



Fully Hosted/Managed IP Telephony

The Customer Value Proposition

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Introduction

Hosted IP Telephony Services are rapidly gaining market acceptance as a superior communications solution for the small/medium organization market and for large enterprises. According to a 2005 survey conducted by Computerworld, a full 24% of organizations polled had already deployed IP telephony, with another 27% actively implementing, testing or evaluating systems now and another 31% gathering data on IP telephony. In 2006, a survey sampled 600 heads of IT in business across seven European countries (UK, France, Germany, Italy, Spain, Belgium and the Netherlands). It focused on organizations employing between 251 and 1,000 staff members across a range of sectors including financial services, manufacturing, retail, public sector, IT and professional services. Over half (56%) of European organizations said they have installed IP telephony or plan to do so by 2009 – but this varied dramatically from 85% in the UK to just 42% in Spain. The earliest adopters of IP telephony were found to be in Italy and Netherlands – 29% and 19%. Cost savings is the most commonly cited benefit of installing IP telephony (70%), but almost 50% also highlighted ‘more productive working’ and ‘business efficiencies’ as top benefits. The fact that such a high percentage of the respondents are implementing VoIP technology leaves no doubt that organizations see the advantages of deploying VoIP technology. However, the advantages are different depending on what VoIP technology an organizations utilizes. The two main VoIP technologies currently implemented by organizations are hosted IP telephony and IP PBX. This paper focuses on the customer value proposition of hosted IP Telephony.

Voice System Technology

There are many voice technologies available to institutions including both traditional choices and choices involving newer technologies. Some traditional choices include Private Branch Exchange (PBX)/Key Systems and Central Office Exchange Service (Centrex). In the last few years, these traditional choices have been transformed to use IP versus traditional Time Division Multiplexing (TDM). The transformation to IP-based technology created two new options for institutions included Hosted IP Telephony and IP PBX. See Table 1 for descriptions of these voice technologies.

Technology	Description
PBX/Key Systems	PBX and Key Systems are telephone systems that serve one organization. Key systems typically serve a small institution while PBXs serve larger institutions. Both reside on the organization premise and is owned and maintained by the organization. Users share access to the trunk lines into the PBX or Key system from the service provider’s central office. Thus, it is not necessary for each user to have a dedicated line. PBX systems require a substantial cash outlay for the equipment and is therefore cost prohibitive for many organizations. Key systems are less expensive than PBXs since they serve a smaller number of users.
IP PBX	Similar to traditional PBX’s but utilizes IP as the transport mechanism. IP PBX is the latest generation of PBX’s allowing for organizations to converge both voice and data traffic at the premise. Similar to traditional PBX systems, the upfront cash outlay to purchase and install an IP PBX is significant and cost prohibitive for many organizations.
Traditional Centrex	Central Office Exchange Service (Centrex) is feature-rich local phone service offered to organizations by local phone providers. Institutions do not purchase a phone system with Centrex service. The service provider owns and manages all of the phone equipment necessary to offer the service. The service can be partitioned so many institutions can be served with the same equipment.

Table 1 – Voice Technology Options

Hosted IP Telephony

Hosted IP Telephony follows a model similar to traditional Centrex. The service provider owns and manages all of the necessary network equipment and hosts it in their Point of Presence (PoP), also known as data center. The service is delivered to the institution over broadband access from the service provider’s point of presence (POP). Virtually any broadband access technology will work including T1, DSL and Cable. The service provider can partition the equipment to serve multiple customers. This provides a cost-effective solution for service providers to offer a feature-rich service at very reasonable prices.

As depicted in Figure 1, the only business premise equipment needed for hosted IP telephony is routers or Integrated Access Devices(IADs) and either IP or analog phones. Analog or IP phones can be utilized but IP phones enable more features and functionality. IADs are necessary for analog phones and allow institutions to utilize their existing analog phones, modems, credit card machines, alarms and faxes, etc.

