ShoreTel®

Strategic Guide to Business Phone Systems

Practical Advice for a
Successful IP Telephony
Design and Deployment

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Business Communications: Boost Productivity and Collaboration

IP-based telephony systems are transforming the way organizations operate with features and functionality that go beyond voice calls and into the heart of improving business processes. An IP platform designed specifically for converged voice and data is essential for effectively delivering today's advanced unified communications (UC) applications. The good news for organizations of all sizes is that a converged infrastructure that delivers on the promise of IP telephony and UC, while leveraging existing investments, exploiting economies of scale and streamlining management is now in easy reach.

The ShoreTel UC system was designed from the ground up to enable organizations to embrace a true enterprise-class UC strategy that is affordable and easy to manage— especially across multiple sites. ShoreTel's distributed architecture delivers unmatched reliability, scalability and manageability, plus a user interface that sets the standard for ease-of-use. With proven cost savings and a low total cost of ownership, organizations of all sizes are discovering that they simply can't afford not to switch to ShoreTel.

To help you understand the key issues involved in choosing and deploying the best UC solution for your organization, we've assembled this strategic guide. Here, you'll find articles to help you ensure a successful transition to IP telephony, including the latest tips and best practices, common mistakes of deployment, steps to justify an investment in UC, and key considerations for selecting IP phones.

This strategic guide gives you the tools necessary to facilitate a smooth migration to IP telephony on a platform for successful UC. If you would like to receive ShoreTel's monthly newsletter for industry updates, trend analysis, and information on how you can leverage ShoreTel's UC solutions for competitive advantage, please sign up at www.shoretel.com or e-mail info@shoretel.com.

Thank you,

The ShoreTel Team

Three Steps to Justify Your Organization's Financial Investment in Unified Communications

With the right approach and concrete research to back up your case, you can convince management to underwrite a UC solution that will significantly improve the way your organization does business.

Selling a unified communications (UC) strategy to your corporate executives may take some effort, but with a business-savvy approach and solid research to back up your case, you can convince management to underwrite a solution that will improve the way your organization does business at every level. Irwin Lazar, principal research analyst at Nemertes Research, offers a few suggestions for selling management on UC's ability to create visibility into the availability of colleagues and partners whose collaboration via e-mail, instant messaging (IM), Web conferencing and other applications is critical in completing transactions.

1. **Demonstrate a grasp of your organization's own processes.** "The key is to understand the nature of the business and look for processes in the business that could benefit from UC," Lazar said.

As an example, show corporate management a list of steps required to take orders, pointing out any delays along the way. "Once the order leaves customer service, it often gets bogged down by a day or more waiting for credit approval," you might explain. "If we had the ability to identify someone in accounts receivable who is able to approve the order right away, we could shrink the time from order-taking to shipment by a day or more, which would result in quicker inventory turn, better rates from our shippers and greater customer satisfaction." Use examples specific to your own industry and your own company to make UC's benefits more concrete to those corporate managers who approve IT investments.

Broadly speaking, "IT must become more aware of business process than it historically has been," said Lazar. IT should speak in terms of actual business processes rather than IT jargon whenever possible. "If at the end of the day, IT can't show how the business will save or make money with a particular project, then the project won't succeed."

2. **Take small steps towards a larger business case.** "You will be better able to deal with the integration and management challenges of unified communications if you can demonstrate a quantifiable productivity increase," Lazar said. Consider Web conferencing and instant-messaging, which are two components of an overall UC strategy that may be in regular use at your organization. Discuss these capabilities and the productivity benefits they have afforded users in your organization to make a case for investing in a broader UC strategy.

The same incremental approach applies to your description of specific business processes. By understanding each of the steps involved in a single customer interaction—from the length of time required to complete an action, to the roles of all personnel involved in each action, to the script used to up-sell a customer during a specific interaction—you can build a solid case for a communications strategy that will shave time off each step.

3. Design and run a UC pilot. In larger organizations, IT or a qualified solutions provider partner can create a pilot UC system that gives a segment of users a taste of UC benefits.

Consider designating a control group who will engage with customers using current standard operating procedures. You'll compare this group's interactions—the length of time called for in each step of the transaction, the speed with which steps follow one another, the outcome (sale, no sale, postponement, etc.)—with a second group taking part in the UC pilot. By comparing data points, such as the amount of time it took to locate someone to answer a question a customer had, or how rapidly a call was transferred to a member of the help desk or a person in field support, you will have evidence of places where inconsistent methods of reaching colleagues resulted in lost time, fewer sales and decreased customer satisfaction.

The best pilots typically run over a period of several months, and are followed by a survey that asks users open-ended, qualitative questions, such as:

- How much time do you estimate using the pilot UC system saved you on communications tasks?

- Where did you see gains in your own productivity during this pilot week? In your team's productivity?

- What capabilities of the UC system did you use most? Use least?

Users may answer these survey questions with descriptions of direct benefits, such as, "I was able to get answers more quickly from the sales team when prospects called with questions," or "I did not have to waste time tracking down someone from the marketing group; I knew they were all in a meeting together until noon," or with indirect benefits, such as, "We were able to pool all of our medical personnel so none felt the burden of being on call," or, "Doing so decreased our staff turnover." Carefully document what the users say, because their responses and opinions regarding how the UC pilot helped them work more efficiently is the most valuable tool you have as you seek to demonstrate UC's tangible benefits to management and to justify future expenditures.

> "The key is to understand the nature of the business and look for processes that could benefit from UC."
>
> *- Irwin Lazar, principal research analyst, Nemertes Research*

Thorough RFPs Go a Long Way Toward Successful Unified Communications Deployments

When crafting a request for proposal for a unified communications solutions, think carefully about what business processes need improvement, and which vendors are best suited to meet those needs.

If the term "RFP" makes you or your team glaze over, perhaps you need to take another look.

Yes, it's time-consuming to prepare, but the generation of a Request for Proposal (RFP) for a unified communications (UC) solution is a process that requires you, as the prospective buyer, to think hard about what business processes need improvement, how such improvements might make your organization run more efficiently, and which vendors are best suited to meet those needs.

"Creating an RFP is akin to shopping for a car," said Keith Ennenga, senior technical marketing engineer at ShoreTel. "Ultimately, you want the seller to give you a price that falls within your budget and includes as many of your requested features as possible."

