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Unified Communications Buyer's Guide

Focus Research
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Executive Summary

Business communication technology is constantly evolving as employees seek better ways to find the information they need and reach customers faster. For larger companies, the next stage in this evolution is UC (unified communications). UC enables organizations to communicate and collaborate more efficiently, more accurately and in real-time no matter the location. UC also gives marketing, sales and support teams the tools they need to offer their customers superior service.

UC combines voice, video, email and IM (instant messaging) into a unified platform. It also integrates applications, such as presence — knowing where any employee is at any time and automatically selecting the best way to reach him or her. A UC solution extends the capabilities of your existing IP network to include sophisticated telephony, messaging and conferencing features, and it doesn't require a major overhaul of your IT infrastructure.

This Buyer's Guide explains the UC market and tells you what to look for in a UC solution.

The bottom line is that UC applications provide:

- A way to integrate all communications into one platform
- New communication functions and features
- Significant overall cost savings by integrating to a single underlying platform
- Major improvements in operating efficiency through a standardized approach to all organizational communications
- Full and proper integration of both mobile and global employees and operations

Unified Communications Overview

No matter what industry you're in, your company's success rides on the ability of your employees to communicate quickly and effectively with each other — not to mention with your customers. The right technologies can give you a competitive edge in this area.

Companies continue to rely on the same communications tools that have been successful for decades — such as the fax machine — while also embracing newer technologies, like corporate IM. Established methods are just as important as ever, even though enterprises are starting to shift toward IP-based communications, according to Gartner Inc.'s 2008 "User Survey Analysis: Unified Communications, North America and Western Europe" report.

UC integrates five areas — **video, voice, email, conferencing and IM** — onto a single platform **for both mobile and desk-bound employees**.

That means that people now have an almost overwhelming number of ways to contact each other. For voice communications, most employees can use a desk phone with voice mail, a conference phone and a mobile phone or smartphone (which may or may not be supported by their employer). More and more workers can also conduct meetings via video and Web conferences. For messaging, most employees have an email account, a Web-based IM application — either corporate or public — and mobile texting. Workers may also have shared calendars, directories, VoIP and other collaboration tools at their fingertips. Each of these technologies is useful in a business setting, and few employees could do their jobs without them. But they typically run on different platforms with radically different user interfaces and approaches to communication. This leads to a complex and hard-to-manage situation for end users, let alone administrators. UC offers a solution.

UC integrates five communications areas — video, voice, email, conferencing and IM — onto a single platform that both mobile and desk-bound employees can access. A typical UC platform provides a simple, streamlined interface for end users, who can get convenient features like a unified inbox, visual voice mail and a single corporate directory. A UC solution will add new features to these applications to facilitate real-time collaboration, such as presence indicators to locate co-workers and desktop call control to let users activate voice features with a click of their mouse.

UC Solutions in Practice

UC solutions are relatively new and are supplied by vendors from several different areas of the communications universe. As a result, there are essentially three different flavors of available UC systems. All prospective buyers need to carefully consider these three approaches to determine which will best fit with their existing infrastructures. The first comes from your business's existing networking hardware vendor, which extends its large networking portfolio into new communications areas while integrating several layers of new software into your hardware. The second approach is

offered by IP communications vendors, who provide solutions that manage all IP communications from one application. Software vendors, supplying applications like email and IM, offer the third and final UC approach by extending their applications' previous functionality into all communications across your network.

Each of these three approaches has advantages and disadvantages, but you can find a well-matched UC solution if you consider which provider best complements your existing system. In other words, if your business owns a software communications suite and you want to integrate the rest of your network communications into that suite, you are likely to prefer your software vendor's UC approach. Conversely, if you have relied on your network hardware vendor for infrastructure and software solutions, you are likely to find its solution more attractive. The same holds true for smaller businesses expanding their simple IP communications solutions. Again, the IP communication vendor will likely offer a good UC fit.

Integrating UC

Most UC solutions allow customers to purchase specific components separately if they so desire. In fact, many systems make use of existing applications like Lotus Notes/Domino or Microsoft Outlook/Exchange for email. This is partly a pragmatic acceptance of reality; no business is likely to want to switch from a long-standing, well-understood email solution. It's therefore no surprise that, according to Gartner's "User Survey Analysis" report, most companies prefer taking a best-of breed approach to UC even if it means deploying UC components from multiple vendors.

The most critical element in any UC solution is therefore the integration and interoperability of its components. Because of this, most UC vendors use SIP (Session Initiation Protocol), a standard IP network protocol that permits multimedia sessions, such as Internet phone calls, chats and video conferences, with multiple participants. In addition, more and more vendors are aligning their products with SOA (Service-Oriented Architecture) initiatives and making them available as Web services to increase availability and integration.