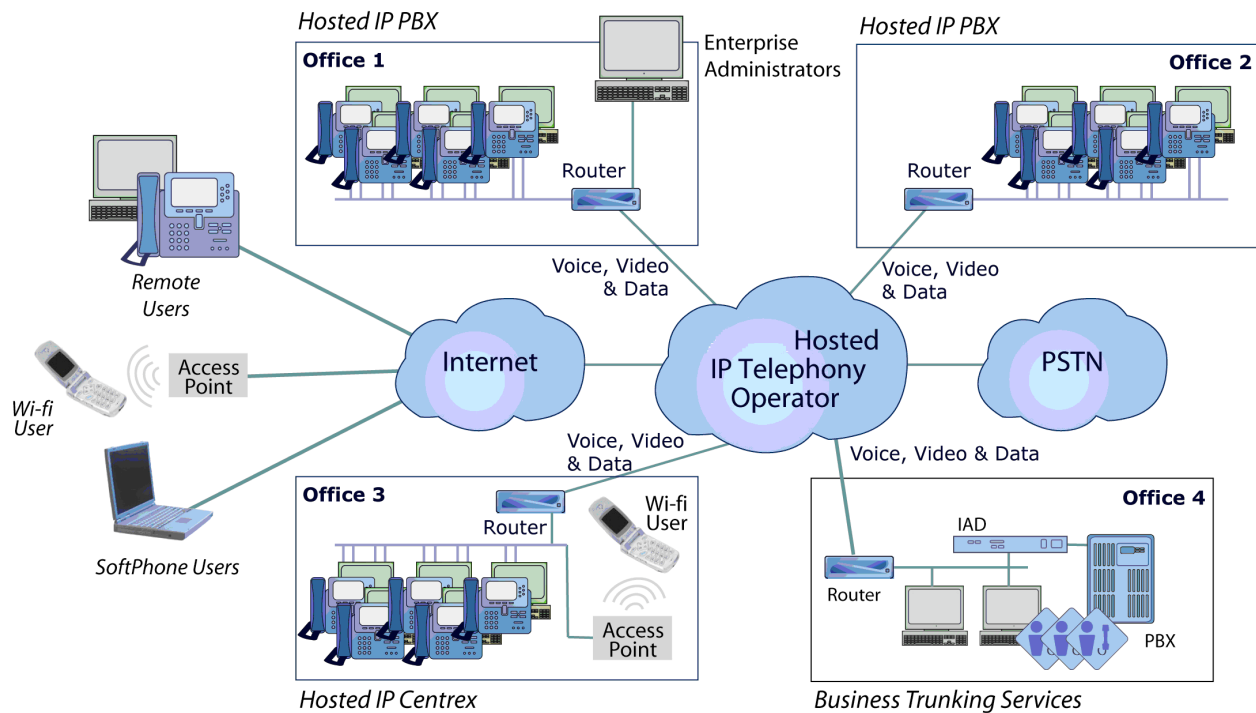


Figure 2 – Hosted IP Telephony Architecture

The Customer Value Proposition

The value proposition to organizations and end users varies depending on the technology. Hosted IP telephony offers some distinct value over IP PBX and traditional voice solutions. Table 2 summarizes the value propositions by voice technology.

Benefit	Hosted IP Telephony	IP PBX	Current PBX	Centrex
Low upfront capital requirements	√			√
Standards-based equipment that can be reused or re-deployed	√			NA
Low risk of technology obsolescence	√			√
Converge both voice and data on one access line	√	√		
Utilize unused or stranded capacity on existing access line	√	√		
One provider, one number for service and support	√			√
Simplifies Moves, Adds and Changes using easy-to-use user interface	√	NA		NA
Predictable, consistent monthly cost for service	√			√
Low network management requirements	√			√
Easily supports increasing/decreasing workforce	√	NA		
Professionally hosted servers in secure location	√			
End users have capability to reroute calls to any other phone, even if their primary phone is down	√	NA		
Enables feature-rich services for distributed workforces	√	√		
Remote workers have same capabilities as if in the office	√	√		
Easy rollout of new features and services	√			√
Includes features that increase users' productivity	√	√		
Reliability / Disaster Recovery	√			
Mobile Phone Integration / Mobility Features	√			