When shopping for a new vehicle, you might have satellite radio, heated seats and 30-plus miles-per-gallon on your wish list. When you're in the market for a UC solution, you may want to request features like integration with Microsoft Outlook; support for interactive voice response applications; or conference-room phones that support multipoint video feeds. "An organization in the finance industry will have different requirements than a school," Ennega said. The key is pinpointing those requirements and asking three or four vendors to tell you how their products will solve your business problems.

Narrow It Down

An RFP, which is in effect a questionnaire you're asking your top prospective vendors to fill in, is different from a Request for Information (RFI). An RFI is a preliminary step that helps you develop your understanding of the landscape of vendors that might meet your organization's needs. Recognize that by the time you are to the point of preparing an RFP, it's best to be pretty serious about choosing one of the vendors who will receive it.

The RFP phase should include a pilot, preliminary budgetary considerations and a proposed implementation timeline. The pilot is like a test drive before you buy that new car. Your RFP should include some broad guidelines about the pilot's scope and duration. "Typically, you see pilots running anywhere from 30 to 120 days, with 60 days being the most common," Ennega said. You should decide whether to test out a UC solution between two branch offices, for example, or in a large department in your organization. Not all details of the pilot are required to go into the RFP. Once you've chosen a vendor and/or its professional services partner, you can fine-tune the balance of the details.

Be aware that some vendors apply some costs of the pilot toward the cost of an implementation if you choose their solution. If you don't buy their product, you probably won't get a refund from the vendor for costs you bore in association with the pilot.

By the Numbers
The RFP is also devoted to getting a sense of the budget commitments for your proposed UC solution. You're asking vendors to estimate the costs of hardware and software associated with an implementation that fits your organization. You're also inquiring about licensing fees, training costs, maintenance contracts costs, labor costs, including programming and professional services performed by the vendor or an authorized partner, plus any costs associated with upgrading to future software revisions, for which some vendors charge separately.

"Make sure you know who is doing what part of the work, whether it's your IT department, the vendor's technical sales team, authorized distributors or other parties," Ennega said. Your RFP also needs to address implementation scenarios, with a discussion by each vendor of how they propose to roll out the type of UC solution you envision for your company.

Allow a few months to complete the RFP, and realize it will entail your IT staff (or your consultants) querying staffers in various departments performing different functions about the degree to which their operations are supported (or not) by the solutions in place now, and what kinds of capabilities would make their jobs easier. All of this information goes toward developing those goals and metrics that will help you build a UC solution that will benefit your organization.

Seek Out Experts
Learn more about preparing RFPs for UC solutions by attending workshops at trade shows, where consultants often compare and contrast RFPs completed by various manufacturers. Many ShoreTel partners maintain libraries of RFPs that companies can customize to their particular needs.

"A good RFP asks vendors how they would solve a particular issue," Ennenga said. "Maybe you have three office locations, each with its own independent telephone solution, and you want to offer extension-to-extension dialing, interoffice paging and other transparent features such as instant messaging or call-center agents working from home. As long as the customer knows the business issues to be addressed, a good vendor should be able to propose workable solutions."

> An RFI is a preliminary step that develops your understanding of the landscape of vendors that might meet your organization's needs.

Why Leasing Your UC System Might Just Make Perfect Sense

In tough economic times, leasing equipment can offer many financial benefits to organizations that want to implement a cutting-edge UC solution while still conserving capital.

When it comes to purchasing hardware and software for a comprehensive unified communications (UC) system, several options exist to help organizations move forward on a platform for future growth. Leasing is one option that is proving increasing popular because it allows organizations to implement a cutting-edge UC solution while still conserving capital.

"How a customer buys a UC system is nearly as important as what they buy," said Tim Gaines, regional director at ShoreTel. "Normally, when people buy phone systems, they look at the phones' features, service plans and other factors, and then decide at the very end of the cycle how they are going to pay for the system. It's better to bring that discussion to the front of the vetting process, and to compare a potential return on cash (ROC) with return on investment (ROI) for each IP telephony purchase option under consideration. You might find that a cutting-edge UC solution is within your reach."

When the numbers are run, it's sometimes surprising to find the most cost-effective method of acquiring the solution is not what a customer initially thought, Gaines added. He sees many raised eyebrows when customers realize that the option that consumes the least amount of cash is often a lease.

Tough Times Enhance Leasing's Appeal

"The current economy means that more companies are feeling the pinch," said Mike Ferry, regional vice president with financial services firm TAMCO. "Cash truly is king, and preserving cash is more important now than ever."

To help customers make the right purchasing decision, ShoreTel has partnered with TAMCO to create ShoreTel Financial Solutions (SFS), which offers a leasing option for the ShoreTel UC system. For customers looking for a financing solution that qualifies as off-balance sheet financing and provides attractive ROI/ROC benefits, SFS offers a lease program called FlexGuard.

"FlexGuard is an all-inclusive managed service program," Ferry said. "In effect, it's a rental program for IP equipment, which is a depreciating asset." By leasing rather than purchasing, the organization conserves cash for other uses and protects its investment in a rapidly evolving area of technology.

"The ShoreTel FlexGuard program provides customers with peace of mind that evolving technology and constantly changing business needs will not have a negative impact," Gaines said. "FlexGuard allows more customers to take advantage of ShoreTel's leading technology without the usual risks associated with ownership, such as maintenance costs, system obsolescence and shifts in marketplace demands."

Do the Math and Free up the Cash

The potential cost savings of leasing over purchasing can add up quickly, leaving cash free for other, more strategic uses. Factors that go into the lease versus buy assessment, including amount of cash on hand, amount of money owed to creditors and long-range business plans, need to be examined on a case-by-case basis and in consultation with a financial advisor or accountant, Gaines advised. Ideally, both an organization's IT staff and its financial officers should discuss these issues at the beginning of the UC solution procurement process.

"TAMCO works closely with organizations to help them choose the best plan for their needs today, with a strong focus on their plans for tomorrow," said Ferry. "For example, many customers prefer to make fixed monthly payments with an option to purchase the equipment outright at the lease's conclusion. This way, they chip away at the cost to own the equipment over time, opting to put it in the balance sheet and to take depreciation when their particular financial picture supports it."

