



Revealing the Myth of IP Telephony

White Paper

"Early marketing stories heralded IP as the great cost cutter. Yet, while IP certainly can help to do this on the OPEX side, many enterprises could be forgiven for wondering why, if they weren't yet ready for an upgrade, they should abandon a perfectly good PBX for an 'unproven' technology based on shifting standards with niggling security concerns."

Business Insights

In this paper, we look more deeply at what a business will actually get when they deploy IP Telephony and what the additional items are that are needed to deliver the benefits they are being sold.

Management Overview

We have all read the marketing blurb and seen the case studies and many IT directors are firmly convinced that IP Telephony is going to solve all their future communications problems. They will be able to have voice services on a single IP network with enterprise and user communications management portals. The IT staff will enjoy effective, centralised management of inter-office dialling and reduced network complexity. As a result of the IP installation, employee productivity will improve through the use of consistent, advanced features for every user in the company.

Many believe that, once installed, IP Telephony will deliver all the applications to achieve these benefits for free – unified messaging, conferencing, single numbering, virtual PBX every application included within the cost of the IP infrastructure.

The truth is very different. The delivery of an IP PBX or Hosted IP Telephony solution will give you the potential to have all these things but will not automatically deliver all these IP application features and their related benefits to your organisation. Moreover, many of these capabilities could be delivered to your users *today* over your TDM or mixed IP/TDM infrastructure allowing you to migrate to IP in the network when best suits your business.

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The IP Potential

APPLICATIONS: An IP Telephony network has the potential to deliver multiple service options and feature packages with a rich choice of end-user and enterprise features and management portals. Telephony enterprise functionality such as conferencing, call recording on-demand, unified messaging, SMS from the desktop, fax-to-email and voice-to-email are all telephony enhancing applications that can be deployed once you have IP Telephony. But they are all separate applications and, in most cases, are individually priced and applied to your system with configuration, setup and maintenance concerns and costs in exactly the same way as they existed for your traditional PBX.

The benefit of IP is that you can choose the supplier for many of these applications rather than being tied to the PBX manufacturer. IP means that a-la-carte enhanced features such as collaboration services with options for integrated voice messaging, ACD/call centre capabilities, team working, conferencing, auto attendant, and IVR solutions and software-based consoles can be selected from the IP PBX manufacturer or from alternative specialist suppliers. IP means you will never experience a problem with being locked in to a specific supplier for these services. It does not mean that all these services are provided as standard by all IP Telephony manufacturers. Most vendors will have a roadmap showing if and when they will be introducing these capabilities.

INTEGRATED VOICE AND DATA NETWORKS: The promise of IP is that having a single IP network rather than an IP network for data and a separate voice network will simplify your network management and utilize bandwidth more efficiently. For an IP network to support voice, data and even video traffic, it will require a robust quality of service (QoS) system to ensure that time sensitive traffic, such as voice or certain database systems, is prioritised over and above the

day-to-day data traffic on the network. QoS enables proper prioritisation of voice, Internet and data traffic, ensuring appropriate bandwidth is available for each application at all times. To achieve this prioritisation, all packets on the network will be limited in size, creating greater network overheads from the more numerous packet headers. This will use additional bandwidth on the network. In addition, the QoS system will increase network management complexity.

FLEXIBLE CONNECTIVITY OPTIONS: An IP network will increase your choice of wide area options providing support for ISDN, E1, E3, Ethernet, Fast Ethernet, or Gigabit Ethernet connectivity. The benefits of this flexibility are significantly limited by the increasing popularity and reducing prices of SIP Trunking. Pricing today is making use of SIP trunks the most economic option, removing the need for multiple direct wide area network connections.

REDUCED CAPITAL EXPENDITURE: Use of hosted services to complement your IP Telephony system will alleviate the need for investment in a full on-premises system. This benefit exists for both IP and TDM systems and applies to both the telephone switching functionality and to the value-add applications.

REDUCE OPERATIONAL COMPLEXITY: With IP, IT managers can carry out all move, add, change and delete (MACD) operations and configure user telephony features simply and centrally through a single web portal interface.