Table 2 – Comparison of Technology Options

The value propositions in Table 2 can be summarized into three separate categories:

1. **Financial Savings** - institutions can save a substantial amount of both capital and operating costs by deploying hosted IP telephony.
2. **Service Reliability** - voice network equipment residing in the service provider pop provides a high level of service and disaster recovery.
3. **Features, Functionality and Enhanced Applications** - IP technology enables features and applications that are not available with traditional technology. Positions the service provider as the single service provider for all the customer's telecommunications requirements (e.g., local, long distance, internet access, virtual private networks)

Each of these is explained in more detail below:



ADVANTAGE: Financial Savings

Financial savings is one of the primary benefits mentioned when discussing hosted IP telephony. The ability for institutions to go from two disparate networks for voice and data down to one converged network creates a substantial financial savings. These savings are for both capital and operating expenses.

Capital Expense Savings

Low Capital Requirements:

Hosted IP telephony has very little capital a requirement if a data network already exists. In particular, IP phones or IADs are the only capital expenditures necessary in most cases. In comparison, PBX technology requires large capital outlay for the PBX servers along with the required phones. For this reason, many institutions decide to avoid the upfront capital-intensive IP PBX or PBX solution and utilize a hosted IP telephony solution from their local phone provider.

Standards Based Equipment:

The equipment necessary for hosted IP telephony is standards-based. Standards-based equipment can be reused or re-deployed to work with other equipment that supports the same standards. It also offers more flexibility and options from a variety of vendors, typically at lower costs. IP PBX or PBX solutions have proprietary equipment that can only be used with particular vendors IP PBX or PBX. This prohibits proprietary equipment from being reused or re-deployed in most circumstances. It also results in an inflexible solution with limited equipment choices and higher equipment prices.

Low Risk of Obsolescence:

Technology changes at such a rapid pace that it is common for equipment to become quickly obsolete. Hosted IP telephony helps to reduce the risk associated with technology obsolescence. First, since the amount of necessary equipment is low, the risk also remains low. Second, the risk of obsolescence shifts to the local phone provider since they own and manage the voice servers. Third, IP PBX and PBX systems can be easily outgrown as the organization grows or downsizes leaving few alternatives. Hosted IP telephony allows institutions to grow or shrink their number of lines as their organization grows so this is never an issue.

Operating Expense Savings

Converged Access Lines:

The convergence of two networks down to one converged network can save on the number of necessary access lines and subsequently costs. In most cases, current voice traffic and data traffic utilize two separate T1 lines. After converging the two networks into one, one of the T1's can typically be dropped or used solely for backup purposes. In either case, access costs can typically be lowered. The same can be said for any data transport service including DSL, Cable, etc.

Utilize Stranded Capacity:

In certain circumstances, converging voice and data can assist in eliminating 'stranded' capacity. This is capacity that is not being consistently utilized and therefore wasted. Adding voice onto an existing T1 line will increase the traffic and utilize the stranded capacity. This makes the existing infrastructure more cost effective.

One Provider, One Number:

Hosted IP telephony allows institutions to receive both voice and data service from one service provider. One number for questions or support is utilized for both. This helps to simplify the support process and reduce the number of necessary support personnel.



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Simplified Moves, Adds and Changes:

One of the biggest expenses incurred by dynamic organizations is moves, adds and changes for phones (MACs). Traditional phone systems required intensive efforts every time an employee moved offices or locations. IP-based technology simplifies this process and can easily be performed by the enterprise administrator through a point and click web-based interface. Many changes can be accomplished by the users themselves. The result is that a MAC takes a few minutes and no expense rather than paying an expensive technician hundreds of dollars to perform MACs.