The FlexGuard System-Replacement provision protects customers from unforeseen changes in the status of their business. Flexible end-of-term options and co-terminus additions make it easier to buy other products as required, such as when a company opens new branches or closes existing offices. "Customers can opt for an all-inclusive service clause that locks in tomorrow's maintenance at today's discounted prices," Ferry said. "Actual repair and maintenance is carried out by ShoreTel and its certified partners, which offers peace of mind and helps ensure business continuity."

To help organizations keep cash in the bank during an economic downturn, leasing UC system gear might make the best financial cents. For more information about ShoreTel Financing Solutions, e-mail info@shoretel.com or call (877) 807-4673.

> The cost savings from leasing can add up quickly, leaving cash free for more strategic uses.

The Seven Most Common Mistakes of IP Telephony Deployment — and How to Short-Circuit Them

All kinds of issues can crop up as organizations make the switch to converged voice/data networks. Here's how you can avoid the seven most common deployment mistakes.

After years in the field implementing hundreds of IP telephony systems, Norm Jones has seen all kinds of unusual situations as organizations make the switch to converged voice/data networks. An implementation services project manager at ShoreTel, Jones shares the seven most common deployment mistakes he's seen on the job.

1. **Skipping network assessments.** "A thorough network assessment is critical for multisite deployments of IP telephony, and even for single sites," Jones said. Tests assessing network latency, packet loss and jitter are conducted with software agents that simulate voice traffic transmitted across a legacy data network.

   Thorough network assessments analyze traffic over a matter of days, gathering data points that help customers judge the readiness of their network to handle the impending surge of real-time voice traffic. Point-in-time assessments measure only the network's behavior at a single moment, and thus are apt to miss sporadic capacity shortages that take place during scheduled network replications or bulk-file transfers, for example.

   Performing a network assessment isn't just a best practice. When it comes to deploying ShoreTel's *Pure IP* Unified Communications solution a customer must conduct a network assessment before deployment as a part of ShoreTel's corporate policy. If the customer conducts the assessment internally with its own staff, its officials must sign a network-assessment waiver before ShoreTel can proceed with the implementation. Learn more about ShoreTel network assessments.

2. **Omitting site surveys.** Another up-front consideration is a site survey, which entails the mundane but necessary work of looking at exactly what equipment is in use around the location. "Customers don't always spend the time looking under everyone's desk to see if they have an Ethernet hub there," Jones said. "Then all of a sudden you learn that they don't have dedicated cabling to the desktop or you find an area where they put in an inexpensive hub or an unmanaged switch that feeds a bunch of printers." Most installations have a Power over Ethernet switch which provides power to the IP phone. If there is a hub or switch under the desk or in a small closet, the power will not make it to the phone. While it may seem time consuming to do a walk-through for the site survey, it helps IT understand the exact terrain that will be rolled over to IP telephony.

3. **Staying in the dark about trunks.** The IT staff may not be in regular enough communications with carriers to know whether ground-start or loop-start trunks (a.k.a.

Plain Old Telephone Service (POTS)) are in use in the organization's telecommunication network. "Ground-start trunks are often from the legacy days, but if you have ground-start into your PBX, when you attempt to cut over the lines to the IP telephony system, you won't get any dial tone since it is not supported." Carriers can make the change for you to convert to loop-start trunks, but expect up to a month's delay as they do so, Jones cautioned.

4. **Not knowing other key circuitry details.** Get all the information you can from your carrier as you prepare to cut over, such as confirming that the D channel is on the 24th channel when you order a new PRI. "In some instances, the D channel is on some other channel, and this is something that is not changeable on our side," Jones said. ShoreTel implementation staff will also need to know the type of Central Office switch in use, and how many digits (four, five, seven or 10) the carrier will send. "We recommend that it matches the extension length of the end-user at the company site or sites," Jones said.

5. **Sticking with old client operating systems.** "Some people are shocked we don't support Microsoft Windows 2000 anymore," Jones said. "We would hope everyone has Microsoft Windows XP by now, but that's not always the case." However, earlier versions of ShoreTel software, including 6.1, do support Windows 2000, while upgrades to the current version of ShoreTel can be quickly handled by administrators. "The best step here is to communicate the desktop requirements with your solution provider before the project starts."

6. **Not including training.** Adequate training of administrative staff who may be adding new employees into the phone system, supervisors who will be running both real-time and historical usage reports and other users who will use the phones in the office and on the road is too often overlooked, Jones said. It's not hugely time consuming to teach people how to use the ShoreTel system; one to two hours are required to teach most employees the functions relevant to their roles within the organization. But those hours can make a huge difference in terms of your organization's ability to get the most out of its IP telephony deployment. Training should be discussed and scheduled in conjunction with the cutover to IP telephony. Training can be provided by ShoreTel partners or from ShoreTel directly.

7. **Cutting over on a Friday night.** Many organizations first consider a weekend as the ideal time period in which they will make the switch to IP telephony, but Jones advocated a mid-week schedule. "For one thing, you want to schedule your training for the day prior to cutover so it's fresh in people's minds." Also, ShoreTel services or your solution provider should be on site on the go-live day to review procedures as end users get accustomed to their new phone system. Having on-site support from your reseller or ShoreTel may come in handy to explain how to access corporate voicemail from outside or to review the auto-attendant menu with end users or to link up that lone overlooked fax machine.

> A thorough network assessment is critical for multi-site deployments of IP telephony.

Keep Your Network Primed for IP Telephony

Take steps now to prepare and protect the data network for the demands of voice and video communications.

Unified communications (UC) promises a world where workers can use any device they choose to fulfill most any communications need. Organizations moving toward UC must take steps now to prepare the corporate data network for the advantages of unified communications.

Understand the Security Threats

Key among these preparations is a thorough examination of the security measures that are in place to protect communications among employees, customers, business partners and vendors. A complete network security assessment helps eliminate the risk of compromising the always-on nature of voice calls that users expect. An assessment fully evaluates new security threats and management challenges, as IT staff work to prevent eavesdropping, control the number and type of devices using the network and guard against unauthorized usage of the network.

"Security is a vital part of planning for and deploying a new UC system," said Trent Waterhouse, vice president of marketing for Enterasys Networks, a ShoreTel partner and maker of secure network infrastructure.

"IP telephony has the same security challenges as traditional data networking plus some additional security challenges of voice networking," Waterhouse said. As with data networking, administrators must protect the network against threats like viruses, malware and denial-of-service attacks. Administrators should ensure that their network security defenses protect against known and newly discovered threats and software vulnerabilities.

