

Successful Unified IP Communications Rely on Unified Management



by George Hamilton | October 2006

Executive Summary

There is little question regarding the business and productivity benefits of unified communications (UC). Organizations can be more responsive, deliver more value to customers and partners, and adapt quickly to exploit new market opportunities. The challenge for many is to scale their departmental trials of IP communications components and to develop a strategy for implementing unified IP communications across their organization. It takes a shift in thinking from evaluating and deploying individual components to one in which unified communications is the goal from the outset.

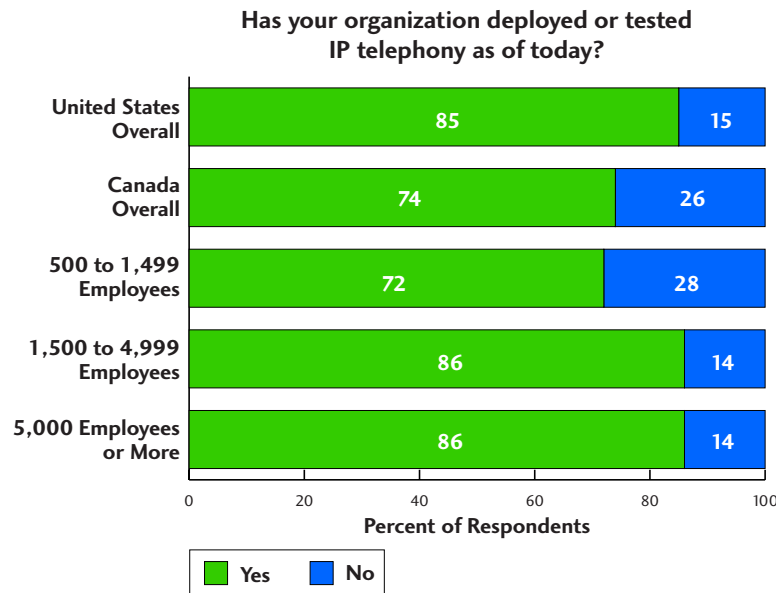
To successfully develop a strategy for and implement unified communications, enterprises and service providers need to unify their IP communications *and* unify their management (see Exhibit 1). The success of unified communications relies on unified management.

This Yankee Group Report discusses the challenges of managing unified communications as well as how enterprises and service providers can reduce time to value and accelerate the return on investment of their unified communications platform by adopting unified management. In addition, it evaluates key management requirements and describes how the Cisco Unified Communications Management Suite is meeting the emerging market needs.

Exhibit 1

IP Telephony Is Widely Deployed

Source: Yankee Group 2005 Economics of IP Communications Survey



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I. Introduction

According to the Yankee Group *2005 Economics of IP Communications Survey*, adoption of IP telephony is widespread (see Exhibit 1 on previous page). However, organizations still struggle to move beyond departmental and pilot implementations and adopt a universal communications platform (see Exhibit 2 on next page).

The good news is that the same survey respondents overwhelmingly believe that the convergence of voice and data will enable more collaborative applications and will result in better worker productivity. In short, respondents believe in the benefits of unified IP communications, but have trouble moving beyond pilots of VoIP. One of the most persistent contributing factors has been the fragmented nature of management tools.

Enterprises have had to rely on a diverse set of management tools to help them test, deploy and monitor their IP communications. An enterprise could deploy a half-dozen tools to manage the network infrastructure, IP telephony platform, call quality, messaging and applications. Even the best of the available tools lack capabilities and—more importantly—integration.

This is not unusual; rather it is how management tools evolve to support emerging technologies. The first step is to develop the necessary management capabilities, and the next is to integrate them and build operational discipline. We are at that next step; the future of unified communications has reached a critical juncture. Enterprises need to adopt a strategy for deploying UC and vendors need to deliver management solutions that enable them to do so successfully.

II. The Need for Unified Management

IP telephony managers face an array of choices in management tools. Unified communications equipment providers are adding more management capabilities. Traditional network management software vendors are adding new capabilities to their software, and startups are delivering tools to address product gaps.

IP communications managers have a tall order navigating the marketplace. However, one fact remains clear: The complexity of managing IP communications demands that vendors deliver a more integrated set of tools and common views into the various components of the IP communications platform.

