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VOIP – A Primer

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The acronym VOIP seems to be everywhere these days, promising dramatic cost savings, amazing new features and a transformation in the way that we communicate. The promises are attractive to almost every organization – but what is the reality and how might VOIP work in your organization? In reality all of these things seem to be just out of reach for most organizations. Before going into the details about what VOIP is and how different organizations can use it, let's look at some of the acronyms that accompany VOIP.

Definition

Starting with the basics, VOIP stands for Voice over Internet Protocol. In the VOIP world, voice traffic is passed over digital IP networks (the Internet) before being translated to the PSTN. PSTN stands for public switched telephone network and is the same system that has been providing phone service since the 1970s. PSTN used the concept of QoS, or quality of service, to ensure that a voice call could be made without distortion or drops. QoS is a more important concept to understand with VOIP because the voice calls can be sent over the same network as an organization's web traffic, a network that generally operates with a different quality of service promise than the PSTN.

VOIP phone systems give organizations the ability to unify their communication systems and bring multiple offices, small and large, under one voice umbrella. A simple example is that an organization based in DC with offices throughout the United States can use a VOIP phone system to eliminate long distance charges between the offices and give the receptionist in DC the ability to transfer a caller to the west coast office seamlessly.

Desktop Applications

The most common implementation of VOIP that people encounter are applications like Skype, Gchat, iChat and most any other instant messaging system. These programs give desktop users the ability to have voice calls with other members in their contact list and in some cases the ability to make calls to landline phones for a nominal fee. These applications provide "cell phone" quality service because the application provider cannot guarantee QoS from your desktop to the desktop of the person you are talking with. Since the cost is low, this is usually an acceptable trade off.



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Hosted VOIP

Moving up from desktop VOIP applications, hosted VOIP systems are provided by vendors like 8x8, Aptela, Aptix and numerous others. These vendors will provide traditional phone system features like an auto-attendant, voicemail, phone extensions and limited conference calling. Typically an organization would manage the order and transition process with a sales rep over the phone and by email. New IP phones would be shipped to your office and then plugged into the data network, using the internet connection to send the voice traffic back to the hosted VOIP provider's system. These systems have the advantage of being low cost, but often do not provide the same level of call quality as a traditional digital PBX phone system would. This can be frustrating because call quality can vary based on a range of factors including number of staff in the office, number of calls being made and traffic load on the public Internet routers, which neither your organization nor the VOIP provider controls, between your office and your provider's data center.

Enterprise Hosted VOIP

Enterprise level hosted VOIP providers offer true business level VOIP service because the provider controls and manages the traffic from the phone on your desk to the switch in the closet to the router to their datacenter. In an enterprise level configuration, your VOIP provider will install a T-1 line (or more) that connects the phones in your office directly to the VOIP system in their datacenter. Hosted VOIP providers typically provide a 24/7 support environment and a very high level of redundancy and service because in addition to your phone system, they are also providing the phone system to hundreds of other customers. Your organization will have access to web based management tools to manage individual mailbox settings and admin access to setup new staff. Hosted VOIP environments will provide a wide range of feature; however, because the system is hosted, it can be much more difficult to add custom applications onto the VOIP system. Hosted VOIP providers can also be a part of an organization's business continuity plan. Since their systems can be redundant across multiple data centers any disruption in access to your primary office location will not disrupt phone service. Staff can take their VOIP phones home or login to the web management portal and send phone calls to their cell phones

In House VOIP

VOIP systems can also be installed locally. Larger organizations may want the control of having their phone system in house. Every major phone system vendor has a VOIP option. Installing a phone system in house also provides the opportunity to use open source systems such as Asterisk. An in house phone system requires a lot more planning and design to provide the same level of redundancy and performance as a hosted system. It does have the benefit of being highly configurable to your specific requirements.



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Things to Consider

When an organization is looking for a new phone system there are a number of things to take into consideration. The first is your current telephony costs, including local, long distance, remote office, home office and cell phone. Potential new systems should be evaluated against this cost baseline while also estimating the indirect costs of staff time required for management and administration of the current and potential systems. Also consider the features and restrictions of your current system compared to the functionality offered by a VOIP solution and how functionality differences might impact operational efficiencies. Finally, don't lose sight of the all important quality of service issue; be certain any new system will meet your call quality requirements. With this framework in place, the decision to move to VOIP can be made much more certainly.

This document is meant to be a cursory overview of the VOIP landscape facing small and medium sized organizations. While a number of scenarios were discussed, this is not an exhaustive list of all organizations' needs and requirements. We welcome the opportunity to discuss your particular requirements and work to find the best solution for your organization.