White Paper

Debunking the Myths of Unified Communications

As voice, video, and data networks converge into a single user experience, more organizations are seeing the value in deploying IP-based unified communications solutions. These solutions integrate telephony, unified messaging, voicemail, customer contact solutions, audio and video capabilities, rich-media conferencing, and presence and mobility solutions with business processes. However, as with any emerging technology, myths have evolved about the use, value, and effectiveness of unified communications. This paper looks at the most common myths—and the facts—and provides information that can help you make an intelligent decision about deploying a converged network and unified communications solution.

THE MYTHS

1. If it is not broken, I should not fix it; maintaining my existing private branch exchange (PBX) or key system instead of switching to an IP-based unified communications solution will save my company money.
2. Communication is about transport; it does not matter whether the transport technology is IP or time-division multiplexing (TDM).
3. Voice over IP (VoIP) is more for consumers than for corporate networks; it lacks the reliability and security of a business application.
4. Voice is just another application on the network and strictly a function of the IT department.
5. Standards for IP communications are still evolving; the smarter approach is to wait until the standards are fully developed before deploying unified communications.
6. IP-based communications systems are more vulnerable to hackers than traditional communications systems.
7. To deploy an IP-based communications system, I would have to replace all the resources I have invested in already.
8. Hard phones are dead; the better approach is to deploy desktop or mobile clients if I want to collect presence information and truly unify all my communications solutions.
9. If I choose a single vendor for all my business communications, I forego best-in-class choices.

MYTH 1

If it is not broken, I should not fix it; maintaining my existing PBX or key system instead of switching to an IP-based unified communications solution will save my company money.

Some people think that if all you really care about is reliable phone service, then a TDM system should work fine. Until you have a compelling reason to change it—for instance, your warranty expires, the manufacturer is discontinuing the equipment you are using, or your company is moving—the best approach is to leave it as is. There is really no value in changing to IP if your TDM system allows you to make the calls you need to make.

The Reality

Switching gradually to unified communications will cut costs in many areas, improve workforce efficiency, and allow integration of business processes. In many cases, you can use other planned improvements or upgrades to your data network to help you make the change.

Consider your old VCR. It let you record TV programs that you would otherwise have missed, and the quality was pretty good. Then along came digital video recorders (DVRs), which introduced a more efficient way to record and watch television and presented a host of new features you never thought possible, along with better quality and more control. You may have been perfectly satisfied with your VCR, but when you discovered the capabilities of the DVR, it made no sense to go back to the old technology.

TDM systems are reliable for making phone calls, but they have many limitations. For example, they leave you deskbound. Because they are static and hardwired, TDM systems do not provide any mobility or wireless capabilities. In the workplace environment of yesterday, workers remained at their desks most of the day; however, today, increasing numbers of workers are mobile. Many telecommute. Contractors may come into the office from time to time and use empty cubicles or conference rooms as workspaces. You may have customers in other states or even other countries, requiring you to make calls from home before or after regular office hours. To respond to these changing business requirements, a more flexible communications solution is essential.

Today's IT infrastructure must allow more mobility, more flexible and comprehensive ways to communicate, and more features for team collaboration. IP-based unified communications accomplishes these goals by providing cost savings and more rapid access to information and by integrating disparate applications for more streamlined workflows. The Cisco® Unified Communications system—which also includes IP-based endpoints, customer contact applications, IP telephony solutions, and communications infrastructure products—provides applications for messaging, presence information collection, and voice, video, and Web conferencing that integrate transparently with common desktop business tools to help users more effectively communicate with team members.

According to a recent Sage Research study, organizations using IP-based unified communications applications saved an average of 32 minutes per day per employee just by being able to connect with team members more efficiently. The use of soft phones reduced monthly expenses for cell phone and long-distance charges by about $1727. And mobile workers saved 40 minutes each day through greater communications convenience. Companies using integrated voice and Web conferencing services, such as the Cisco Unified MeetingPlace® solution, decreased conferencing expenses by 30 percent by making integrated conferencing capabilities available in-house and on the network, and reduced travel costs by about $1700 per month.