The Unified Communications Management Challenge

Management of IP communications (IPC) has been too makeshift and uncoordinated. Most enterprises currently use a collection of tools and attempt to integrate them with a manager of managers (MOM) (see Exhibit 3 on next page). Organizations use a mix of existing network and systems management tools as well as the individual tools included with each component of the IPC platform. It is left up to the network and systems administrators to integrate the individual products and build operational support practices. Too often, this results in manual tasks, poor visibility and inefficient support processes that lengthen troubleshooting time, diminish performance and undermine confidence in the system.

A major reason for this insufficient approach to management is the predominant thinking that VoIP is “just another application.” Because it is just another application, many organizations first try to manage it with existing tools. While it is true in a basic sense that they are just additional applications, real-time applications

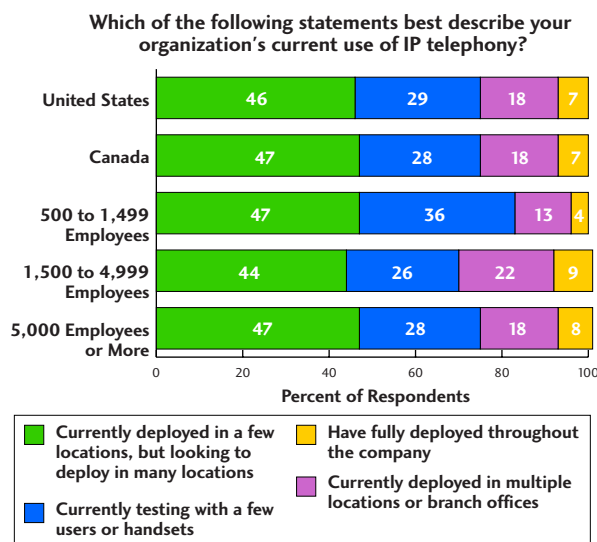
such as voice, video and collaboration behave very differently. One cannot infer the performance of these applications from the availability of the infrastructure. In addition, performance issues do not merely slow down these applications—they render them unusable. Managers find they have significant performance issues, but lack the capabilities to isolate and fix them.

Unfortunately for many organizations, their existing network management tools are not adapting quickly to fill in the gaps. A “chicken and egg” syndrome characterizes the current market for IP communications management tools: Enterprises are not progressing with their deployments as aggressively as they would like because the vendors they trust for their existing management tools are not aggressively investing in IPC management. Management software providers are not investing heavily in IPC management tools because they perceive the market as growing too slowly to warrant the investment. In addition, managing real-time applications has never been the strength of traditional management software providers—it will require a great deal of investment.

One solution to this quandary is for UC platform providers to embed manageability into the platform and offer more integrated tools. Critically, they need to champion unified communications management. This means manageability of each component of unified communications in an integrated, service-centric model that provides the needed capabilities and interoperability with existing management frameworks.

Exhibit 2 Enterprises Struggle to Get Beyond Small or Test IP Telephony Deployments

Source: Yankee Group 2005 Economics of IP Communications Survey



Note: Totals may not equal 100% due to rounding.

III. Overview of Unified IP Communications Management

Yankee Group has long advocated the lifecycle approach to IP telephony management (see Exhibit 4 on next page). This lifecycle is often called a plan, design, implement and operate (PDIO) process. Just as software developers subscribe to a software development lifecycle, network managers also follow a lifecycle for networks. For enterprises, it is not enough to focus on IP telephony; they need a strategy that enables them to manage the performance and availability of all IP communications including voice, video, messaging and collaborative applications.

Management Requirements

Embracing the management lifecycle approach is crucial to success, but managers need additional context to evaluate management solutions. When evaluating solutions, managers should assess a tool's capabilities to manage the four core components of IP communications:

- **Performance and availability of the IP fabric:** Enterprise network managers use a variety of tools to monitor the health of their IP network, including the routers, switches, servers and other network devices. IP telephony adds the requirement of monitoring the IP phones, gateways and servers that support IP telephony services. Performance and availability management of the IP fabric becomes more complex with IP communications. Performance becomes a more critical measure than availability because call quality degradation is more often a result of inconsistent performance and transient issues rather than downtime.
- **Call control and messaging:** The software for monitoring and managing the initiation, establishment and tear down of calls is unique. Existing network and server management tools are not adequate. The same is true for the messaging platform. Existing tools provide visibility into server health and the processes running on the server. However, they do not provide the necessary visibility into the functioning of the call manager or messaging software.
- **Rich media and collaboration:** The value of IP communications is the integration of enhanced media and collaborative applications such as video, conferencing and content-sharing applications. Management tools also need to

provide visibility into these services because their performance directly affects user productivity and the value of the IP communications platform.

