

White Paper

Voice Over IP

Revolutionizing the way Businesses
Communicate

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Voice and data technologies have converged over the past several years and are currently revolutionizing the way businesses communicate. IP telephony combines both voice and data into a single, intelligent network and is no longer a far-off technology that will eventually appear in the distant future; it is here and available today. Businesses across the globe, both large and small, are implementing IP telephony in order to take advantage of compelling benefits such as enhanced features, reduced costs, streamlined operations, and business continuity.

Introduction

Voice-over-Internet Protocol (Voice-over-IP, or VoIP) is being adopted by more and more businesses around the world and is not only emerging, but flourishing. Moreover, VoIP is not a new technology; it is an old technique that has been around for about a decade. Simply, VoIP uses Internet Protocol to digitize voice calls into packets using the existing company network connection. Calls placed by using Internet Protocol bypass traditional phone networks that have toll-based charges, so calls are generally less expensive.

Although many people are unfamiliar with VoIP, the technology has been around for years. In the late 1970's, there were experiments with ARPANET (the predecessor to the Internet) using IP to send packetized voice messages. In the mid 1990's, IP telephony started being used to open a voice connection between two PCs over the Internet. Initially, the quality of calls was of concern, so most people who used IP telephony were hobbyists and experimenters. However, today with the extended extensive research and development, the quality of VoIP has surpassed cellular service and is equal to that of the traditional phone line.

In addition to the long history of IP telephony, many consumers and businesses have most likely used VoIP without even knowing it. For example, most traditional phone companies have been using it within their regional networks.

Consequently, consumers who use any cheap, long distance phone service today are probably already using IP telephony technology without realizing it. In addition, most phone companies are already using VoIP to carry international calls, resulting in 6% of all international phone traffic now being internet-based. These phone companies have been using VoIP technology for years and its adoption rates are on the rise among businesses of all types and sizes.

There is little doubt that VoIP technology will continue to be developed and implemented over the next few years. One study estimated that corporate phone lines that adopt VoIP will leap from 4% in 2004 to 44% in 2008 due to the reduced equipment costs that will occur over the next few years (Radicati Group, 2004). Another study finds that VoIP will account for approximately 75% of world voice services by 2007 (Frost & Sullivan, 2002). In addition, in 2002, 75% of large US organizations planned to switch to IP systems for voice within the next two years (Instat, 2002). Furthermore, 90% of enterprises with multiple locations will adopt VoIP systems over the next 5 years (Phillips Group, via Aspect, 2001). As a result, a technology that has been around for years is now a proven telecommunications tool, being adopted by businesses worldwide.

VoIP has helped the phone companies and now many other businesses save money, and by implementing a VoIP phone system on your own computer networks, you could too. Many of the benefits are immediate, such as the cost savings for external calls and depending on the type of VoIP solution, free internal calls to all parts of your company that share a computer network. Cost savings are not the only advantage to adopting VoIP. The other benefits include enhanced features that help to streamline your business operations and allow for greater business continuity. For any business, IP telephony is the next wave of voice and data communications. For most businesses, it is not a matter of if they will implement VoIP; it is a matter of when and how. If you are not considering this technology today, you will be tomorrow.

“VoIP will account for approximately 75% of world voice services by 2007” (Frost & Sullivan, 2002)

Two Types of VoIP Adoption

Depending on the type of results you are looking for in your VoIP solution, the number of features and customizations you need, the education and efforts of your staff, and the money you choose to invest, your company has a choice to make on what type of VoIP solution will benefit and work most effectively in your

- **Dedicated – more customization, manage and deploy your own environment**
- **Hosted – lower upfront costs, hosted and managed by a VoIP provider**

business. There are two types of VoIP solutions that your company can take advantage of: a dedicated environment or a hosted offering.

Dedicated VoIP – A dedicated solution is one in which your company hosts the VoIP server and your IT staff has the ability to customize settings and manage and deploy your own environment. Generally, this solution is best for large companies that need extensive customization and have a skilled IT staff on networking and security issues to operate and host their own VoIP solution. In addition, the dedicated VoIP solution has a larger upfront cost since the company will maintain its own VoIP server. Consequently, many Fortune 500 companies (i.e. Ernst & Young, Hewlett Packard, Boeing) have already begun to adopt VoIP using the dedicated environment and will continue to do so in the near future.

Hosted VoIP – A hosted solution is one in which your company outsources your VoIP project and the server is hosted and managed by a VoIP provider. Generally, this solution is best for small to medium enterprises (SMEs) with multiple locations. With a hosted environment, the company has less upfront costs and less to maintain with a reduced overall cost of ownership. However, the small to medium sized company can take advantage of the same features and cost savings as large companies by implementing a hosted solution. By selecting the hosted VoIP solution, your company can choose only the features that will most benefit your company, while leaving the setup and maintenance to your VoIP provider's experts. In the past, many SMEs dismissed VoIP services as too costly, but now with the hosted VoIP option SMEs are using their existing investment in traditional data communications equipment to enable rich IP features like voicemail, fax support, a one-number system and free inter-office calls.

