

VoIP Solutions Provide Hard Cost Savings and Future Flexibility for Small Businesses

White Paper
May, 2008

Abstract

According to analysts, proprietary PBX telephone vendors are phasing out analog systems. Many vendors expect to discontinue hardware sales and support by the end of 2008. Internet Protocol Telephony (IPT) based on Internet Protocol-Private Branch eXchange IP-PBX software is already replacing these systems at a rapid pace. Small businesses in particular have jumped at the chance to install Voice over IP (VoIP) systems in order to save on toll charges, simplify phone system management and maintenance, and usher in new productivity-enhancing applications. While cost savings has been the primary driver for the migration to IPT and VoIP, companies are already reaping the benefits of new integrated applications that include video conferencing, presence-aware communication, integrated customer service support, and more.

The implementation of IPT is often referred to as “convergence,” since two previously separate networks – analog PBX and the IP network that carries data traffic – become one. Convergence reduces the direct costs associated with phone calls, as well as the indirect costs associated with network management and maintenance. Convergence technologies include IP-PBX and VoIP software and hardware (like softphones which reside on desktop computers and SIP phones). (Please see the definitions sidebar for more detail about these terms.) For the remainder of this discussion, we’ll refer to the fundamental business application as VoIP. With VoIP, data and voice traffic use the same transport infrastructure (where voice is simply digital data that is routed across the network).

This white paper explains the advantages, benefits and opportunities available to businesses that adopt VoIP solutions and offers a brief overview of D-Link’s VoIP and IPT equipment.

VoIP Replacing Phased Out PBX

As early as 2003, leading analyst groups like Gartner, Synergy and Forrester predicted that PBX manufacturers would discontinue development and support of their PBX products. The old systems have become increasingly more expensive to maintain and update, and many businesses want the additional advantages inherent to converged IP networks.

Organizations that use analog PBX systems are presented with a number of problems, including:

- The cost and rigidity of separate voice and data networks
- Limited or non-existent integration between communications and business apps
- Inflexible, proprietary platforms fail to adapt to emerging customer and business needs
- Complex telephone devices that impede employee productivity

For these reasons, a lot of companies have already made the switch to VoIP. Smaller companies, in particular, can justify equipment costs for new SIP phone handsets and integrated messaging systems like D-Link's VoiceCenter™, because the number of phones and users they have is minimal. Organizations in the process of moving or upgrading their data networks are ideal candidates.

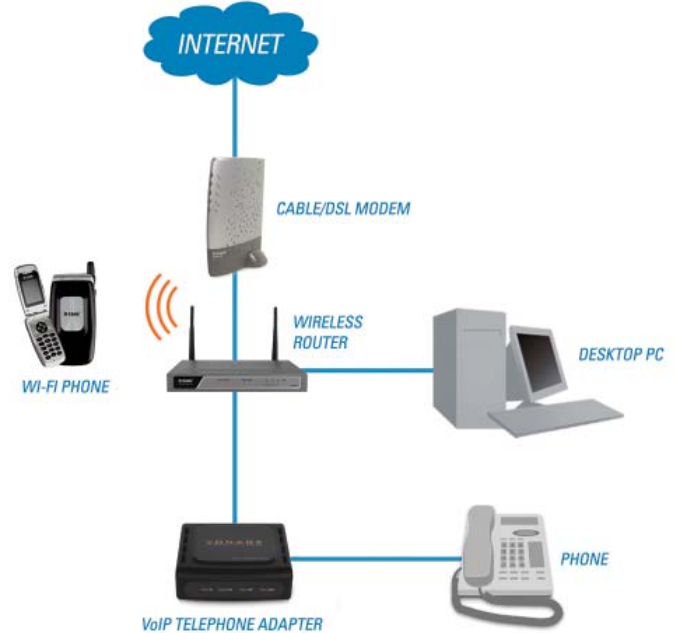
Why VoIP?