- **IP communications applications:** Effectively managing the IP communications infrastructure is of limited value if administrators neglect the critical applications it supports. A management solution needs to provide visibility into and administrative tools for call center applications, presence capabilities and—as mandated by law—emergency response.

A complete solution must provide visibility and active management into all the core components, but—most importantly—it must integrate the management tools for the components so it becomes a seamless management system. Integration is more than a common view of the infrastructure; it's a standard approach to instrumentation, the management lifecycle and customizable service-level views of the unified communications components.

The Benefits of Unified IP Communications Management

Organizations that adhere to the management lifecycle and deploy a unified communications management solution will realize the following benefits:

- **Faster deployment and time to value:** The visibility and custom views give administrators more confidence in the system and their ability to manage it. This shortens development and testing times, which leads to faster deployment.
- **Faster ROI:** Faster deployment means enterprises begin to extract value from their investment sooner.

Exhibit 3
Components of Unified Communications Management

Source: Yankee Group, 2006

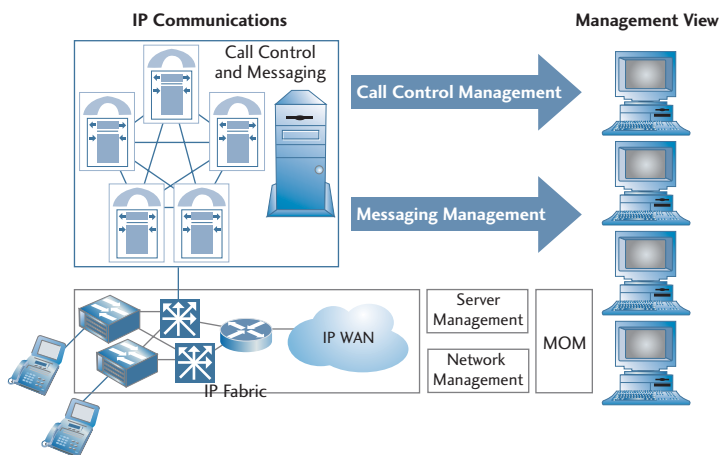
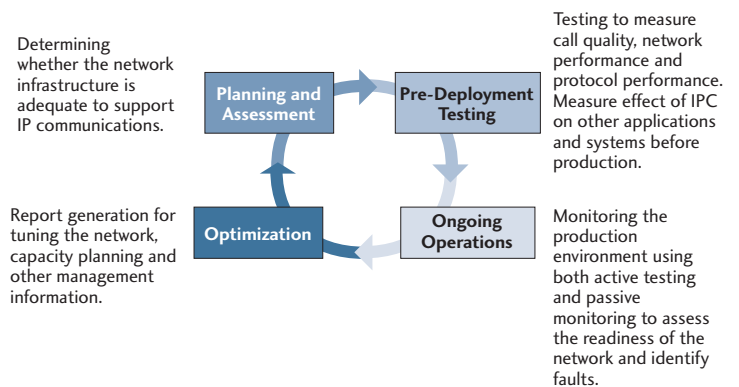


Exhibit 4
IP Telephony Management Lifecycle

Source: Yankee Group, 2006



- **Reduced management costs:** Eliminating “swivel chair management” and giving administrators customized views shortens troubleshooting times. The unified management also enables IT departments to develop operational discipline and standard support processes. This prevents too many manual work-arounds and keeps the management system simpler and more scaleable.
- **Consistent quality of experience:** Users will migrate faster and use the productivity applications if the experience is consistent and of high quality.

The bottom line is unified IP communications management enables enterprises to extract the most value from their IP communications investments. Enterprises should evaluate solutions based on how well they unify the management for all IP communications and applications.

