

I D C E X E C U T I V E B R I E F

Beyond Toll Bypass: Assessing IP Telephony's Total Cost of Ownership

May 2006

Adapted from U.S. Hosted IP Voice Services 2004–2008 Forecast: VoIP Invades the Enterprise by Mark Winther and William Stofega

IDC #31825

Introduction

Deployments of enterprise Internet protocol–based telephony (IPT) at larger companies with multiple branch offices have been steadily increasing, confirming the scalability as well as the value proposition embedded in IPT solutions. The current business case for IPT at branch-office locations is centered on total cost of ownership (TCO), which has superseded the traditional emphasis of direct cost savings from toll bypass between office branches. Voice services over IP networks are being measured by the value resulting from their integration with enterprise networks and applications rather than by the traditional view of cost per minute to end users. This Executive Brief examines the economics of and TCO advantages derived from IPT at branch locations and the considerations still surrounding IPT implementation.

IP Telephony and the Far-Flung Enterprise

IP-based phone systems have finally reached — and are quickly surpassing — a level of service comparable to that of traditional telephone equipment. It is now difficult to deny that IP telephony has the ability to provide far more services and much greater scalability and flexibility than traditional voice systems. Data networks are ubiquitous in the enterprise, and it makes economic sense to take as much advantage of this investment as possible, particularly for larger, far-flung organizations with multiple branches.

Examples of these enterprises include national retail chains and financial services companies. The most forward-looking organizations among these firms are identifying strategic objectives for their branch offices and mapping telephony requirements to those strategies. Because these firms are often constrained by tight operational budgets, they are looking to IPT deployments for a range of cost advantages that translate into lower TCO for their branches.

Many enterprises make the mistake of trying to justify an IPT deployment for branch-office locations by centering on a narrow, traditional view of TCO, which focuses on the "day one" cost of the equipment and installation services, as well as some "conspicuous" TCO elements such as toll bypass and lower move, add, and change (MAC) costs. As a result, many organizations are missing important "inconspicuous" cost or savings considerations in their TCO analyses, leading to either decisions that delay the delivery of the benefits of IPT or vendor selections that could bring about less-than-satisfactory results for the business.

TCO Factors

TCO factors can be categorized into two basic types: 1) immediate and conspicuous factors such as lower purchase, installation, and maintenance prices for IPT equipment and 2) further removed, inconspicuous factors such as network upgrade costs.

Conspicuous TCO Factors

Conspicuous TCO factors include the following:

- **IPT trunking, or toll bypass**, enables enterprises to connect directly to their branch offices, bypassing toll charges. Also, service providers are able to offer reduced domestic and international rates to phones outside their networks.
- **Easier MACs** reduce labor and equipment costs. Traditionally, MACs involved considerable labor and equipment — for instance, an additional PBX extension might cost a couple hundred dollars, whereas IP telephones can easily be plugged into an IP network without additional cost.

When organizations have IPT on their data networks, employees can unplug phones, plug them in at a different location, and be instantly connected. Some traditional systems have introduced Web-based interfaces to make the process more efficient, but IPT goes far beyond these new capabilities.

The clear implication of easier MACs is that IPT infrastructures have the flexibility to more cost-efficiently support expansion and change within organizations. In the longer term, savings from this greater cost-efficient flexibility will come from a confluence with the trend toward increasingly distributed and operationally dynamic workforces.

Inconspicuous TCO Factors

A number of other TCO factors, however, are associated with the installation and maintenance of IPT systems that branch organizations must account for to gain a comprehensive cost picture of system ownership. These factors may be categorized as inconspicuous TCO and include the following areas:

- **WAN costs.** Enterprise customers may need to upgrade or fine-tune WAN services to handle the requirements of voice on a converged network. Upgrades could include adding bandwidth and configuring traffic shaping for frame relay and ATM-based networks.
- **WAN equipment costs.** Some existing WAN equipment can certainly be used to deliver the VoIP, but adding security and call admission control will require some upgrades. Enterprises should determine whether a particular vendor requires a router upgrade for its voice solution to work or whether the IPT solution has capabilities that will enable enterprises to avoid the cost of the upgrade.
- **Intelligent routing/multipath call routing** is an advantage of IPT that minimizes costs while maximizing quality. When calls are made, they are routed to the best call-completion rate path, which could be packet switched or circuit switched, while also optimizing quality. Intelligent routing also allows fall-back routes to be specified when the network is congested.
- **Converging voice with data** consolidates equipment and management costs. With the combined use of PCs and headsets, physical telephones have become optional. Also, when organizations have a single network to manage and support, fewer boxes may be needed and capital expenditure (capex) costs may be reduced. Hardware upgrades could improve the voice and data systems simultaneously, although this approach may have some drawbacks, depending on the systems in use, especially if an upgrade of the "data" equipment impacts the availability of the voice application to end users.
- **Local trunking costs.** An IPT solution may either increase or reduce the number of local trunks. Many enterprises find that by leveraging their WANs and centralizing call control, they can reduce local trunking, which can result in significant cost savings in large branch networks.
- **LAN costs.** Organizations that opt for IP telephony solutions often need to ensure that their LANs comply with certain quality-of-service (QoS) requirements. These requirements can translate into a LAN equipment upgrade or software upgrades, which in turn can offset the capex savings that IP telephony achieves versus traditional phone equipment. However, consolidating data and voice onto a single pipe can reduce capex and operational expenditure (opex) costs. Enterprises should consider the impact of each vendor's solution on the existing LAN infrastructure. If implementing the new solution requires a LAN upgrade, the cost of such an upgrade should be factored into the TCO of that solution. Likewise, if a vendor offers options that allow customers to avoid LAN upgrades, the TCO advantages of such a solution should also be considered.

