

Achieving a Successful IP Telephony Transition

*Leveraging Analytics to Intelligently
Move Voice to the Data Network*

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Overview

Establishing a plan to transition voice communications to the data network is a complex process with many uncertainties. Analyzing historical call volume and circuit use, assessing the impact of adding voice to the data network, calculating the expected total-cost-of-ownership (TCO) and minimizing enterprise-wide risks are significant challenges.

Without the right information, IT directors are forced to make poorly informed decisions that can directly affect the future of corporate communications.

How can IT increase the likelihood that a transition to IP telephony is successful in the near- and long-term? Are there tools that can model existing voice communication patterns and help identify what is needed for voice and data network convergence?

To address these challenges, businesses are turning to products that analyze the current voice communication environment and the readiness of the data network to support real-time voice applications. Beyond simple data gathering and reporting, analytics identify and present useful information to aid in the decision making process.

This paper will examine some of the challenges businesses face when planning their transition to IP telephony and will reveal the many advantages of using analytics before, during and after the convergence process.

Convergence Trends

More companies are demanding a measurable business value prior to IP telephony rollouts.

At virtually every enterprise, IT professionals are expected to prove the business value of voice and data convergence prior to adoption. Research by the Aberdeen Group found that lack of knowledge and a poor business case are two primary obstacles preventing the successful implementation of unified communications.¹

Stories of challenging IP telephony implementations are fueling the need to quantify a business case. For example, recent research revealed that nearly 40 percent of businesses implementing IP telephony identified configuration complexity as the main issue preventing successful transition.²

Aberdeen Group found that for companies examining IP telephony, five primary challenges stand in the way of implementation: security, business justification, interoperability, cost and measuring a return on investment (ROI) (see Figure 1).³

¹ Aberdeen Group. (December 2006). Beyond Dial-Tone.

² Holland, M. (January 2007). *IT Pro*. No pain, no VoIP gain for businesses.

³ Aberdeen Group. (December 2006). Beyond Dial-Tone.

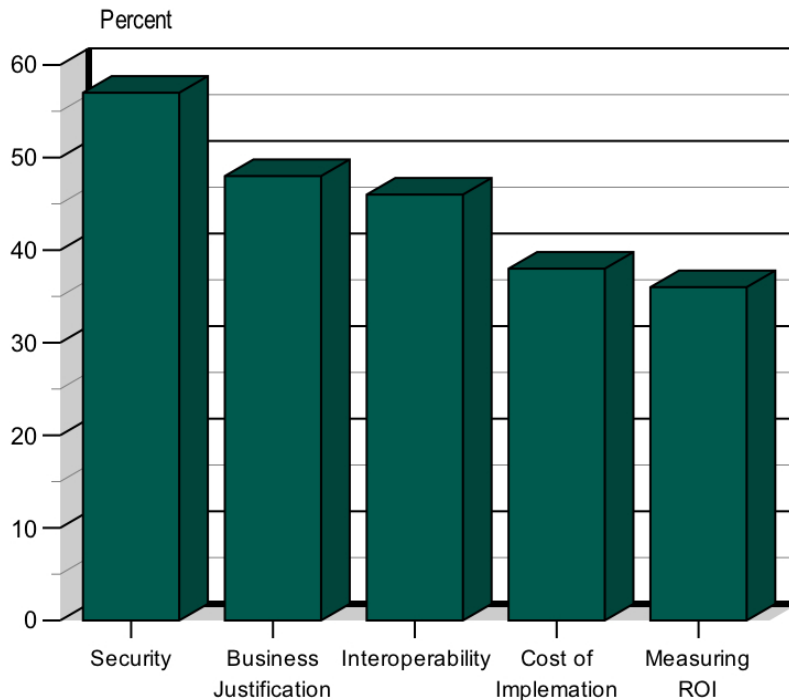


Figure 1: This chart reveals the key challenges IT faces when converging voice and data networks.⁴

According to Gartner, Inc, "Fully 85 percent of existing networks can't handle VoIP traffic and 75 percent of enterprises that don't analyze their IP network infrastructure before deployment won't see a successful VoIP implementation."⁵

With many vendors offering IP telephony solutions that do not interoperate with either the existing legacy voice equipment or other IP telephony products, managing the process is "an increasingly convoluted issue with no easy solution," said Frank J. Bernhard, managing principal and technology economist with OMNI Consulting Group. He explained, "Finding an integrated solution that offers an aggregated and holistic view of the voice network is immensely difficult."