IV. Vendor Profile: Cisco

Cisco is the market leader for IP communications. Unified communications deliver more flexibility but as the market has matured and enterprises have scaled their deployments, IT managers are looking to Cisco to address manageability. Cisco has responded with management offerings that deliver unified management of all IP communications.

Cisco Unified Communications Management Suite

The Cisco Unified Communications Management Suite (CUCMS) is a set of integrated communications management software tools that address the phases of the management lifecycle (PDIO) as well as critical management requirements. To start, Cisco introduced products for the implementation and operational phases of the lifecycle. Cisco will also introduce new management products to support its plan. It will design services and enable enterprises and service providers to execute their own plans and designs for unified communications. Operations Manager, Service Monitor and CiscoWorks Voice Manager comprise the core of CUCMS today.

Cisco Unified Operations Manager

Operations Manager is the unified dashboard, proactive monitoring engine and diagnostic product. As its name implies, Operations Manager tackles the operational phase of the management lifecycle. The dashboard presents service-level views of the UC environment. Administrators can customize the views and see into the call control and messaging, IP fabric, the collaborative services and IP applications.

Operations Manager includes integrated diagnostics that are linked to monitor every layer of the Cisco unified communications infrastructure and proactive testing with IP SLA synthetic traffic generation. This gives administrators an end-to-end view of performance and availability.

In addition, Operations Manager 2.0 includes additional support for trunk group modeling, discovery, reporting and alerting of video endpoints, and support for voice quality monitoring using Cisco-Voice Transmission Quality (C-VTQ). C-VTQ produces a voice quality score based on Cisco instrumentation built into endpoints. It also includes additional phone tests for end-to-end calls (remote site, PSTN, DID), including phone registration, off-hook, conference, hold, park and transfer. Operations Manager 2.0 also adds dial plan tests to verify class of restriction and gateway availability. Operations Manager 2.0 gives administrators deep 24x7 management and troubleshooting capabilities from one, unified management console for the entire unified communications system.

Cisco Unified Service Monitor

Service Monitor delivers real-time measurement of call quality. Service Monitor has two components: the Cisco 1040 Sensor and the Cisco Unified Service Monitor central software.

The 1040 Sensor connects to a Switch Port Analyzer (SPAN) port, and the mirrored data stream is evaluated for call quality. The 1040 Sensor monitors RTP streams and sends mean opinion scores (MOS) scores for active calls to the Service Monitor. The Service Monitor stores and evaluates MOS scores and sends SNMP traps for threshold violations to the Operations Manager. The Operations Manager presents the alert and offers an array of diagnostic options.

Service Monitor 2.0 will also add support for C-VTQ voice quality monitoring. Using C-VTQ, administrators can gather call quality data directly from endpoints in addition to using the Cisco 1040 Sensor. The 1040 Sensor still provides considerable value:

- It provides real-time voice quality alerting.
- It can be deployed in front of gateways, voicemail systems as well as edge switches close to phones, developing a comprehensive profile of voice quality system-wide.
- It works with any version of Cisco CallManager, CallManager Express and phones. It is also applicable even with older versions that do not have C-VTQ implemented.
- It can be easily redeployed from one location to another as call quality monitoring needs change.

Together, Cisco Unified Operations Manager and Unified Service Monitor provide integrated management of the entire Cisco unified communications architecture (see Exhibit 5).