In addition to these cost and time savings, today's business environment necessitates a phone system that can respond to rapid change and growth. Cisco Unified IP Phones are fast and easy to install and can be moved anywhere that a connection is available, greatly increasing worker mobility and reducing maintenance and installation costs. And a phone call has become much more than a phone call. Cisco Unified Communications Manager call-processing software allows for cost-effective, highly reliable call processing with IP telephony, video, and data features. It provides outstanding investment protection for future growth, allowing companies to easily extend IP functions to small sites or remote offices.

MYTH 2

Communication is about transport; it does not matter whether the transport technology is IP or TDM.

A common misconception is that a phone is just a phone—if it works, the type of transport being used does not matter.

The Reality

Unified communications goes way beyond transport—it is a technology that will be increasingly integral to all your communications and to successful collaboration among your teams and co-workers. Unified communications lets you implement more efficient communications and strategic business processes, changing and improving the way business is conducted. IP spans other applications that you use every day, and these can be integrated with customer relationship management (CRM) and workforce management interfaces, inventory and supply chain applications, time and attendance tracking, and other business-critical functions. No other transport technology can integrate business processes in this way.

Cisco Unified Communications clients provide a variety of functions when connected to Cisco Unified Communications Manager call-processing software within an intelligent network. Cisco IP Communicator delivers soft-phone capability, and Cisco Unified Video Advantage allows users to place and receive video calls on their hard or soft IP phones. Cisco Unity®, Cisco Unity Connection, and Cisco Unity Express solutions offer voicemail, integrated and unified messaging that delivers e-mail, phone messages, and faxes to a single, unified inbox. Finally Cisco Unified Personal Communicator is a desktop application that provides unified access to a variety of productivity tools, including voice, video, presence, and Web conferencing applications. Cisco rich-media conferencing solutions, such as the Cisco Unified MeetingPlace and Cisco Unified MeetingPlace Express solutions, integrate voice, video, and Web conferencing to make remote meetings as natural and effective as face-to-face meetings, helping geographically dispersed teams work more closely and effectively. These capabilities are impossible with traditional TDM-based systems.

Such integration has worked wonders in a variety of work environments. For example, using Cisco Unified Video Advantage and Cisco Unified Communications Manager Express, a county prison has significantly cut costs and improved security. Rather than transporting prisoners to the courthouse to make their depositions, the county uses video calls. Because the calls are transmitted over the same secure network, the risk of hacking or security leaks is mitigated. By eliminating travel to the courthouse, the county gains immediate cost benefits from reduced travel expenses and saved time.

In a retail environment, store clerks using Cisco Unified Wireless IP Phone 792X phones can improve productivity and customer-response time. When a customer wants a particular item checked, a customer service representative can send a page over a wireless phone to locate the representative closest to the item. That representative can then use a wireless phone to call back with the appropriate information. This process eliminates the need for annoying broadcast pages and eliminates delays when the answer is obtained.

Integrating a Cisco Unified Communications solution with business processes can have a major effect on operations, improving collaboration, reducing labor costs, and speeding time to solution—in other words, IP-based unified communications improves the way that work gets done.

MYTH 3

VoIP is more for consumers than for corporate networks; it lacks the reliability and security of a business application.

The promotion of applications such as Skype and Vonage IP phone services, which allow consumers to use IP-based voice capabilities, leads some people to believe that VoIP is primarily for consumers and not applicable in business environments. Also, because IP telephony is so new, some organizations fear that quality and security cannot be guaranteed and conclude that VoIP is too unreliable and risky for business applications.