To appreciate integration you need to have a clear understanding of how UC works with an existing data network. UC is designed to be layered on top of your existing voice and data networks, extending them to include advanced telephony features and unifying the separate platforms. The UC platform must therefore also easily integrate with your existing IP network and PBX. You don't necessarily have to replace your existing PBX systems to deploy UC, but it does present a good opportunity to move forward with planned upgrades, such as switching to an IP PBX or to the latest version of Microsoft Exchange. And you may need to beef up your infrastructure to handle the increased bandwidth demands of VoIP applications. In fact, 36 percent of the enterprises that responded to Gartner's "UC User Analysis Survey" said that one reason for moving to UC was because their equipment needed upgrading, while 26 percent said that better applications are available through UC.

Why Move to UC?

The main reasons for deploying UC are improving business processes, increasing employees' productivity and reducing the ownership costs associated with communications equipment. According to Gartner, 44 percent of companies implemented UC to improve the speed of communications across the business, 39 percent wanted to offer

better communications for distributed sites and remote or mobile workers and 34 percent needed to improve their employees' access to information regardless of device or location.
Companies can also realize hard benefits with UC, as noted by the 33 percent of Gartner respondents that deployed UC to lower the total cost of ownership and the 27 percent that used UC to reduce equipment costs. In integrating a company's separate communications technologies, UC also better incorporates a company's remote and mobile workers with the rest of the staff, giving everyone the tools they need to collaborate in real time no matter where they are or what device they're using.

Even though UC is a relatively new technology, it is gaining ground quickly with enterprises. In February 2008, Forrester Research Inc. reported that half of the 800 enterprises in its survey already had deployed some type of UC initiative. According to its "Unified Communications Adoption Plans" report, 83 percent of survey respondents were evaluating, piloting and implementing a UC solution. The research company believes that even more organizations will "deploy UC as part of their 2009 strategic business initiatives."

Potential Returns

Despite the great promise of UC, making a case for it can be tricky. After all, UC may not result in immediate benefits that can be measured in greater profits. The true value of UC can be difficult to calculate in dollars and cents. How do you quantify the "hard" benefit of being able to resolve a customer issue more quickly and accurately than before?

Nevertheless, a UC solution can save your company money in several areas, such as travel expenses, since employees can conference over the Web instead of flying to meet with co-workers in-person. According to Forrester's "How To Evaluate Business Value For Unified Communications" report, if you base your ROI (Return on Investment) calculation on business-process improvements, UC's ROI is often less than two years. Yet the research firm cautioned that "the most important factor in determining potential benefits for UC solutions is estimating how it will improve employees' ability to communicate."

The bottom line is that UC can facilitate communications for a company of any size, but those with a highly distributed work force stand to gain the most.

Market Overview

UC began when enterprises started to converge all of their communications on IP networks. The proliferation of open software platforms made UC a relatively easy next step in the evolution of business communications.

Gartner called UC "an early-stage technology." The UC market is immature, and vendors jumped into it in earnest just last year. According to Forrester, in 2007 buyers reacted to UC vendors' hype with some confusion, unsure "how to define UC and what UC meant for their businesses." But this year, vendors have improved their solutions and IT professionals have a better understanding of what UC does and how it should do it. More than 50 percent of the enterprises surveyed by Forrester reported that they are evaluating, installing or running UC solutions.

Two industries **jointly developed the UC market**: **telecom** companies, such as PBX vendors with unified messaging and IM; and **email- and desktop-collaboration** providers. .

Vendors are attacking the UC market from all sides, coming at it with different strengths and from different perspectives. According to Gartner's 2007 "Magic Quadrant" report on UC, two industries jointly developed the emerging UC market: telecommunications companies, such as PBX vendors with unified messaging and IM; and email- and desktop-collaboration providers.

This illustrates an important point for any UC buyer: There are several different ways vendors deliver a UC system, even though the basic features and functionality are similar.

Vendors and Their Approaches

In an August 2007 report on UC vendors, Info-Tech Research Group said, "While the market is flooded with vendors offering Unified Communications (UC) products, IT heavyweights Cisco and Microsoft have clearly emerged as the leaders of the UC charge, albeit with considerably different architectures." Since then, several other IT leaders have joined in, including Alcatel-Lucent, Avaya Inc., IBM Corp., Nortel Networks and Oracle Corp.

These vendors deliver their UC offerings in a variety of ways, often as a direct result of their expertise. Some UC solutions are network-centric, like Cisco Systems Inc.'s offering; this places integration at the network level and includes hardware components. Others, like Microsoft Corp.'s system, are software-centric, which puts integration on the server and desktop level. Either way, UC solutions should interoperate with your existing hardware infrastructure and communications software. Most vendors offer modular UC solutions, so you can purchase and deploy the applications either all at once or separately as your organization requires additional functionality.