Looking to the Future

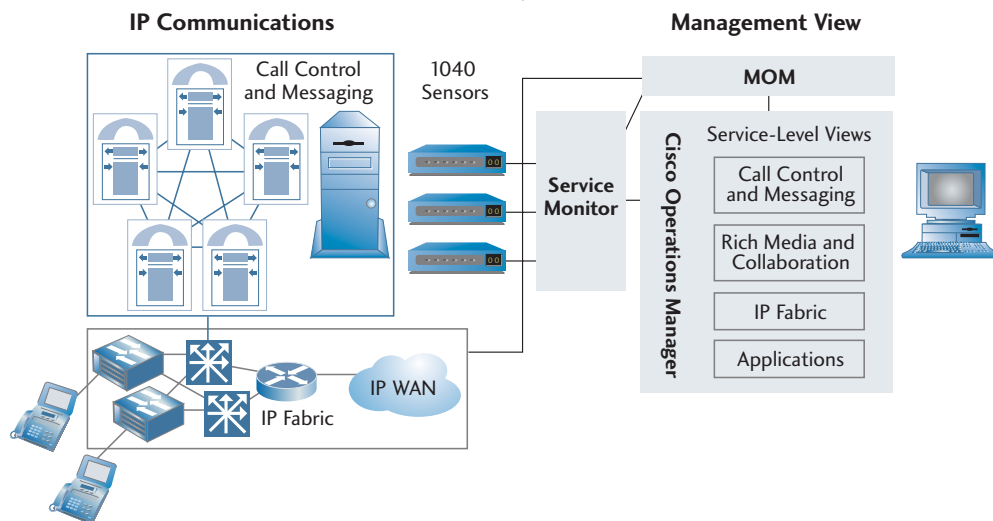
CUCMS gives administrators much-needed visibility into their entire unified communications environment. Cisco is quickly developing additional products to complete its support for all phases of the management lifecycle.

New capabilities will include tools for pre-deployment assessment, provisioning management and enhanced reporting. The pre-deployment assessment capabilities will give administrators the ability to assess and prepare the network for

Exhibit 5

Cisco Unified Communications Management

Source: Yankee Group, 2006



unified IP communications. The new provisioning management product will provide a single console for the provisioning of all Cisco unified systems. It will give visibility and policy-based management for subscribers, dial plans, services and Cisco Unified resources. In addition, Cisco will leverage the data collection of Operations Manager and Service Monitor to deliver enhanced reporting capabilities for administrators to optimize the environment and provide executive operations and capacity planning level views into the unified communications system.

Cisco has also provided for smooth upgrades from version 1.0 of the Operations Manager and Service Monitor to its version 1.1 and now version 2.0. Cisco has committed to efficient upgrade paths for all new releases so users can implement unified management today and easily add new integrated features as they become available.

Benefits of Cisco Unified Communications Management Suite

CUCMS is designed for the emerging challenges of unified communications management—not just IP telephony. Unifying the management interfaces and delivering customizable service-level views will help enterprises implement IP communications across the enterprise and experience the benefits:

- **Faster deployment and time to value:** CUCMS gives administrators the tools to manage all of the components of a Cisco Unified Communications System. The service-level views and consolidated management address the deployment challenges that can slow down implementation and adoption by end users.

- **Faster ROI:** Customers investing in CUCMS will hasten the return on their investment in Cisco Unified Communications.
- **Reduced management costs:** CUCMS provides one view for an entire unified communications management system. Operations staff can simplify troubleshooting and support processes and manage from common views. This reduces management costs and frees IT resources for other IT and communications projects. Deployment-wide proactive problem detection and automated workflows also reduce management costs.
- **Consistent quality of experience:** CUCMS gives service-level views so administrators are not just monitoring infrastructure and packets—they're managing the user experience.

V. Conclusions and Recommendations

There is a noticeable shift in IP communications management software. The unique requirements of real-time applications demand that manageability be built into the unified communications platform. They also demand that enterprises adopt a lifecycle approach and expand their strategy beyond managing VoIP or call quality and adopt a unified approach to managing all IP communications. Management and manageability should be a high priority when evaluating unified communications platforms—it can be the difference between success and failure.

Recommendations for Enterprises

- **Manage all unified IP communications—not just VoIP.** Yankee Group has long advocated that the value of moving to IP extended well beyond toll savings. The value is in the applications and services that foster collaboration, communications and productivity. To realize that value, enterprises should develop a strategy for unifying the management of all the IP communications components.
- **Make management more than a checkbox item.** Give management capabilities the attention they deserve during platform selection and pre-deployment. The features and capabilities of unified communications mean nothing if the quality of experience is poor and support is difficult.

Recommendations for Service Providers

- **Use unified management as a differentiator.** Service providers can extend their value beyond the delivery of dialtone and increase the value they bring. Use unified communications management as a way to improve service performance and give customers visibility into their managed services.
- **Integrate unified communications management into self-service portals.** The perceived loss of control is a common objection to choosing a managed service. Integrating unified communications management into self-service portals can mollify that objection and enhance competitive positioning.

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