The Reality

The underlying technology for VoIP and IP-based unified communications is the same: Voice traffic is packetized and transported over IP, whether it is Skype or Vonage sending the call over the Internet, or a business network using Cisco Unified Communications Manager to process the call. However, what really differentiates the Cisco Systems® enterprise-class solution from the consumer products is the way in which the voice traffic is transported. With consumer solutions, voice traffic is sent over the Internet, where enforcing security policies and guaranteeing quality of service (QoS) is difficult. By contrast, the Cisco solution works over a company's LAN or WAN, allowing strict security policies to be implemented for protecting and securing the information. Because the network is controlled, security threats can be mitigated, and bandwidth can be allocated according to need and priority. The ability to control the quality and security of the transported traffic is reflected in the user experience.

Moreover, the features of enterprise-class IP phones such as Cisco Unified IP Phones are tailored to the needs of corporate users. They deliver superior audio quality, accessibility for people with disabilities, ergonomic physical design, and advanced capabilities, such as LCD screens that allow information to be displayed on the phone, that help employees in a corporate environment be more productive. Unique features target users in a variety of locations—from the lobby to the manufacturing floor to the executive suite.

In addition, Cisco infrastructure products use the Cisco Service-Oriented Network Architecture (SONA) to provide the back-end support that an intelligent information network requires. Cisco Integrated Services Routers combine intelligent services such as voice, security, routing, and applications to automate processes and provide improved QoS with improved use of network resources. Cisco routers minimize network outages, providing reliable access to the most business-critical applications and facilitating the creation of a resilient, intelligent network. Cisco Unified Communications Manager Express allows Cisco Access Routers and Integrated Services Routers to deliver a comprehensive set of call-processing features commonly used by business customers, facilitating the deployment of a cost-effective and highly reliable unified communications solution for up to 240 users.

MYTH 4

Voice is just another application on the network and strictly a function of the IT department.

Many voice experts believe that their expertise will no longer be needed after a unified communications solution is adopted. Because voice and data will be traveling on the same data network, voice experts fear that the current IT staff will take over the full responsibility for telecommunications, and employees with experience in voice will no longer be valuable.

The Reality

Yes, voice and video are moving onto the data network, but that does not negate the need for personnel with experience and skills in voice and video traffic, who have in-depth understanding of customer needs and the factors that affect voice call quality. Voice experts can facilitate the transition to unified communications, and after the networks are merged, their skills and experience will be invaluable in helping the data team understand the nuances of all the components of unified communications. They can also help maintain the service levels and security essential to the success of voice applications.

Voice is a unique, real-time communication and therefore has unique requirements that only voice experts truly understand. Support for end users is critical. Meeting end-user expectations requires staff with a thorough understanding of the intricacies of voice technologies. Some of the most successful deployments of unified communications are those that converged not only their networks, but also their voice and data teams, cross-training the teams and then reorganizing them to maximize their skills and target specific needs of the new solution.

MYTH 5

Standards for IP communications are still evolving; the smarter approach is to wait until the standards are fully developed before deploying unified communications.

Some people think that the process for developing telecommunications and data networking standards is complex and mysterious, with standards developed through decades of tradition. As a result, many people are concerned that, because of the relative newness of IP communications, the current standards for these solutions are not mature enough to justify investing in the technology. They fear that if they invest in an IP communications solution now, by next year everything will change, and the investment will have been wasted.

The Reality

Fundamental standards for IP-based communications are already in place, and as with any technology, new standards will continue to emerge. However, most of the standards crucial to the success of IP communications have been in place for a long time.

For example, Cisco was one of the first vendors to support the inline Power over Ethernet (PoE) 802.3af standard, which was finalized by the IEEE in 2003. This standard allows Cisco Unified IP Phones to use Dynamic Host Configuration Protocol (DHCP) to obtain IP addresses from the appropriate servers, just as a personal computer does. The phone then downloads its operating system using Trivial File Transfer Protocol (TFTP), another standard, and sets up an 802.3p VLAN to segregate voice traffic from data traffic for the best possible QoS and security. Cisco Unified Communications products also support Session Initiation Protocol (SIP), an accepted Third-Generation Partnership Project (3GPP) signaling protocol and permanent element of the IP Multimedia Subsystem (IMS) architecture since November 2000; H.323, created at about the same time as SIP; and Media Gateway Control Protocol (MGCP), also created in 2000.