VoIP allows companies to bypass long distance tolls associated with the Public Switched Telephone Network (PSTN). This factor alone has been the primary migration driver for the past several years. For companies that maintain LAN, WAN and telecom groups internally, converged networks also greatly reduce operational costs. At larger companies, telecom and IT departments used to support these three different networking groups. IP convergence, however, allows LAN, WAN and telecom to merge. Convergence combines the network team with the telecom team, treating voice as a network application, and opening up opportunities for additional services like:

- Video conferencing solutions
- Meeting and collaboration solutions
- Media streaming

At the user level, companies are using both wired Ethernet and Wi-Fi SIP phones to connect to the VPN or a VoIP service to place calls which bypass tolls. Some remote workers have eliminated land lines completely, utilizing IP softphones to send and receive calls via laptop and internet connection. Services like Skype® have gained widespread mainstream usage, for example. Industry trends indicate broader acceptance of SIP phones and solutions like Microsoft's Response Point™ as time goes on. Response Point is Microsoft's hottest selling small business product, in fact.

YOUR NETWORK SETUP



Small office VoIP deployments feature simple, easy-to-maintain architectures. At most companies, most of the hardware is already in use.

Extended VoIP Benefits

With VoIP, it's easy to add voice and data functionality without the need for hardware add-ons. IP phones easily connect to the LAN, eliminating dedicated PBX voice wiring and hardware. As a result, businesses spend less money and time scheduling phone company appointments for service, changes and fixes. VoIP offers:

- One unified network for voice and data applications
- Voice integration with desktop productivity applications
- Simplified administration and maintenance for moving, adding, changing and deleting users (MACD)

As the organization grows, distributed offices can be connected via LAN or WAN. Home and remote users with Internet connectivity can easily access the main corporate system, which includes customer data, contacts, collaboration tools, and extended application information. Users can leverage "corporate" features such as Automatic Call Distribution (ACD) routing, chat and IM, video conferencing, real-time presence and more. As a result, employees become much more responsive to customer, partner and supplier demands.

SIP phone hardware also adds another productivity component. A typical PBX phone has 50+ buttons that users rarely utilize. SIP phones are more like cell phones, which everyone knows how to use. The keypads are simple, the menus are intuitive, and, with

the right applications in place, they offer all the IP features that a data plan cell phone would. Adding, moving and deleting users in a VoIP system can be done by an office manager or the president of the company. It's a simple software interface. User preferences and changes can be easily managed by users or a central admin position.

Real ROI Today

Businesses that have opted for VoIP realize cost savings from both toll bypass and system management perspectives. Since users and office staff can easily manage system changes from the VoIP software interface, flexibility increases and management costs are reduced. By avoiding long distance charges, companies accumulate monthly savings in perpetuity. Productivity and creativity gains from collaboration, presence and communication improvement only add the value and returns moving forward. Since the system is IP-based, it remains flexible, scalable and open to new innovation and capability as the business grows and needs change.

D-Link Solutions

D-Link offers a comprehensive line of VoIP solutions, including IP-PBX equipment, SIP phones, and VoiceCenter™, D-Link's Microsoft® Response Point™ solution for small businesses.

D-Link VoiceCenter

D-Link VoiceCenter, a Microsoft Response Point phone system, is an IP-based phone solution that's perfect for small to medium-sized businesses. It is designed for small to medium-sized businesses (SMB) and supports up to 50 users. Unlike previous generations of complicated, hard-to-use IP-based products, VoiceCenter is easy to install, manage, and maintain. Rather than taking days, it only takes a short amount of time to get the phone system up and running. VoiceCenter is also portable. Businesses that need to relocate offices can easily take the phone system along. In addition, while D-Link provides solid phone system hardware, the integrated Microsoft Response Point phone system software provides state-

of-the-art features such as Voice-activated Dialing and Voicemail Access, Automated Attendant for routing calls, and Automatic Phone and Gateway Discovery that allows for a simplified setup process.

Product Features:

- Designed with Simplicity in Mind: Easy to Install, Use, and Manage
- Scalable – Add Up to 50 Phones and Phone Lines to a Network
- No Fees or Licenses Required for Adding More Phones or Gateways