Frost & Sullivan analyst Krithi Rao said, "Given the current state of the enterprise telephony market, most enterprise customers are requiring unified management of disparate IP/TDM PBX systems and environments, which requires the normalization and correlation of data." Thus, solutions are needed that can examine telephony data across many vendors. Converged communication management solutions that leverage analytics are helping meet these needs.

Challenges Slowing IP Telephony Rollouts

Today's IT departments face three central problems when planning for IP telephony: establishing the business case, evaluating voice use and determining voice's impact on the data network.

⁴ Ibid.

⁵ Musich, P. (December 12, 2005). *eWeek*. Dodging VoIP Predeployment Pitfalls.

Establishing the Business Case

Developing the business case is often a complex and time-consuming process that goes beyond the comfort zone of IT.

IT must prove that converging voice and data will result in reductions in operating expenses. Correlating cost structures, bills, traffic flow and call routing is difficult. With potentially hundreds of independent circuits to many remote offices, where does the analysis begin?

Often, IT must create complex spreadsheets and manually call carriers to begin to tackle such tasks. Expensive consultants can also be hired to help establish the business case. Regardless of the method, the result is a time-consuming process.

Evaluating Voice Use

Collecting concurrent call patterns, traffic routes, use patterns and costs of calls is a complex process.

Voice management is historically outside of the domain expertise of IT directors. Moving voice to the data network means IT must first understand existing voice patterns. This involves much more than just determining the number of employees between two locations. Concurrent calls must also be examined. Other important considerations include home-based employees and mobile workers.

To properly analyze voice usage, every carrier must be contacted, all routes must be identified and concurrent calls based on time and day must be examined. In addition, it is important to look at the costs of calls and quality of service. Sites where quality must be exceptionally high should also be identified as possible locations NOT to convert to voice-over-IP (VoIP).

Determining Voice's Impact on the Data Network

Voice's impact on the data network and business applications must be carefully examined.

Before voice is converged onto the data network, a detailed analysis must be performed to determine if the network can accommodate voice traffic. Because voice is a real-time application, performance must be guaranteed. An inventory of existing data consumption, routes and peak performance requirements can help reveal the remaining available bandwidth for voice.

Because voice and data will be competing for resources, it is important to understand application bandwidth requirements and how they can impact quality of service. To perform these types of analyses, IT often outsources the project to costly consultant firms. It is not uncommon for an analysis to take a year or longer.

Other Challenges

A number of other questions emerge when planning to move voice to the data network. When a major business application slows because of a spike in call volume, what can be done? When calls are dropped, how can IT respond? Will troublesome user experiences create a drain on the IT department?

Issues such as compliance, security and cost controls should also be considered. For compliance, will digital voice traffic need an audit trail, similar to e-mail? How secure is voice data? Can it be hacked? Is it safe to warehouse unencrypted voice? Are privacy issues a concern? Can savings be easily determined? How long will it take to achieve an ROI? How can voice be cost-allocated to departments?

History

The consumer acceptance of voice over the Internet spurred the beginning of IP telephony in businesses.

The movement of voice to the data network is not new. In the late 1980s, toll bypass was introduced. It allowed calls between locations to be routed over the Internet, avoiding long-distance fees. In the mid-1990s, the consumer use of Internet calling and Internet phones began. Although the quality was poor, consumers enjoyed the ability to place free calls.

By the late 1990s, manufacturers such as Cisco and Nortel developed switching hardware that could convert voice into data and vice versa. Reliability was rather poor in the beginning. Eventually, IP telephony made its way into call centers, allowing employees to answer customer calls from their homes.

Over the last few years, the business community has concluded that the advantages of IP telephony are worth an ongoing investment. This has resulted in the movement of very large numbers of employees to IP telephony. Now, the network must be more reliable than ever before.

Today, there are more than 100 vendors offering IP telephony equipment. Unfortunately, a lack of interoperability between vendors and a mix of standards create a very challenging situation. Managing different switches in different buildings that were implemented over time or came with an acquisition can be a daunting task.

Aberdeen Group explains, "Best-in-class organizations measure communications service availability, audio quality and capacity performance in real-time or on a daily basis."⁶ Converged communication analysis tools serve as a platform to help address each step of the transition to a converged voice and data network, and provide ongoing quality measurements.