Cisco Unified Communications Manager supports several open-packet telephony standards that allow customers, partners, and developers to easily extend the features and capabilities of their communications environments. For example, Lightweight Directory Access Protocol (LDAP) is used to perform directory lookups and place calls. Most applications are supported using a combination of inherent IP phone services, Extensible Markup Language (XML), Telephony Application Programming Interface (TAPI), and Java Telephony API (JTAPI) standards.

Inherently, IP accommodates new protocols as they evolve, as evidenced by its interoperability with inline power and SIP in previous years. As new protocols become standards, they are easily incorporated, protecting your initial investment for years to come.

MYTH 6

IP-based communications systems are more vulnerable to hackers than traditional communications systems.

With hackers becoming increasingly sophisticated and attacks increasingly damaging, security is on everyone's mind. Some people fear that IP networks are susceptible to the hacking, viruses, and worms that plague corporate data networks, and that converging voice onto the data network exposes corporate communications to more security risks and downtime.

The Reality

Security is definitely an important factor in deploying IP telephony or any type of phone system, be it a traditional PBX system, a native IP solution, or a hybrid solution. Even with TDM-based PBX systems, you have to protect against toll fraud, masquerading, and war dialing. Unauthorized access or eavesdropping on a PBX system can often be accomplished with a simple pair of alligator clips, but you probably do not have to worry about Internet worms or hackers. The real myth is that hybrid systems are more secure than end-to-end IP communications solutions. In fact, it is the other way around.

Typically, the first step in a hybrid migration process is moving the CPU and call processing from the cabinet and onto a dedicated LAN. The LAN must be completely secure, because an attack on the call-processing component affects every user on the system, not just IP phone users. With this approach, you still have the same security considerations as if the entire solution were on the IP network, but now you have to manage two separate networks without gaining the benefits of an integrated solution on a single, converged network, nullifying the reason for moving to IP in the first place. In addition, managing two separate networks leaves more room for human error and opens the way to a host of other risks and possible pitfalls.

Privacy, protection, and control must be addressed in any network security approach, regardless of the technology used. Cisco addresses security at all levels of the IP communications infrastructure—the IP network, the voice systems, and the applications—providing the in-depth defenses necessary to make your IP communications systems secure and reliable and delivering the privacy, protection, and control that is essential to business operations.

Cisco Unified IP Phones support automatic classification of voice traffic into a high-priority queue to minimize latency and jitter. They are the first point at which the network is dynamically partitioned into two separate logical networks: one for data and one for voice. With the appropriate solutions deployed, call signaling is both encrypted and authenticated with Cisco Unified Communications Manager, and voice traffic can also be encrypted for maximum privacy. For further protection, the software image running on the phone can be installed only if it has the appropriate signature. All of these features are made possible by trust and identity capabilities based on industry-standard digital certificates and related authentication and authorization technologies.

Cisco Security Agent protects against intrusion, and the Network Admission Control (NAC) architecture helps enforce corporate security policies consistently across the enterprise. Detection sensors in the network identify and isolate unusual activity before it affects the network. Cisco firewalls lock down unneeded application ports using stateful packet inspection to help ensure that only authorized traffic is allowed to reach crucial internal segments.

Cisco intelligent switches and Cisco Unified Communications Manager Version 4.0 and higher also support device authentication, so that endpoints within the network are first authenticated, preventing rogue endpoints and rogue software loads on endpoints. With Transport Layer Security (TLS) Secure Sockets Layer (SSL) and Secure Real-Time Protocol (SRTP), the signaling of communications call setup and processing to and from Cisco Unified Communications Manager and other endpoints is protected and secure. Cisco has also implemented the Advanced Encryption Standard (AES) for the Cisco Unified IP Phone 7970G, providing secure voice encryption where needed on a call-by-call basis or for specific endpoints.