Hosted and Dedicated VoIP both offer compelling benefits and it is now your responsibility to research and investigate which option is best for you and your business. Whether you have a large company and desire extensive customization and the freedom and ability to manage your own VoIP server, or a small company and still want to take advantage of VoIP's cost savings and enhanced features, nothing is stopping you from becoming a part of the next generation of corporate communications.

The Many Advantages and Benefits of VoIP

Most businesses will be implementing VoIP systems in their offices within the next few years due to the many benefits they will reap by doing so. These benefits include:

- ***Enhanced Features*** – such as click-to-call, unified messaging, find me/follow me (based on treatment and status), a call log and company directory on a web based interface
- ***Reduced Costs*** – cheaper long distance & international calls, free local calls and calls between your network of offices, as well as savings on “soft costs” such as employee time and improved infrastructure

- **Streamlined Operations** – such as the ability of office managers to easily make moves, adds, and changes without the assistance of an outsourced technician
- **Business Continuity** – the ability to have continuous voice communications during times of crisis

All of these advantages and benefits will help make your business more effective and efficient. Below are further descriptions of each of the four benefits mentioned above.

Enhanced Features

The features associated with VoIP include those you are accustomed to receiving on your traditional phone line such as call forwarding, call transfer, call waiting, caller ID, redial, call park/pickup, and call hold as well as incredible features that are revolutionizing the way business is being done. Here are a few examples:

- **User Web Portal** – This feature gives users access to a call log detailing their inbound, outbound, and missed calls in a web-based interface. This gives all users easy access to phone numbers, vendor information, and company directories with a click of a button. In addition, all missed voice mails are saved into a .wav file so that users can easily save, locate, and replay old messages. Also, some VoIP hosted solutions allow for a full integration of the Web Portal with software such as Microsoft Outlook.
- **Click-to-call** – Using the user web portal, users can easily return missed phone calls as well as contact clients and vendors in their directory with a click of the mouse-button using the “click-to-call” feature. This saves users time by allowing them to just press a button instead of looking up phone numbers and then dialing on a keypad.
- **Web and audio-conferencing** – Utilizing the user web portal, users can easily create conferences on-demand, or schedule them in advance. In addition, users can attach documents for conferencing needs, such as PowerPoint presentations, and during the conference the administrator can control the presentation on all participants’ screens from his/her computer, allowing for meetings and presentations without traveling or conference rooms. This saves time and money, and is very convenient. Users no longer have to pay their telecom provider for conferencing services and conference administrators no longer need to distribute hard-to-remember login information to all participants. This feature is especially beneficial to companies with many offices and a dispersed workforce.
- **Find me/Follow me** – This feature allows users to customize their incoming calls. You can set up a VIP list so that your most important co-workers and customers can reach you, and others can go directly to voicemail. Also, you can set up your VoIP server to find you wherever you are so you don’t miss any important calls. For example, a VIP customer may phone you at the office. Your VoIP server uses the caller ID to recognize that this call needs to reach you. If you aren’t at the office it will route the call to your desk at home, or to your mobile phone. This is also helpful because it protects your privacy since you only need to give your contacts your office phone number rather than your home and cell phone numbers as well.
- **Local Number Portability** – This feature can save your company money by allowing you to use local numbers to phone or fax customers or vendors who are not within your traditional local area. The VoIP server can detect that the number you dialed is closer to another one of your offices than the office you are calling from and routes the call via the network to the closer office, thus a local call is placed instead of a long distance call.

“Users no longer have to pay their telecom provider for conferencing services and conference administrators no longer need to distribute hard-to-remember login information.”

- **Unified Messaging** – This feature allows you to consolidate the management of communication. For example, now you can send voice mails to e-mail and fax to e-mail using the User Web Portal. With the multitude of messages that employees must manage on a daily basis, VoIP allows for a single point of access for all message types: voice, fax, and e-mail from virtually any communications device, such as telephone, Web Browser, or personal computer. It's like having your own personal secretary to prioritize and forward your calls, faxes and emails.
- **ACD (Automatic Call Distribution) Functionality** – VoIP platforms also have the capability to automatically distribute calls just like your traditional PBX, which is extremely helpful if your business has a call center. ACD allows your business to handle your inbound calls more effectively by routing them based on criteria you specify. ACD puts callers into a queue with messages until the next operator is available. Moreover, since VoIP integrates voice and data, it is now easier to monitor and record inbound calls. You can also customize the messages callers hear while they are on hold whether it is radio, CDs, or messages created by you.

