VOIP…WHEN SHOULD YOU CONVERT?

More and more companies are migrating from a traditional private branch exchange (PBX) telephony system to a voice-over-IP (VoIP) system. The question isn't if you should move to a VoIP system, but when. Although VoIP systems have been commonplace in larger organizations, they are now becoming more affordable and practical from small- to VoIP…when should you convert? medium-sized businesses (SMBs) to implement. VoIP systems benefit everyone from telecommuters and mobile workers all the way up to the managers and users of large call centers.

What is VoIP?

VoIP is a cost-saving alternative to traditional telephony service. It delivers voice calls over a data network that uses packet switching instead of a circuit switching.

There are different types of VoIP networks. Calls can be “Internet telephony,” that is, sent over the public Internet, or they can be “enterprise IP,” which are calls originating on the corporate IP network and sent over the corporate intranet, or a combination of the intranet and a Public Switched Network (PTSN). The latter is called an IP PBX system.

VoIP options.

The best VoIP option for you depends on the size of your organization, the number of users, how many locations you have, etc. There are two basic types of offerings: hosted services or on-premises services, also called customer premise equipment (CPE services).

Large organizations typically use CPE systems where the system equipment is physically on-site. These offer much greater control over features, functions, and capabilities, but they also require a much greater initial capital outlay. Small businesses usually use hosted services as they are easier to manage and have a much smaller initial capital expenditure.

VoIP offerings include:

Converged voice and data: There are basic VoIP systems using existing phone systems. The most basic are software based, such as Skype. As software-based systems continue to grow and mature, they are becoming more appealing to the SMB market.

Hosted IP-PBX: In a hosted system, the service provider, rather than the end user, deploys a PBX system. The end user needs to purchase IP phones, but not a PBX.

Managed IP-PBX: This is an on-site VoIP system including the system, services, and support. It requires a greater capital expenditure but it gives the user a flexible call routing platform, management of PBX functions, and centralized call routing.

Session Initiation Protocol (SIP) trunks: A newer technology, SIP trunks enable converged IP applications within and outside the enterprise. SIP trunks offer significant savings, eliminating the need for local PSTN gateways. They also offer maximum control of multimedia communication sessions over an IP network.

Not all fun and free calls.

VoIP depends on having a fast, reliable network to operate. A fast network connection with guaranteed bandwidth is not a problem in a corporate intranet. But if you're using the Internet for VoIP, you're using a public network that may be subject to slowdowns. The quality of your connection may be unacceptable when Web usage is high.

You may face many of the same challenges experienced with sending high-resolution video over a LAN, especially if it's a converged voice/video/data application. Therefore, you'll need to test the speed of network connections and the network for available bandwidth, and have the ability to prioritize switched packets for QoSdelivery.

There are four common issues with a VoIP system:

- Latency is a delay in data transmission. This usually results in people speaking over one another.
- Loss. Losing a small percentage of voice transmission doesn't affect VoIP, but too much (more than 1%) compromises the quality of the call.

- Jitter is common to congested networks with bursty traffic. Jitter can be managed to some degree with software buffers.
- Sequence errors, or changes in the order of packets at the receiving station, degrades sound quality.

Emergency services issues.

The FCC has taken steps to require that providers of interconnected VoIP services (VoIP services that use the PSTN-the most common type of VoIP), to meet Enhanced 911 (E911) obligations. E911 automatically provides a callback number and, in most cases, location information.

As of January 2011, these rules do not apply to non-interconnected VoIP service providers, which provides calls between computers, IP adapters, or SIP phones to other VoIP customers and do not touch an interconnected service. For example, Skype to Skype calls over broadband is non-interconnected VoIP.

Power issues.

Consider, too, that VoIP needs both working Internet access and power to work. If you lose your Internet service, your phone goes, too. And, unlike regular phone service that can keep basic phones working when the power goes out, VoIP needs power—if you lose power, you lose your phone.

As with any emerging technology, there are going to be a few bumps in the road. In the long run, VoIP offers a better way to manage and transmit voice, data, images, video, e-mail, faxes, and more at a lower cost than traditional phone services.

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