Because of the unique reliability and security capabilities of the Cisco solution, it is possible to achieve higher levels of security than with traditional TDM-based PBX systems.

MYTH 7

To deploy an IP-based communications system, I would have to replace all the resources I have invested in already.

Most people believe that they have to start from the beginning to deploy an IP communications solution. This, of course, is not economically feasible for many companies, most of which have already invested heavily in TDM-based systems and do not have the budget, time, or resources to devote to a complete overhaul.

The Reality

Unified communications solutions allow migration at an organization's preferred pace.

By integrating with most major traditional PBX and voicemail systems as well as with mission-critical business applications, the Cisco Unified Communications solution empowers customers to migrate their systems based on their business needs instead of as a result of technology limitations. Understanding that migration to IP is more about process than technology, Cisco has developed detailed plans and processes that make migration smooth, fast, and easy for companies of all sizes. Because services on the network are location independent, a company can use a building-block approach to migrate its communications to IP site by site, group by group, or application by application. In fact, almost all Cisco customers migrate their networks to IP communications using this approach.

For example, an organization that is experiencing increased need for collaboration, conference calls, and dispersed teams may want to improve productivity and reduce travel costs by implementing a solution that allows the use of virtual teams. In this scenario, a migration to IP-based unified communications makes sense. The following migration path allows the organization to adopt IP-based services at its own pace:

Step 1. The company introduces Cisco Unity unified messaging and Cisco Unified MeetingPlace Express to improve employee effectiveness, and these products integrate with the TDM PBXs that the company currently owns. The Cisco Unity software allows employees to check voicemail and urgent e-mail messages using text-to-speech technology while driving to the office, thereby resolving critical concerns before even arriving at their desks. Employees also gain access to a list of voice messages and senders on their PCs, so that they can prioritize tasks and handle all messages (voice, e-mail, and fax) from their e-mail inboxes. The Cisco Unified MeetingPlace solution rich-media conferencing solution allows all team members simultaneously to view documents, project plans, and other information using voice, video, and the Web, regardless of location.

Step 2. The company deploys Cisco Unified Communications Manager 5.0, which interoperates with existing PBX systems and Cisco Unified Communications Manager. Employees use IP phones and Cisco IP Communicator as their soft phones on laptops and can take advantage of IP phone features over VPNs or while they are logged into the network at client sites. Team managers can also install Cisco Unified Video Advantage and video telephony cameras to turn their laptops into video phones. Additional productivity tools, such as Cisco Unified MobilityManager, can be added to provide employees with more features, such as presence information, to help eliminate phone tag.

Step 3. Eventually, the company can retire its PBX systems altogether and replace them with Cisco Unified Communications Manager 5.0. All traffic, including voice, video, and data, will run over IP.

Using proven migration methodologies, Cisco and its channel partners deliver superior customer success and satisfaction. Simply installing Cisco MeetingPlace Express can eliminate the cost of outsourcing conference calls, providing significant savings that can be redirected to rollout of other IP-based communications services. At the end of the process, you have a converged voice, video, and data network. You decide whether it takes a week, a month, a year, or longer, and a complete equipment upgrade is not required.

MYTH 8

Hard phones are dead; the better approach is to deploy desktop or mobile clients if I want to collect presence information and truly unify all my communications solutions.

Some people believe that soft phones (that is, software-only telephony capabilities on laptops or PDAs), unified desktop communications clients, or mobile phones are better solutions than a full-fledged unified communications solution. Some people think that hard phones are no longer needed, and that only soft phones, or desktop and mobile clients, will be used in corporate settings.

The Reality

Many companies cannot provide a PC for every employee. For these organizations, phones may be the primary device for delivering information. IP phones allow delivery of a lot of information to employees who do not have PCs, such as those on a manufacturing floor or in a retail setting. Moreover, different users have different needs at different times or for different situations and locations. For example, when employees are in the office, they may choose to use a hard phone. When they are traveling, a softphone may be a better option. With a selection of hard phones, desktop clients, and wireless IP phones, plus support for dual-mode phone, the Cisco Unified Communications system is flexible enough to meet a variety of user needs.