Reduced Costs

One of the most attractive reasons for implementing VoIP is, of course, the overall cost savings over your traditional phone service. There are several ways in which VoIP saves your business money:

- **Lower Usage Costs** – This is probably the main way you save money with VoIP. By utilizing VoIP, you get the same quality and functionality of your current telephone service, but without the long distance fees. Moreover, with certain VoIP solutions you can elect to have free “on-net” calling, which means you can 4-digit dial all of your company’s offices and extensions whether they are down the street or across the globe, saving you long distance fees among offices. In addition, by using VoIP instead of your current long distance and international telephone provider, you will incur a significant cost savings in long distance and international fees. For example, businesses that have already implemented VoIP have saved up to 90% on their long distance and international phone bills.
- **Lower Cost of Maintenance, Support, and Moves Adds and Changes (MACs)** – VoIP allows office managers to manage their own phone systems, replacing the need for outside technicians to come in and make moves, adds, and changes. Your employees can now take their phone with them if they move offices and have their calls automatically routed to the new office because the number assigned to the phone moves with it wherever it goes. In addition, the office manager can now quickly set up “virtual” offices for contractors, temporary workers, etc. eliminating the need for a full-time employee to manage the phone system. Consequently, you can grow your business without needing to add more support staff.
- **Reduced Network Infrastructure** – All of these cost-saving features have led to a VoIP solution lowering an average enterprise’s total cost of ownership by 34%, 44% for network administration, and 22% for network connectivity costs, according to industry sources. Moreover, there are several indirect cost-saving features, such as the time associated with making conference call arrangements, managing multiple messages, and looking up and dialing numbers, all of which are reduced with VoIP communication, making your staff more productive, and reducing the need for outsourced services.

“Businesses that have already implemented VoIP have saved up to 90% on their long distance and international phone bills”

Streamlined Operations

VoIP not only saves you money, it streamlines your business, makes your staff more productive and allows for more efficient and effective communication among your staff as well as with your vendors and customers. There are several ways in which VoIP can streamline your business operations:

- **4-5 digit dialing to your network of offices** – If your business has multiple branches or offices, VoIP calls can be made to all of your offices using 4-5 digit dialing eliminating long distance and toll fees among offices worldwide. Consequently, this helps to create a single office atmosphere where employees can communicate with each other free of boundaries. In addition, soft phones allow people to connect to the VoIP network through a variety of devices and locations physically separate from the office.
- **Unified Auto Attendant** – The auto attendant can manage incoming calls when a live operator is not available. For example, during periods of high call volume, the auto attendant can back up your live operator or receptionist. This can also be helpful for calls that occur during lunch, after-hours, or on weekends. In addition, the auto attendant can transfer calls to a location that has a live operator. If your east coast office is closed, it will automatically transfer your call to the west coast office.
- **Unified Office Administrator Portal** – The office administrator portal allows your office manager to customize user accounts based on the functionality required. Features can be added or deleted, and administrative and management functions can be changed to give your employees the features they will need and utilize most. This portal allows you to avoid management headaches and maintenance costs. Moreover, it allows office managers to make these moves, adds, and changes (MACs) without the help of an IT expert. PBX vendors traditionally charge \$90 and up for each MAC, and if you have high employee movement and/or turnover the costs can be very costly to your business.

Business Continuity

VoIP also helps to ensure your business will be able to withstand any disruption to your normal functioning by including many business continuity features. For example, if an office phone becomes damaged or unusable for any reason, the calls going to that phone can be forwarded to workers at home over broadband connections. Thus, through universal IP addressing, if you lose a connection, it's much easier to switch to another connection than your traditional phone service. In addition, hosted VoIP solutions are hosted in multiple, fully redundant, clustered environments that ensure that if one switch fails, the others can maintain uninterrupted operation. This gives users the ability to access a backup system at an off-site location in the event of a failure to the main system and can be a critical part of any overall recovery plan given the volume of messages received on a daily basis.

Moves, adds, and changes with the click of a mouse. No need to hire outside technicians or IT staff.

Summary

VoIP is here and it is now. VoIP can offer your business substantial savings in capital and operating costs as well as enhanced functionality by converging separate voice and data networks into a single multi-service network. Whether your office consists of 25 employees, 500 employees, or thousands of employees across the globe you have a choice in the type of VoIP solution you wish to implement. Both dedicated and hosted options are available to SMEs and large multi-national corporations. The many advantages and benefits of implementing VoIP outweigh the risks; hence, most businesses are planning to implement some type of VoIP solution in the upcoming year. In a competitive marketplace, businesses must always be sure to investigate any and all opportunities for growth and efficiency. As a result, it is important that your business investigate how VoIP can help you to achieve this goal. This flourishing telecommunications tool cannot be stopped. Investigation of IP telephony, and how it can better serve your employees, clients and vendors is vital in order to maintain an efficient and productive business.

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NetLojix, an elite network management company, is a single source provider of Enterprise Network Solutions integrating data, voice and Internet communications services and IT support.

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