But there are unique concerns, too. For instance, IP phones in open environments like reception areas or lunchrooms must be secured to prevent unauthorized users from accessing the company network through the Ethernet port on the phone, Waterhouse noted.

"Organizations need to ensure the same degree of reliability for IP telephony that they've taken for granted in decades of land-line usage. IT must be able to easily manage the system, including having centralized visibility and control over user privileges and feature sets," said Waterhouse.

A Layered Approach

Securing against these types of threats requires layering various security tactics. At minimum, Waterhouse said, the following steps are essential for organizations tackling an IP telephony deployment:

A network security assessment helps eliminate the risk of compromising the always-on nature of voice that users expect.

1. **Verify your network can meet high-availability expectations for voice service.** "Can location A always make a call to location B? People expect to always hear a dial-tone," Waterhouse said. Bear in mind that quality-of-service considerations vary for voice and data traffic.

2. **Ensure that the network has enough bandwidth.** Voice calls don't require a lot of bandwidth, but unexpected latency or jitter can interfere with quality of voice calls. ShoreTel's ShoreWare® System Monitor monitors network hardware and bandwidth to ensure that the IP infrastructure provides the highest level of reliability and voice quality.

3. **Ensure there are enough Power over Ethernet (PoE) ports.** "We sometimes have to help customers who don't thoroughly plan for the deployment and do not account for enough PoE ports to support their new IP phones," Waterhouse said.

A Growing IP Infrastructure
The sheer rise in the number of devices on the network means IT groups must be increasingly vigilant to protect against viruses, hackers and other threats. Moving forward, dozens of different types of workplace devices, from security cameras to air-conditioning controls to copiers, as well as telephones, computers and badge readers, will be networked, with IP telephony and Ethernet providing the glue that binds them, Waterhouse said. Organizations must keep a close eye on their IP network as devices proliferate.

Find out more about how you can ready your network to meet these new challenges while still taking advantage of IP telephony's benefits by reading Enterasys' Secure Convergence whitepaper.

Disaster Recovery for Your UC System: Design Reliability into Your Architecture

Reliability, disaster recovery and business continuity are inextricably intertwined. Your UC system should be designed with reliability in mind, and be able to recover swiftly from unplanned downtime.

As every IT manager knows, life happens. Whether it's because of a major storm or earthquake or even a minor outage triggered by a downed power line, when the network goes down, a couple of sleepless nights can easily follow. But in an organization that's invested in a business-critical unified communications (UC) system, when the network goes down, implementing a proven strategy to keep communications lines open and recover quickly is all the more important.

"Organizations need a powerful combination of a reliable distributed architecture that is remotely survivable and, at the same time, easy to manage," said Rich Winslow, senior sales engineer at ShoreTel.

Reliability, disaster recovery and business continuity are inextricably intertwined. A system that supports each of these factors—overall reliability that ensures a high level of uptime, a disaster recovery plan that minimizes downtime, and a business-continuity strategy that keeps operations as normal as possible during a minor or major disruption —is key to any organization's successful UC implementation.

To help organizations ensure high communications availability, the ShoreTel *Pure IP* UC solution is designed for exceptional reliability and optimal business continuity. "The ShoreTel UC system is designed to be very robust," Winslow said. "The only moving part is a fan to cool the inner workings of the switch. That's one factor that contributes to the appliance's mean time between failure of more than 12 years as well as its delivery of more than five-nines of availability to users."

Minimize Risk of Failure

A server-based architecture typically results in more failures because servers depend on hard disks, which are renowned for reliability issues. However, a hardware platform that is not dependent on spinning media provides exceptional reliability. In the ShoreTel UC system, PBX functionality runs on small, dedicated switches that provide dial-tone independence from other network elements.

In addition, some competing systems place numerous functions, including routing, switching, firewall and PBX, on a single device—a potential case of too many eggs in one basket, since any one failure will impact all other services.

ShoreTel offers proven solutions that help keep communications available and reduce the risks associated with downtime.

"Disaster-Proof" Architecture

In the event of an outage at one location, the distributed architecture of the ShoreTel UC solution helps ensure that features stay live at the other locations.

"The ShoreTel system is a fully distributed IP-based UC system with no single point of failure," Winslow said. "Call control is distributed to intelligent gateways called voice switches. In addition, voice applications, including voicemail and automated attendant, run on standard server hardware from anywhere on your IP network."

In the event of a wide area network failure, the voice switches, including all the phones and trunks, continue to operate at the remote site without any delay or feature degradation. Unlike a centralized architecture, which may require several skill sets to manage and recover, the ShoreTel UC system is a single-image system across all geographies, with complete feature transparency. Dial tone is never lost, so callers do not detect any faults.

Presence, Other Features Stay Live

Furthermore, presence status, which enables callers to see whether the people they are calling are available, IM discussion and other communications features continue to be supported through a switchover, and remain accessible through ShoreTel's ShoreWare® Call Manager. For organizations with a business-critical communications system, the robust disaster recovery features of the ShoreTel UC system help keep everyone in touch, whether there's been a terrorist attack, a snowstorm or simply a spike in the number of staff who work remotely.

"With the ShoreTel UC solution, employees can simply log in from home, and then take full advantage of inbound and outbound calling features and all data applications," Winslow said. "As telecommuting increases in the face of greater concern for the environment and a more distributed workforce, these features help organizations maintain a professional brand, even when half of the employees are working from home, in hotel rooms or elsewhere during the course of business travel."

The ShoreTel UC system supports remote backup sites at redundant data centers. In the event of a disaster that alerts the backup site to go live, key capabilities of the ShoreTel UC phone system remain intact during the switch from the primary server to the backup server. The switchover takes seconds or minutes, depending on the network configuration and where the primary and secondary ShoreTel sites are geographically located.

Interconnectedness' Risks and Benefits

In today's interconnected world, virtually every aspect of a company's operation is vulnerable to disruption. In a competitive environment, even a few hours of downtime could prove catastrophic. Keeping all lines of communication open is essential to

maintaining continuous daily operations and staying in touch in an always-on, global environment. The ShoreTel UC system offers proven strategies that help keep communications available and reduce the risks associated with downtime, including lost revenue, degraded customer service and lost productivity.