Another incorrect belief is that only desktop clients can take advantage of presence information. Presence information allows you to see user activity in applications such as instant messaging, find out whether a person is available or is on an internal or external call, and learn other information. However, you do not necessarily need a desktop client to collect presence information as long as intelligence is embedded in the network. The displays on Cisco Unified IP Phones provide presence information, as do Cisco Unified MeetingPlace, Cisco Unity, and Cisco Unified Communications Manager solutions, using a presence server that aggregates the information across many applications and endpoints. This information can be shared with other applications, such as Microsoft Office Communicator or IBM Lotus Sametime. The advantage? Regardless of how many different systems are deployed on the network, all the relevant information about whom to contact and the best way to connect with people is readily available, allowing more effective, reliable communications among team members.

MYTH 9

If I choose a single vendor for all my business communications, I forego best-in-class choices.

Organizations worry about cheating themselves out of freedom of choice if they adopt a single-vendor solution for their IP-based unified communications. They fear that they will be locked into buying applications from only that vendor because of interoperability concerns and be forced to use applications that do not really meet their needs.

The Reality

Choosing a single vendor such as Cisco has many advantages. Contrary to popular belief, you are not limited to only applications or endpoints built by Cisco. Cisco Unified Communications solutions interoperate with applications from a variety of vendors, because they support the standard protocols. E-mail programs from Microsoft or IBM, CRM systems from several vendors, and hardware from third-party vendors function transparently using those protocols.

For example, Cisco RSVP Agent integrates call-processing capabilities with the underlying network infrastructure to deliver call admission control (CAC) and QoS for Cisco Unified Communications Manager deployments. Resource Reservation Protocol (RSVP), an IETF standards-based signaling protocol for reserving resources on the IP network, is used to secure and reserve bandwidth across the WAN for

calls accepted by Cisco RSVP Agent. Using Cisco RSVP Agent at the network edge facilitates communication with other RSVP-capable routers and passes media through network core elements where RSVP may not be available. Cisco RSVP Agent is managed and secured as part of the network and does not rely on end-user devices to secure CAC, thereby preserving investments in existing phones. Cisco RSVP Agent functions independently of the call signaling protocol and supports the SIP, Skinny Client Control Protocol (SCCP), H.323, and MGCP protocols.

Furthermore, Cisco has collaborated with leading software vendors such as Microsoft and IBM to promote open standards that provide even tighter application integration. Support for many different IP and voice protocols also allows Cisco Unified Communications solutions to integrate tightly and flexibly into each customer's business communications environment to maximize investment in existing applications and processes. For instance, LDAP directory support allows customers to use their Microsoft Active Directory and Outlook distribution lists to make phone calls and to send or receive voice messages.

In addition to easy integration with third-party products, the Cisco Unified Communications solution provides other advantages. Cisco has a rich system of technology development partners in vertical industry segments who work to develop products and services that meet the specific needs of companies in various industries and that interoperate with Cisco solutions. Many applications are also customizable, and the vast community of Cisco technology partners will work to create solutions that meet your unique requirements.

Finally, with more than 48,000 employees and earnings in excess of US$7 billion, Cisco is a brand that you can trust. Cisco is the global leader in voice technologies. In fact, the Cisco name has become synonymous with the Internet and the business network, as well as with the productivity improvements that Internet business solutions provide. Since its inception 22 years ago, the company has helped catalyze the industry's move toward IP and inspire fundamental changes in the way the world communicates. Cisco offers award-winning technical support and services to help its customers succeed. And as part of the company's lifecycle services offering, Cisco Unified Communications experts will work with you as you roll out your IP-based unified communications solution to help you determine the best migration strategy to meet your specific business needs.

FOR MORE INFORMATION

For more information, visit http://www.cisco.com/go/voice.

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco.com Website at www.cisco.com/go/offices.

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Cyprus • Czech Republic Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Printed in USA C11-360872-01 03/07