- **Standalone versus centralized call control.** IPT networks can be managed centrally and distributed to branches, reducing requirements for dedicated network/IT staff at each location. For many reasons, enterprises tend to initially deploy IPT in a standalone manner (each branch having its own call control software) with a plan to centralize call control over time. From a TCO perspective, enterprises need to consider how a particular vendor's solution would look before, during, and after a transition from standalone to centralized call control, especially enterprises that expect to require advanced applications over time.
- **Headcount versus outside vendor costs for managing the IPT environment.** Often, IPT can help companies eliminate or reduce the costs associated with outside vendors by leveraging the centralized management tools that IPT systems generally employ. However, if an enterprise wants to take on the task of managing these systems internally, it needs to consider the cost of any travel that may still be required when an internal resource must go onsite and the cost of that resource's time to the organization. In addition, technical staff members who are more knowledgeable about QoS issues and support may be needed, which could lessen opex savings. Overall, the number of IT employees may be reduced or the employees may be reassigned. Enterprises that want to take more of a role in managing their IPT networks should carefully examine the technical skills and time required to support each vendor's solution.
- **Other inconspicuous TCO factors.** Anecdotally, IDC has found many other inconspicuous factors that should be accounted for by enterprises considering IPT for their branches. They include the costs associated with:
 - Tools needed to manage the new environment
 - Downtime for patches and updates
 - Securing the solution
 - Additional application servers in the environment that can be reduced/eliminated
 - Lowering the cost of supporting mobile employees

As with the other inconspicuous TCO factors mentioned, enterprises need to consider all these elements as they build their IPT business cases. In particular, carefully examining how different vendors' solutions impact these inconspicuous factors will help enterprises differentiate and choose the best solution for their specific needs.

Considerations

At present, many IP telephony deployments come from greenfield deployments and end-of-life PBXs because enterprises don't want to write off their investments in traditional telephony. As companies come to their end-of-life or end-of-lease time for traditional phone systems, however, many are evaluating IP telephony solutions among their options. Some single-site companies will not have as large a portion of operational savings as multisite corporations; therefore, their TCO will not be strong enough to justify the investment.

Similarly, companies typically upgrade their LANs and WANs every four to five years, and many firms that had upgraded networks in 2000 are now due to upgrade again. During the evaluation period of a LAN/WAN upgrade, companies investigating the possibility of deploying IPT need to take into account the aforementioned "inconspicuous" TCO factors.

Conclusion

IDC believes that IPT technology will likely progress faster than the market is willing to adopt it. Budget-conscious companies will continue to seek incremental solutions toward IPT adoption.

Organizations will need to modify their ROI models — and likewise expect IPT vendors — to define more than just cost-savings factors. Because some implementation infrastructure costs may offset initial savings, customers will need to identify other attainable business benefits that will either significantly increase employee productivity or increase revenue-earning potential, even though these types of benefits are often difficult to quantify.

IDC demand-side research suggests that enhanced features continue to play a central role in the decision to purchase IPT solutions. IDC believes that branch organizations stand to gain the most TCO benefits in the long term from integrating IPT with industry-specific applications tied to core business processes.

COPYRIGHT NOTICE

The analyst opinion, analysis, and research results presented in this IDC Executive Brief are drawn directly from the more detailed studies published in IDC Continuous Intelligence Services. Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from IDC. Contact IDC Go-to-Market Services at gms@idc.com or the GMS information line at 508-988-7610 to request permission to quote or source IDC or for more information on IDC Executive Briefs. Visit www.idc.com to learn more about IDC subscription and consulting services or www.idc.com/gms to learn more about IDC Go-to-Market Services.

Copyright 2006 IDC. Reproduction is forbidden unless authorized.