"Regardless of the features installed, organizations need a communications system that is rock-solid from an architectural point-of-view," Winslow said. "ShoreTel provides a structurally sound foundation that helps ensure users have continual access to its state-of-the-art feature-rich environment."

For more information about ShoreTel's approach to designing UC solutions that can recover quickly from both minor outages and major events, see Building Reliable IP Telephony Systems, a white paper prepared by Ed Basart, ShoreTel's CTO and co-founder.

The Globe Turns Toward Unified Communications

Whether sprawling conglomerates or nimble startups, businesses need effective communications across their locations and with their customers—across often-sizeable barriers of geographies and time zones.

Tight economic conditions around the globe are placing new emphasis on productivity improvements and cost savings at companies of all sizes. Sprawling multinationals and nimble startups alike require effective communications with partners and customers, regardless of geographies and time zones. From easy integration into existing infrastructure to anytime, any-device communications among employees, partners and customers, unified communications (UC) offer the efficiency of ubiquitous communications that are simple, reliable and affordable.

As UC marches across the globe, organizations of all kinds—the Hamburg-based manufacturer, the call center in Colombia, the retailer in Dubai—are discovering the benefits of IP-based communications. In 2007 alone, 71 percent of lines shipped worldwide were IP-capable, according to Frost & Sullivan's World Enterprise Telephony Market report. The fastest growing regions were Central America/Latin America and Asia Pacific. (North America and Europe are the most mature markets for IP telephony and thus had the slowest growth.)

Ready for Global

As communications around the world expand, UC is no longer a luxury tool that only large enterprises and multinationals can afford. Increasingly, organizations, are using UC to transform the way they do business, whether they have a presence in multiple countries or not. For organizations around the globe that are looking to adopt a new UC system, the following criteria are key considerations for a successful implementation:

- **Customizable.** The UC solution must be customizable according to language requirements, existing telecommunications infrastructure, office size, number of employees and other industry-specific parameters.

- **Centralized management.** Centralized management of the UC system is essential, even with offices that span 12 time zones and six languages. By centralizing and simplifying system management, organizations can greatly reduce costs and save time. For example, an administrator in London can take advantage of time zone differences and easily add an extension for a new employee in Tokyo ready for work the next day.

- **Feature-rich environment.** Ultimately, the efficiencies to be gained through the deployment of UC solutions span countries, markets and languages. Consider e-mail alone: one thread of back-and-forth messages on a subject can be dealt with at once in a real-time chat or voice conversation, with UC's presence feature enabling callers

to locate their parties that much more quickly and attain the answer to a question that much more efficiently.

- **Reliability.** If one location goes offline, a fully redundant system ensures that communications between other locations continue with no negative impact.

However, it is also important to recognize that the needs of organizations even in two adjacent countries can differ substantially from each another, with several factors in play. For example, countries with national telecommunications players like Siemens in Germany or Alcatel in France are exhibiting slower UC adoption rates. Given the size of their traditional TDM base and the relative immaturity of their UC products, there's simply not as much incentive for these countries to migrate to voice over IP (VoIP), said Mark Swendsen, managing director for ShoreTel's Europe, Middle East and Africa (EMEA) sales and operations.

London-based research firm MZA Consultants has examined worldwide patterns of UC adoption, Swendsen noted, with rates in some European countries about as high as in the U.S. "That includes countries such as the United Kingdom, Ireland, Spain, Italy, Belgium, Holland, Denmark, Norway and Sweden."

That's where ShoreTel is poised to help organizations around the globe improve their productivity.

"ShoreTel offers the only *Pure IP* UC platform that can be operated, supported and managed as a single image across geographies," Swendsen said. A single ShoreTel UC implementation can support multiple languages, and configurations can be customized so that callers from different countries will hear voice prompts in their native language.

Country-By-Country Customization

"A good UC solution will fit into any country's technical expectations with 95 percent accuracy, but it's that additional five percent of customization that makes all the difference in terms of swiftly and correctly bringing online an office poised to reap the benefits of anywhere, any-device communications," Swendsen said.

That's where ShoreTel's global reach—attained through a mix of the company's own worldwide offices and those of certified ShoreTel partners—plays an important role in ensuring the success of a UC strategy. As part of its commitment to customer satisfaction around the globe, ShoreTel provides:

- Native language modules, available in 18 languages

- Support for more than 20 countries' dial plans

- Round-the-clock technical support

- Single-console management spanning a distributed UC architecture, which:

  - Simplifies training

  - Reduces management overhead

  - Saves troubleshooting time

ShoreTel's *Pure IP* Unified Communications solutions are proven to delight customers and meet the changing demands of organizations in today's global marketplace. Learn more or find a ShoreTel reseller in your part of the world.

ShoreTel Gives IP the Green Light with Up to 62 Percent Energy Savings over Cisco Solution

The ShoreTel Pure IP UC solution uses between 27 percent and 62 percent less energy than Cisco's competing solution, so organizations with ShoreTel gain a greener environmental footprint and greener financial savings.

When it comes to energy savings between competing IP unified communications (UC) systems, sometimes the grass truly is greener on the ShoreTel side. In a report by The Tolly Group, an independent research firm, testing showed the ShoreTel UC system used between 27 percent and 62 percent less energy than Cisco's competing solution. For organizations implementing ShoreTel, this difference translates to a greener environmental footprint, as well as greener financial savings.

Interestingly, none of these energy savings is achieved at the expense of compromised performance or reliability. The ShoreTel UC system was designed from the ground up with energy efficiency in mind, and it deploys highly efficient voice switches, IP telephones and other equipment. As a result, customers receive a high performance, highly reliable UC system that delivers great total cost of ownership (TCO).