The Solution: Converged Communication Analysis

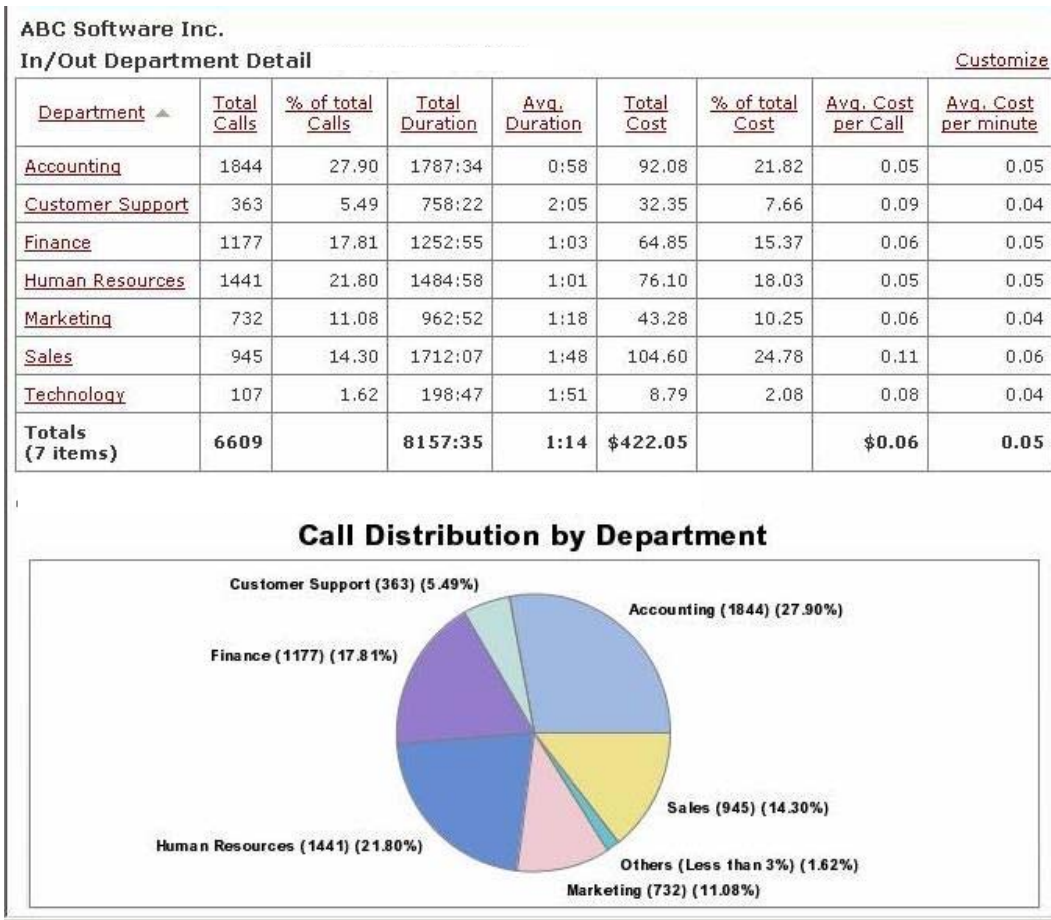
Converged communication analysis solutions conduct a detailed assessment of voice and data networks to help IT establish a business case for moving to IP telephony.

Designed to help IT directors establish a business case for IP telephony, converged communication analysis solutions collect, analyze and present usable communications information. These applications provide a comprehensive view of current voice and data communications, revealing what is necessary for an IP telephony rollout.

For example, call records are collected from PBX phone equipment, the data network is monitored and simulations are performed to determine the impact voice will have on the data network.

Converged communications analysis solutions also provide ongoing monitoring and analysis of the converged network to ensure quality of service.

⁶ Aberdeen Group. (December 2006). Beyond Dial-Tone.



The key components of a converged communication analysis solution include:

- **Performance Monitoring:** Traffic studies help benchmark existing circuits to determine call concurrency, capacity and call flow patterns to establish bandwidth requirements. Once IP telephony is implemented, voice quality is measured to ensure standards are met.
- **Cost Control:** Call detail records from carriers are analyzed to help determine costs, historical trends and forecasting. After IP telephony rollouts, expense management helps IT to allocate voice costs to departments.
- **Security and Compliance:** Analytics produce a complete audit trail for TDM and IP communications devices. In addition, analysis can provide pattern exceptions, such as toll fraud abuse and unknown applications or devices on the network. A mechanism is provided for rules-based alerts and notifications, such 911 calls.