Predictable Monthly Expenses:

Hosted IP telephony allows institutions to know exactly what their telecommunications costs will be each month. There are no unexpected costs associated with software upgrades or hardware maintenance. This makes monthly budgeting very predictable and easy.

Low Network Management Requirements:

Network management is the responsible of the hosted IP telephony service provider. This frees the institution from the responsibility of ensuring the system is running as intended and from dealing with problems as they arise. An institution utilizing a PBX solution maintains network management responsibility itself and thus must have the appropriate personnel and procedures in place to effectively solve problems with the system.

Flexible to Organizational Changes:

Today's workforces are constantly growing and shrinking, creating problems when using traditional phone systems. In most cases, organizations must buy more ports than necessary with limited options if their workforce shrinks. Traditional solutions may not easily expand if the workforce increases over time. Hosted IP telephony services allow institutions to buy only what they need with the ability to add new lines when necessary. Institutions only pay for the number of lines needed at that time and can add or shrink the number of lines easily.

ADVANTAGE: Greater Service Reliability

The ability to communicate with customers, vendors and colleagues is a critical element of success. For this reason, voice reliability cannot be compromised. Hosted IP telephony has been engineered with this in mind and modeled after traditional services. In fact, hosted IP telephony has distinct reliability advantages over both traditional voice and IP PBX services.

Professionally Hosted:

Few organizations would consider themselves expert in hosting servers or phone systems. PBX solutions require organizations to do just that – host their own phone system on their premise. If something goes wrong, the organization is responsible for correcting it. Given the importance of communication, this creates a large burden on the institution to be prepared for the unexpected. In contrast, hosted IP telephony relieves the institution from this responsibility. Since the local phone provider owns and manages the server equipment, the institution never has to worry. In addition, most would agree that the local phone provider has the skills, personnel and knowledge to professionally host servers compared to most institutions.

End User Control to Re-route Calls:

The most common problem with any voice solution is access line failure. Referring to Figure 1, if the ‘Access’ portion of the network fails, users have different options depending on the type of voice solution utilized. Hosted IP telephony provides the greatest amount of options and flexibility. If the access portion of the network fails, it does not have an impact on the servers in the service providers POP. Everything up to that point works the same except in the case of access failure, the system will automatically route all calls to the users voice mail. In addition, users can easily reroute calls to an alternative phone, re-assign their phone number to an alternate location or enable Simultaneous Ring services to ensure incoming calls are answered even in a disaster situation. Only hosted IP telephony gives users this much flexibility when access lines fail. With IP PBX or PBX technology, the user’s phone will not work (for external calls) and their options are very limited since the server resides on the business premise connected to the failed access line.

Disaster Recovery:

Similar to problems in the access portion of the network, users have a variety of options in case of disasters if utilizing a hosted IP telephony solution. In the event of fire/earthquake/severe weather, users have the ability to reroute all their calls to their wireless or home phone. The hosted IP telephony solution can also be set up to automatically make these changes for users in the case of a disaster resulting in phone failure. The location of the servers in a hosted IP telephony solution is also a critical aspect. Service provider POPs are secure facilities built to withstand more than traditional office buildings. For this reason, servers in a POP have a higher chance of surviving a disaster and maintaining service than a PBX sitting in a businesses office complex. Even if a customer’s location is destroyed by a disaster, users will have phone service or the flexibility to obtain phone service.

ADVANTAGE: Features, Functionality and Enhanced Applications

IP-based voice solutions enable many features, functionality and enhanced applications that are not possible with traditional solutions. Financial savings and service reliability are critical in the decision to move to hosted IP telephony, the additional items are what organizations learn to appreciate more after using it over time.