Energy Consumption of ShoreTel and Cisco Unified Communications Systems for Different System Scenarios
As extrapolated from key power measurements
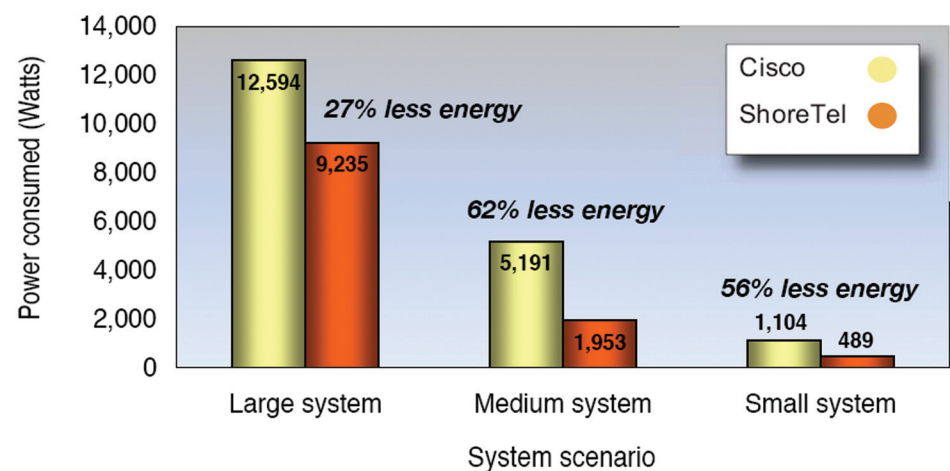
Note: Large system was comprised of ~1,500 users across a main headquarters site, a remote office (200 users) and a satellite office (50 users). Medium scenario included 350 users across one headquarters site and 19 branch offices. Small scenario included 65 users at a single site.

Source: The Tolly Group, September 2008

Key findings of The Tolly Group report, which was commissioned by ShoreTel, show that the ShoreTel UC system consumes:

- 27 percent less power in a large enterprise network scenario

- 62 percent less power to support a medium enterprise scenario

- 56 percent less power in a small office scenario

As the cost of energy rises, businesses must consider the ramifications—both economic and environmental—of any UC solution that uses power resources inefficiently, said Kevin Tolly, founder, president and CEO of The Tolly Group. "The reduced power usage of ShoreTel's UC system translates into lower cooling expenses, which results in lower cost of ownership," he said. "For today's energy-conscious buyer, the green footprint is increasingly important."

A Head-to-Head Green Comparison
In The Tolly Group's methodology, testers measured power consumption of both the Cisco and ShoreTel UC system components, then used a calibration factor—the difference between the measured power consumption of each device and the official published power consumption found in each vendor's official data sheets online—to analyze the extrapolated data. That factor enabled testers to derive an effective value that represented the maximum power consumed by the tested device.

Using this methodology, The Tolly Group reported that in a typical midsize enterprise deployment, ShoreTel products require 62 percent less energy than Cisco's Unified Communications Manager. Specifically, Tolly projected costs for a network with 350 users across 20 sites. At the headquarters site, 65 users were supported by: three ShoreTel ShoreGear® 50 voice switches providing N+1 redundancy, a VoIP application server, a conference bridge and a ShoreGear T1 to support PRI trunks. In addition, each of 19 branch offices in this scenario supported 15 users with a ShoreGear 30 voice switch and IP telephones. In this particular scenario, the 62 percent reduced energy consumption of the ShoreTel UC system represents significant savings.

Tolly also conducted tests across large and small enterprise IPT deployments, with equally noteworthy results. First, in a 1,500-user network covering a headquarters site as well as regional and branch offices, ShoreTel's UC system, which comprises ShoreGear Voice Switches and ShorePhone™ IP Telephones, used 27 percent less power than Cisco's deployment of comparable size. Lastly, in a self-contained, single-site office with 65 users, the ShoreTel solution showed a 56 percent power saving over Cisco's.

Organizations of all sizes are becoming increasingly conscious of the energy footprint and costs of their business tools, including communications systems. Tolly experts advise

> In an multisite environment with 350 users, the ShoreTel solution showed a 62 percent power saving over Cisco's.

that not only does lower energy consumption decrease the total cost of ownership, but also it has a net positive impact on CO2 emissions. IT buyers are advised to factor in the "green" footprint, as well as the features and functionality, of a UC system.

Download the complete Tolly Group report.

The Secret Sauce to SIP Trunking

Familiarizing yourself with a few fundamentals of SIP will go a long way when upgrading to SIP trunks to support IP telephony.

Upgrading to SIP trunks to support your unified communications (UC) goals? Knowing a few fundamentals of SIP will pave the way for the smoothest transition possible, regardless of the size of your organization.

SIP is the open, de facto standard used by virtually every data- and voice-networking vendor in the industry. Developed by the Internet Engineering Task Force (IETF) and designed for flexibility and expansion, SIP has simplified the kind of integration that once required elaborate and complex coding to make these kinds of communications possible.

The secrets to a successful SIP implementation revolve around the three Ss: standardization, security and sufficient bandwidth:

- **Standardization.** Not all SIP-compliant vendors' products are as interoperable as they claim. "Being an open standard, SIP is open to interpretation," said Jerome Joanny, senior product manager at ShoreTel. "ShoreTel certifies its SIP partners' technology to ensure that a potential lack of interoperability does not create deployment issues for the customer." As a result, a ShoreTel certification helps ensure that the ecosystem of products required to deploy a fully SIP-enabled network will work together smoothly.

- **Security.** Customers must consider new security ramifications with SIP. For example, SIP trunking requires a session border controller (SBC) at the network edge to allow or block calls at the network border by examining SIP metadata. To ensure appropriate security, ShoreTel recommends the use of an SBC in any customer installation using SIP trunking, and the Ingate SBC is certified to work with the ShoreTel UC solution in a SIP deployment. To help IT administrators learn more about SIP and how it works, ShoreTel and its certified partners offer seminars and Webinars. See the training section on ShoreTel's web site for more information.

- **Sufficient bandwidth.** "Your network is now your Internet pipe and your voice pipe," said Joanny. "Organizations must ensure that users' requirements for voice, data, videoconferencing and other applications can be met with the current network bandwidth to guard against network latency, jitter or other performance issues that may impact overall communications quality." Joanny also advised organizations to consider a network assessment to verify whether current network bandwidth is sufficient or in need of an upgrade.

Plug in and Play Perfectly
The benefits of SIP vary according to the size of the company. "Small and midsize companies are migrating to SIP trunks because they can realize immediate cost savings

Companies migrating to SIP trunks can realize an immediate cost savings and centralize infrastructure.

by moving away from legacy trunks, which are costlier to maintain and always a problem to procure quickly," Joanny said. "Larger enterprises adopt SIP trunks not only for the potential cost savings, but also for the benefits inherent in centralizing infrastructure." Instead of supporting an ISDN connection at every office or company site, a company can realize significant cost savings and simplify operations by centralizing and managing all SIP trunks from a central location.