Benefits of Converged Communication Analysis

Converged communication analysis solutions help establish a business case for IT telephony by measuring call use and determining voice's impact on the data network.

When IT leverages converged communications analysis solutions, a number of significant benefits result.

- **Empowers IT to establish a business case:** Without costly consultants or complex spreadsheets, IT can easily determine the costs and risks associated with moving to IP telephony.
- **Speeds rollouts:** By automatically interfacing with critical equipment and performing real-time analysis, IT can rapidly prepare the business case for convergence.
- **Measures actual voice use and patterns:** Eliminating guesswork, actual call use and patterns can be easily determined, empowering IT with accurate knowledge to plan for an IP telephony rollout.
- **Demonstrates voice's impact on the data network:** Determines if existing data networks can successfully accommodate IP telephony by accurately identifying current voice consumption, performing network tests and examining the impact on the network and business applications.
- **Supports complex environments:** Able to interface with a wide variety of PBX and network equipment, a single solution can provide a full picture of voice and data needs.
- **Enables IP voice chargebacks:** Now IT can easily bill IP telephony use by department, based on actual usage.
- **Monitors quality of service for the converged network:** Provides around-the-clock monitoring of voice quality and the impact of voice on critical business applications.
- **Provides post-rollout security monitoring:** Easily monitors voice traffic for toll fraud and inappropriate connectivity, and provides an audit trail that can recreate past connections and security states for compliance and security enforcement.

What to Look for in a Converged Communication Analysis Solution

When examining a converged communication analysis solution, consider the following requirements:

Communicates with a Wide Variety of PBXs

Make sure the solution supports all the brands of PBXs used in your business. The solution should be able to interface with PBXs via serial ports, real-time IP sockets, FTP downloads or database queries.

Supports all Types of Communication Lines

The ideal solution should support analog modems, trunk groups, T1s, enhanced T1s with caller-ID and IP-trunking.

Works in a Hybrid Environment

Seek a solution that can accommodate a hybrid environment using agent technology that resides on the data network.

Real-time Operation and Reporting Capabilities

Look for a solution that provides real-time access to data and reports, empowering IT to respond to fraud or quality of service issues immediately.

Customized Reporting by Job Function

An advanced solution allows departmental managers such as sales, customer service and IT to access reports for call-related information relevant to their jobs. For example, customer service might want to examine call queues and IT might want to look at quality of service statistics.

Comprehensive Reporting

Seek a solution that can establish customized and automated reports on topics such as employee productivity, marketing campaigns, traffic studies, call accounting and service-level agreements.

Continual Innovation

Look for a company whose solution is constantly evolving to support future needs, such as fixed-mobile convergence and real-time video.

Equipment-agnostic Solution Provider

The ideal solution should work with any equipment within your voice and data networks, ensuring its usefulness as the infrastructure grows.

Enterprise-focused Company

Seek a company that has experience working with widely distributed, multi-site businesses and that can accommodate the many disparate solutions that make up the voice and data network.

The VXTracker™ Communications Management Advantage

VXTracker helps IT plan, execute and monitor the ongoing success of IP telephony rollouts.

VXTracker software from SyncVoice Communications, Inc. is an advanced converged communications management solution designed to help enterprises achieve successful IP telephony transitions and ensure ongoing success. Able to track and monitor communication use and expenses across traditional, hybrid and converged communication networks, VXTracker software has helped hundreds of businesses, including AIG, The Discovery Channel, Remax, Limited Brands and the California Franchise Tax Board.

The VXTracker product line provides a single view of the network across disparate systems, while normalizing and correlating data to provide actionable information. VXTracker can simplify the complexity of planning IP telephony rollouts and provide sophisticated analytics that reveal costs, performance and quality of service metrics.

Able to meet all of the requirements outlined in this paper, VXTracker software is the ideal solution to help IT plan, execute and monitor the ongoing success of IP telephony deployments.

To learn more about the VXTracker solution, please call 866-4VXTracker (toll-free) or visit us at: www.syncvoice.com.