Cohesive Services for Distributed Workforces:

IP-based voice services break down the boundaries associated with traditional service. Since traffic can be routed to any locations connected to the network, functions that use to be tied to a particular location can now be distributed out to multiple locations. For instance, a call center can now be centrally located and support users geographically dispersed or support multiple locations. This allows call center agents to work from any location – even from home. In addition, one single voice mail system can serve a group of users in different locations. This not only saves money by only having to utilize one voice mail system but also allows all users to share the same voice mail system. Likewise, business groups can office in various locations and use extension dialing saving the institution money previously spent on inter-office communications while still ensuring emergency and local dialing plans remain intact.

Support for Remote Users:

More and more users want the ability to work effectively from home or while traveling. At the same time, institutions gain from remote employees by reducing the required real estate and increasing employee satisfaction. Hosted IP telephony enables remote users in a variety of ways:

- Users with a broadband connection can plug in their phone and the same features available in the office are now available remotely.
- Users can access a web portal for their corporate directory, view call logs, setup find me services, schedule and hold conference calls or even listen to their voice mail.

These features provide the means for remote users to effectively work while at home or traveling.

Easy Rollout of New Features:

As new features become available on the hosted IP telephony platform, the local phone provider can automatically make them available to institutions. This is done without performing any truck rolls or installing any additional equipment at the customer premise. IP PBX or PBX solutions typically require at least a software upgrade by the institution just to get the feature available. They must also implement the feature throughout the institution themselves. Again, the burden is placed on the institution to perform tasks the service provider does in a hosted IP telephony solution.

Mobile Phone Integration / Mobile Features:

As enterprises increase the number of company paid cell phones and smart-phones, few phone systems today allow integration with desktop productivity tools using the employee's published telephone number. Hosted IP Telephony applications allow employees with a browser-enabled smart-phone to access their end user portals and click to call co-workers via WiFi access when available in the enterprise saving the institution cell plan minutes. Employees are readily accessible to clients and co-workers and can enable/disable call routing functions and features for their number. Employees with traditional cell phones can use simultaneous ring services for incoming calls, as well as utilize web portal dialing with their cell number as a remote/alternate phone accessing all their web portal click-to-call functions, listen to voice mail and join / link others into conferences. Employees can also use the Call Jump feature to seamlessly move an active call between their organization or home line to their cell phone and back as needed.



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End User Productivity Features:

Some enhanced features enabled by IP-based voice solutions include:

- Unified messaging – ability to have your voice mails sent to your Email box. This allows a user to listen and then file or forward to others the voice mail.
- Click-to-dial – users can dial directly from the Web Portal corporate or personal directories, call logs, visual voicemail, or Microsoft Outlook™ simply by clicking on the contact. Click-to-dial from the Web Portal also can be used to conference together two or more parties.
- Find Me – users set up a profile of where they will be throughout the day. For example, from 8-12 they can be located at their office number, from 12-1 they can be located on their cell phone and from 1-7 they will be at their home office location. The system will automatically call the appropriate number based on the time. The caller always has the opportunity to leave a voice mail. This helps users never to miss an important call.
- Meet-Me Conferencing – users be invited to join a dial in conference line to increase productivity for a project. Web Portal users can visually see who is on the call via Floor Control that Moderators can control the call through. Users can raise hands to vote or speak when all lines are muted. Many enterprises pay large monthly expenses to 3rd party solutions that service providers can package as an additional revenue stream.
- Call Jump – users can move or “jump” an active call to an alternative phone number (home, mobile, office, and so forth) even if the numbers are sourced from multiple vendors. Unique codes can be assigned by the user for each of their phone numbers. This feature is particularly convenient for fast-paced users allowing dynamic control of active calls without access to a PC.

Many other enhanced applications are available depending on the solution implemented.

Conclusion

The last few years have seen voice technologies move from traditional TDM solutions to IP-based solutions. IP-based solutions enable a variety of benefits to institutions and end users. Hosted IP telephony is an IP-based solution that provides unique benefits to institutions and end-users. From the business perspective, it alleviates the pains associated with installing, upgrading and maintain hardware and software necessary with IP PBX or PBX solutions. The local phone service provider does everything. Institutions receive great, feature rich service without incurring any headaches themselves.