Another important factor to consider as organizations prepare to move to SIP is aligning with a carrier certified to handle SIP trunking. Legacy carriers, who may require months of notice to provision new bandwidth, are simply unable to deliver the extensibility and flexibility inherent to SIP, while Internet telephony service providers (ITSPs) can often provision new trunks in a matter of days.

"ShoreTel has a very pragmatic approach to SIP trunking," said Steve Weinstock, senior technology partner program manager at ShoreTel. "Instead of merely claiming that our SIP trunking implementation is standardized, as some vendors do, we work very closely with ITSPs and craft an end-to-end solution with them and with other certified technology partners. We want our customers to be 100-percent confident that when they plug it in, it won't just play—it will play perfectly."

See ShoreTel's Certified Technology Partners for SIP.

See the Future Now: Affordable, Reliable Desktop Video Conferencing

Desktop video conferencing can increase productivity and lower costs, but high quality traditionally has come at a high price. Learn how affordable, high-quality desktop video conferencing can transform corporate communications and the customer experience.

Video has the potential to transform corporate communications, whether it's by accelerating the teamwork among remotely located employees, or by allowing a customer in one branch to look into the eye of an expert at another. This personalization of communications helps increase productivity and lower travel-related costs for real competitive differentiation.

But until now, both technological and usability obstacles remained, mainly due to low quality video experiences combined with very complex set-up and operational procedures. And, when it comes to personal video "calling," no one wants to get caught on camera in their pajamas, or be prevented from multitasking (via instant messaging (IM) or e-mail or both) when taking a call at their desk.

Videoconferencing Made Easy

ShoreTel's latest edition of ShoreWare® Professional Call Manager addresses those problems, and opens the door for companies to realize the potential of video as a well-integrated piece of a unified communications (UC) whole. Users can preset ShoreWare Professional Call Manager to either automatically switch to video mode, or turn on at the push of a button. The single integrated user interface in ShoreWare Professional Call Manager simply enables one employee to "call" another employee via voice, video or IM with a single click.

In addition, ShoreWare Professional Call Manager makes poor-quality video experiences a thing of the past, because it uses the Scalable Video Coding (SVC) component of the latest H.264 video standard. With SVC, desktop video can have resolution up to 640 x 480 and up to 30 frames per second with minimal latency, and without bringing the rest of the company network to its knees.

Increase Productivity and Customer Satisfaction

By addressing both video quality and what industry experts call "ease-ability," ShoreWare Professional Call Manager delivers the benefits of integrated, internal video communications at an affordable price point.

ShoreTel opens the door for companies to realize the potential of video.

A recent research report "UC End User Productivity: How End Users are Finding Value from Unified Communications," produced jointly by Jamison Consulting and COMMfusion, provides detailed illustrations of the benefits of video communications, including:

- Generally increased productivity, thanks to reduced time spent connecting with other employees and getting to the heart of any issue;

- More effective team collaboration, because video makes it easier to set up meetings and reach decisions quickly;

- Visual access to internal experts, whether for employee or customer questions, particularly in complex or sensitive situations such as in a bank branch;

- Building trust among employees working in remote or home offices through face-to-face interaction;

- Cost savings on travel.

The Jamison research also quotes users verbatim, with detailed illustrations of how these benefits translate into real business value.

- "The video was most surprising. It is better quality than I expected, easier to use and really makes a difference in relationships."

- "Not only can remote people interact with people in the main office, we all get to see them. People joke around more and build relationships faster with remote people thanks to videoconferencing."

Another user in the Jamison study described video's usefulness to his company's hiring process:

- "It's allowed my team to make decisions faster. They've been able to collaborate better. For example, we hired someone this year and we had him interview with other members of the company via videoconferencing. We never did this before. That saved about a month in terms of the interview cycle."

Despite the obvious benefits, some users in the Jamison study were hesitant to use video at their desktops. The reasons they cited ranged from concerns they wouldn't be able to multitask during meetings if people could see them, or worries that they would have to wear business attire even though they worked from home and didn't usually dress up.

However, with ShoreWare Professional Call Manager, users can decide to accept video all the time or on a call-by-call basis. Laurent Dinard, ShoreTel's senior product manager for collaboration software, including ShoreWare Call Manager and Converged Conferencing, explained how this option works: "You can tell the software to automatically switch to video mode, or switch on demand. If you want to accept video whenever it's requested, video will just happen. All you need is a webcam. When you receive a call, as soon as you pick up the handset, or take the call via the integrated SoftPhone, the video window will pop up. With the ShoreTel UC system, video is not something the user has to learn separately, it just pops up and goes."

The video component of ShoreWare Professional Call Manager can be used to enhance customer service, too. "The video feature allows organizations to elevate the level of customer service so that a customer can speak to someone face-to-face to obtain the information they need. This is particularly useful in a situation that involves a multifaceted service, such as banking and insurance," Dinard said. "Instead of referring a customer to another number, right then with the customer in your office, you can have a virtual video meeting. Turn your screen around, and your customer is talking to the right person and getting questions answered right away."

Download the data sheet for ShoreTel's ShoreWare Call Manager product family.

Does Your Current Communications System Support Today's Mobile Enterprise? Five Key Requirements for Success

Mobility is a non-negotiable requirement for any unified communications (UC) solution today, but not all UC systems make it easy to be mobile. Learn which five key mobility capabilities must be supported by a best-in-class UC system to meet the demands of today's always-on business.

Over the past decade or so, mobile phones have become an indispensible business tool. Yet many employees find themselves juggling communications between their desk phone and mobile phone, and struggling to keep track of voicemails and call backs. To achieve true mobility, these employees must be able to control their communications so important callers can easily reach them when they are available, and there is complete transparency between on the road and in the office.

"True mobility means that you can communicate easily using whatever device you have in your hand at that moment," said Chuck Neumann, mobility product manager at ShoreTel. "True mobility means having a mobile phone or smart phone that can cover all of the bases, rather than having a belt-clip full of devices. It means having a mobile phone that serves as a full-function extension to your IP desktop phone."

A best-in-class UC system should support five key mobile capabilities to meet the demands of today's always-on business. These features are:

1. **Mobility integrated into the UC architecture.** Mobile capabilities should be designed into the UC architecture from conception, which results in a UC mobile system that's easier to use and administer and helps achieve a low cost of ownership. With many TDM PBXs and IP PBXs, mobility is a bolt-on feature which requires the purchase and installation of additional products. But a UC system with fully integrated mobility features results in fewer additional components to build in and maintain. In addition to reducing costs, this also helps to improve reliability and to lower risk.