ENHANCED EMPLOYEE PRODUCTIVITY: The additional productivity is gained from applications such as unified messaging, find me-follow me, SMS from the desktop, voice-to-email, fax-to-email, click-to-dial, and web portal control. These can be enabled by IP Telephony but they are also available as applications to run over your existing TDM-based architecture and can be provided as either on-premise server-based applications or as hosted services.

ENABLE ALL LOCATIONS WITH ADVANCED FEATURES: IP Telephony is a way to bring cost-effective and consistent access to advanced features at remote locations. But these services can also be provided as applications to run over your existing TDM-based architecture and can be provided as either on-premise server-based applications or as hosted services.

SECURITY AND PERFORMANCE: Security and performance in IP requires traffic management, for instance, ensuring all traffic rides on a private and secure MPLS network that provides industry-leading, end-to-end QoS, and low latency performance. The costs and complexity introduced by the IP network needs to be included in your calculations of the cost of deploying and operating the IP network.

The Myth Exploded - True Costs and Issues

Once we go to IP all our problems will be solved

Some of your old problems should be solved - but you will have a whole new set to contend with! I am not suggesting that companies should not move to IP, after all the new and exciting applications that will deliver benefits to your business are enabled by IP. But you do need to approach the move with your eyes open and to understand that a move to an IP infrastructure does not automatically deliver the benefits of applications enabled by IP. More the move is not needed in order to deliver the benefits of those applications – they can be delivered over your existing TDM or hybrid infrastructure.

MYTH OR TRUTH?

With IP Telephony we will get so much more included within the cost of the IP infrastructure

Many applications will still be chargeable with IP Telephony, although prices are falling rapidly as acceptance of these applications has increased. Some vendors offer 'enterprise licenses' which include a wide range of applications, but these prove an expensive option as there may be a lot of duplication with other systems and not all applications will be required for all users.

MYTH OR TRUTH?

The new IP network will be less expensive to support and manage

If you move all your telephony to IP, avoiding any silos of traditional telephony in the business, then you will have a single network to support and maintain. So your staff only need to understand one network and one set of protocols. But it is a single complex data network with issues of QoS, latency and performance and the additional resilience and security issues introduced by having all your voice and data traffic on a single network.

MYTH OR TRUTH?

In a converged voice and data IP network, bandwidth will be less expensive

It is true that your cost per Mbps of bandwidth will reduce and your ability to grow the network in easy increments will increase. It is also true that you will 'waste' less bandwidth since your spare capacity overhead on the lines to accommodate peaks and troughs in usage will be common bandwidth. However, IP telephony voice actually uses more bandwidth per conversation for the same voice quality, so you will probably be using one of the compression techniques to reduce the bandwidth needed for voice which may have an impact on voice quality.

MYTH OR TRUTH?

IP Telephony will deliver the applications I need to improve business productivity

IP networks will enable use of common applications by all staff on the network. Of course, you could have done this anyway, using gateways to traditional network areas, but it will be easier for everyone to get to the same applications and services. However, you will still have to select, purchase, deploy, manage and upgrade these applications as part of the ICT function. IP-PBX and hosted IP Centrex feature sets will still be vendor specific, as they always have been, and vendors will charge for additional applications such as unified messaging, presence, outlook integration, voicemail and fax-to-email. The quality of these applications will vary from vendor to vendor and, today, many vendors' solutions offer only the most basic of application features compared to specialist application providers.

MYTH OR TRUTH?

The system will be evergreen and no further upgrades will be needed

IP Telephony is not by default evergreen. This impression is provided by the fact that the IP network can provide the transport infrastructure for a host of new and applications. However, applications with new and increasingly powerful features will still be introduced and part of the ICT function is going to be selection and deployment of these new applications. For best value, you still need to invest in software maintenance to keep the applications up to date without having to pay for the next new feature. In fact, this is a deliberate policy of many hardware vendors as

they see this move to supplying applications with a license and maintenance aspect as a good opportunity for ongoing revenue and an area of the market they have not previously had the credibility to work in.

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