DVG-3104MS VoiceCenter 4-Port PSTN Gateway for Microsoft Response Point

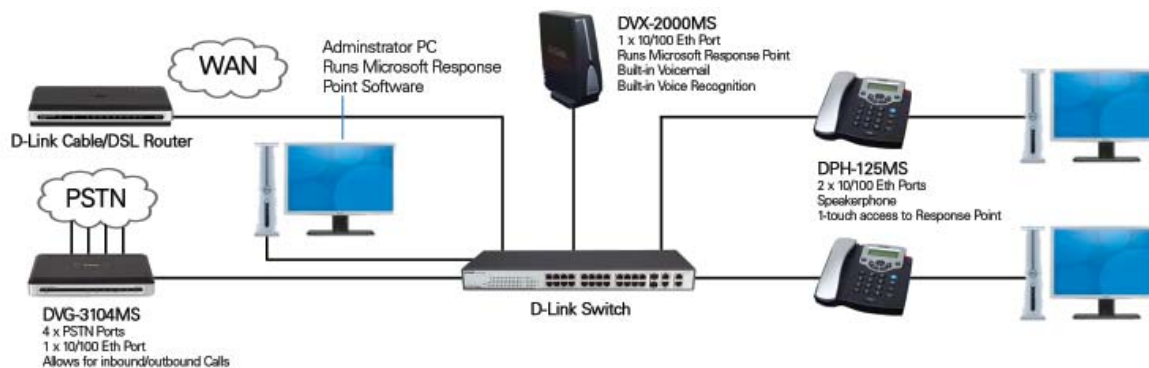
With the D-Link DVG-3104MS trunking gateway, VoiceCenter can combine VoIP and PSTN calls on the same VoIP network. The DVG-3104MS bridges and routes outside PSTN lines into the VoiceCenter internal IP-based phone system. It provides four PSTN (FXO) ports for connecting up to four phone lines and one 10/100 Ethernet port for connecting to a network. A total of up to 50 PSTN lines can be added to a VoiceCenter phone system. Simply add more DVG-3104MS Gateways as needed to support additional phone lines.

Product Features:

- Built for Integrating PSTN Phone Lines to a VoiceCenter IP-based Phone System
- Designed with Simplicity in Mind: Easy to Install, Use, and Manage
- Scalable – Add Up to 4 PSTN Phone Lines per DVG-3104MS Unit (Up to 50 Phone Lines to a Network)
- No Licenses Required for Adding More DVG-3104MS Units to VoiceCenter

D-Link DPH-125MS VoiceCenter IP Phone for Microsoft Response Point

The DPH-125MS IP Phone includes many standard and advanced features not found in analog phone systems. With the built-in Microsoft Response Point (RP) button, users have one-touch access to Voice-activated commands. Voice-activated Dialing is one of the Voice-activated commands that enable users to reach anyone in



D-Link VoiceCenter combines all the advantages of VoIP calling into one end-to-end, easy-to-install system.

the company directory or their Microsoft Outlook® address book by simply saying their name. Users can also transfer, park and retrieve calls the same way. Voicemail to E-mail Forwarding is another convenient feature. With the Call History function, users can easily view the calls that were received as well as the calls that went out. In addition, standard features such as Mute, Hold, Transfer, Speakerphone, and 3-Way Conference functions are included.

Product Features:

- Designed with Simplicity in Mind: Easy to Install and Use
- Easily Add More IP Phones to a VoiceCenter Phone System – Up to 50
- ResponsePoint (RP) Button for One-touch Access to Voice-activated Commands
- No Fees or Licenses Required for Adding More Phones

For more information about D-Link VoIP solutions please visit <http://www.dlink.com/voip> or call [1-800-326-1688](tel:1-800-326-1688).

Definitions

IPT (IP Telephony): Technologies that use IP's packet-switched connections to exchange voice, fax, and other forms of information that have traditionally been carried over the dedicated circuit-switched connections of the public switched telephone network (PSTN).

VoIP (Voice over IP): The term that describes voice communications traveling as data packets over the Internet. This only refers to voice, as opposed to other digital traffic, which could include video, fax, application data, SMS, MMS and IM. With VoIP, once voice traffic from the general telephone network reaches a VoIP-enabled business, the Local Area Network (LAN) routes packets to the appropriate end-user.

IP-PBX (Internet Protocol Private Branch eXchange): A premise-based phone system that initiates an IP call. Businesses that already have broadband Internet connectivity do not necessarily need premise-based IP-PBX equipment. VoIP service providers typically manage this hardware as a remote service.

SIP (Session Initiation Protocol): An IPT signaling protocol used primarily used for VoIP calls. SIP can also be used for video, IM and other IP data transfers.

QoS (Quality of Service): QoS is a switch feature that enables administrators to set different priority to different applications, users, or data flows, to guarantee a certain level of performance for a particular data stream. Without QoS in place, real-time applications, like video, will fight over available bandwidth and slow network traffic to a crawl.