2. **No-hassle use.** Salespeople, field service professionals and other road warriors aren't the only ones who need to be productive while on the go. Mobility can help many knowledge workers become more productive when they are away from their desks. "If 80 percent of a company's workers are away from their desks 20 percent of the time in meetings or traveling the corridors, productivity will improve tremendously if these folk can continue to communicate seamlessly as if from their desks," Neumann said.

A UC solution with optimum mobile support should provide workers with a uniform experience and full capabilities, whether they use a desktop client, desk IP phone or

> "True mobility means that you can communicate easily using whatever device you have in your hand at that moment."
>
> *-Chuck Neumann, mobility product manager, ShoreTel*

mobile phone. Workers must be able to conduct the same tasks, such as accessing the corporate directory and listening to corporate voicemail messages, and have the same controls over their accessibility based on their presence status. Recent improvements in speech recognition technology have made it easier for the average person to reduce the hassle of a small phone interface when mobile. This technology is critical as hands-free phone usage while driving becomes the law and not just a sensible practice.

3. **Broad support for mobile devices.** Users must be able to choose the mobile devices and smartphones that best fit their work style and corporate culture, rather than having the UC system dictate which mobile phone they should use.

4. **Enhanced call routing.** The ability to reach someone instantly is at the core of UC solutions. Users must have control over when and how they are reached with call-handling modes, so important calls reach the right party while users maintain high levels of productivity.

5. **Support for presence, IM and other UC capabilities.** An ideal UC system supports the full range of UC capabilities, including IM, e-mail and voicemail, video communications and presence status. Presence status makes it easy to determine workers' availability, and offers individuals control over how their own availability is presented.

ShoreTel's Support for Mobile Workers
When considering a UC system that meets the needs of people whose jobs are outside of the office, as well as individuals inside the building who are frequently away from their desks, organizations must ensure they start with the right foundation. The ShoreTel UC system is designed on a distributed IP PBX architecture that delivers unmatched reliability and scalability. This architecture, combined with an intuitive and feature-rich user interface is leading the industry for ease-of-use and system manageability.

ShoreWare® Mobile Call Manager is an integral part of ShoreTel's solution and consists of client and server software components presented in an easy-to-use interface. ShoreWare Mobile Call Manager provides fast access to voicemail, with a visual display and audio preview of messages. The Mobile QuickDialer function provides direct connection to the corporate directory and calling history, so that users can quickly find the right contact from enterprise and personal directories—and connect instantly.

Users can control their personal options from their mobile phones, including call-handling modes and Office Anywhere settings, which allows them to forward calls from their office phone to another number. With the "Find-Me, Follow-Me" capabilities of Office Anywhere, users can dial from any home or cell phone but still pass along the company caller ID, which protects the privacy of the staff and presents a professional brand.

These user-friendly features—and more—help mobile workers maximize their productivity while presenting a customer-centric approach to communications. The ShoreTel UC system was built on a platform designed to support the evolution of UC capabilities and the integration of business processes. Today, it supports the full range of UC capabilities, including IM, e-mail and voicemail, and video communications.

Learn more about ShoreTel's support for the mobile enterprise.

Four Considerations for Selecting IP Phones

Businesses need phones that really work for them. Here's what every organization should know before selecting new phones.

Regardless of industry or marketplace, all organizations share a common need: phones that really work for them. Whether your enterprise is large or small, a high-quality, reliable phone system is essential to success. IP phones come with a broad range of capabilities and styles to provide your employees the phones that meet their specific needs and fit their individual job requirements. With ShoreTel ShorePhone® IP phones, you can easily fit the phone to the employee, so you aren't forced to buy more (or less) phone than you need.

IP Phone Selection Criteria

When buying new IP phones for your business, there are four key areas to consider:

1. **User Experience.** Think about how much time your users spend on the phone. With an elegant, ergonomic design, ShoreTel IP phones feel nice in your hand and against your ear. Using the phone is intuitive and easy. With ShoreTel phones, users can see at a glance who is calling, get a quick read on missed calls or unheard voicemail messages, and clearly see whether a call is on hold or muted.

2. **Sound Quality.** Not all vendors' IP phones are known for outstanding sound quality. ShoreTel IP phones deliver crystal clear audio quality, so there's no question that calls come in loud and clear. Whether individuals are on a conference call, speaker phone, or talking one-on-one to an important client, ShoreTel phones deliver outstanding sound quality and noise reduction capability. Wideband audio that delivers exceptional fidelity comes standard in all ShoreTel IP phones.

3. **Different Needs.** Different types of users require different phones, and there's no need to provide users with features they don't need or use. Conversely, some employees may be more productive with a phone that provides more features. For instance, a receptionist or executive assistant who juggles multiple demands is well-served with a phone that offers more call appearances and a color screen that clearly indicates a call's status. On the other hand, a cozy retail boutique might be well served with phones with key system functionality.

ShoreTel also offers an intuitive PC interface as standard. With ShoreWare® Call Manager, employees have an unprecedented level of control over their telephone communications. ShoreWare Mobile Call Manager provides mobile users with easy access to corporate systems. With software that runs on their mobile devices, users on the road still have instant, visual access to their corporate directory, voicemail and call history.

ShoreTel offers three categories of IP phones, so there's always a phone that matches your needs.

4. Low Total Cost of Ownership. The cost of any phone goes beyond the initial purchase price. Consider the cost of configuration and software updates. Besides the money saved by accurately matching your employees' functions to the right phones, all ShorePhones support plug-and-play installation, which reduces deployment time and eases the administrator workload. ShoreTel's easy-to-use management interface, ShoreWare® Director, automatically discovers and adds new devices to the system when you connect new phones to the network, and automatically installs new phone firmware, further reducing administration costs.

A Broad Range of ShoreTel IP Phones
Selecting phones that are best suited to your enterprise's needs allows your business to run smoothly, with cost-effective, clear and reliable lines of communication.

ShoreTel offers three categories of IP phones: Essential, Professional, and Executive, so whatever your employees need, there's a phone that matches their needs.

Learn more about ShoreTel phones.

Learn more about ShoreWare Mobile Call Manager.

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