to fully understand the inherent technical issues that exist in VoIP and partner with a business-communications provider that knows how to overcome them.

VoIP’s problems have been widely discussed by telecom professionals since its inception. Unlike industry analysts and observers, business communication providers are in the trenches on a daily basis and understand the technology’s problems and challenges. Common VoIP-related issues include high or low voice levels — known as clipping — and exorbitant noise or echoing caused by poorly configured data networks. Users may also note a delay before they hear the voice of the person on the other end of the line. If you add software to the network without modifications, the quality of a call can deteriorate even further. Even something as simple as an employee accessing a file on a server can create network congestion that will negatively affect a co-worker’s conversation. That’s why it’s critical for IT managers to continually monitor performance and uncover these types of issues.

The allocation of bandwidth for Internet connectivity causes an entirely new set of problems. If there is a lack of upstream bandwidth, VoIP will not be effective (Editor’s note: According to SearchNetworking.com, a transmission from a server toward a user is referred to as downstream; a transmission toward the server is referred to as upstream). Upstream bandwidth is typically minimal compared with its downstream counterpart, and quality will be affected unless the system is enhanced. Furthermore, a growing number of users on an organization’s network will strain bandwidth and network capacity. Voice quality will decline when the network is overloaded with too many users.

Since VoIP is a relatively new technology, it will not be compatible with many legacy systems or LAN/WAN firewalls. That incompatibility might require additional investment in other network components.

Before investing in a large-scale VoIP deployment — or even in a small trial — you need to know how well your network infrastructure will handle the additional, quality-sensitive voice traffic. Many seemingly well-planned trials encounter delay after delay, exceed cost estimates and are eventually cancelled when the network proves to be unable to meet the requirements VoIP places on it. Gartner reports that 85 percent of networks are not ready for VoIP. What's even more shocking is that 75 percent of companies that do not perform a pre-implementation analysis of their network infrastructure will not have a successful system implementation. Properly assessing the system before, during and after installation will uncover hidden problems before serious damage can be done.

Problems aside, growth expectations are extremely positive for VoIP. According to the Telecommunications Industry Association and Wilkofsky Gruen and Associates, VoIP access in the U.S. will rise to 19.2 million lines by the end of 2007. The issues raised here are not deal breakers when analyzing whether VoIP is the answer for your business, but they should be considered.

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