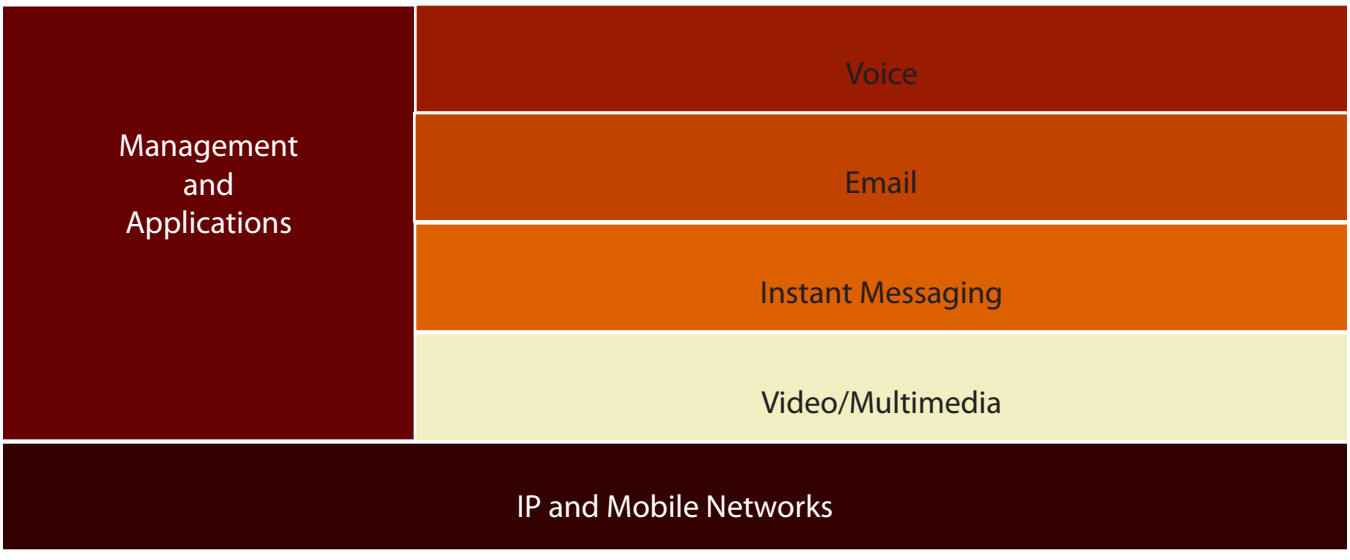
For instance, Microsoft's Unified Communications suite is a purely software solution. Each UC application is interdependent — though some, like Exchange, work independently — and sold separately. Several other Microsoft applications, including Office, are also UC-enabled and are capable of integrating with the vendor's other UC applications. It is important to note that Microsoft acknowledges the importance of having the right underlying hardware and offers a solution to this issue by partnering with hardware vendors, most notably Nortel.

Two additional major players in the UC market are Alcatel-Lucent and Avaya. They also sell pure software solutions, but they're among the minority of vendors that bundle their offerings into suites of UC applications. In addition, Siemens AG offers its OpenScape Unified Communications Suite, which interoperates closely with the Microsoft Office Communication Server 2007, a key component of that vendor's UC offering.

IBM relies largely on its extensive service business to deliver on its UC2 (Unified Communications and Collaboration) strategy. Lotus Sametime is the core of IBM's offering, which also includes design and implementation services as well as server hardware.

Lastly, Oracle combines its Collaboration Suite 10g with Service Delivery Platform and WebCenter to offer UC; Oracle's solution is least like a typical full UC solution.

As network infrastructure providers, Cisco and Nortel market their UC offerings as a component of their integrated networks, including infrastructure hardware like voice gateways, switches and IP phones, plus a variety of UC applications. Uniquely, Cisco's UC solution is network-centric rather than focused on software applications, which means that you may have non-interoperable interdependencies between the network infrastructure and UC applications. Similarly, ShoreTel Inc.'s solution is an end-to-end IP communications system with IP phones, switches and UC applications.



Unified Communications Platform

Even with these industry titans playing the UC market, most of them aren't doing it alone; many of these vendors are relying on partnerships to round out their UC offerings. For instance, Nortel has partnered with both Microsoft (called the Innovative Communications Alliance, which combines Nortel's telephony expertise with Microsoft's desktop productivity applications) and IBM. IBM also has key partnerships with Cisco and other telephony vendors as part of its UC2 strategy. Even if providers don't have specific partner agreements, many offer interoperability with common email platforms, namely Lotus Notes and Microsoft Outlook.

Although out of the scope of this buyer's guide, it's important to also note that UC SaaS (Software as a Service) offerings are beginning to emerge from vendors like PanTerra Networks Inc. PanTerra's WorkSuite services are on-demand solutions designed to bring comprehensive UC to SMBs (small- to medium-sized businesses), including digital voice, collaboration, call-center and messaging services. WorkSuite gives companies access to sophisticated IP telephony and messaging capabilities that they might not otherwise afford; like other SaaS offerings, PanTerra's eliminates the need for SMBs to invest in their own IP network equipment and UC software or manage the complex integration on their own. Also, SaaS solutions let you adopt a pay-as-you-go model for UC, which can be particularly cost-effective for smaller companies with fewer employees that need to use UC applications.

When you're evaluating the UC market, it's important to remember that many vendors are still developing their solutions, so not every UC function is ready for prime time. For example, federated presence — which shares users' availability outside corporate boundaries — currently provides "only marginal utility," according to a February 2008 report from Forrester.

The Benefits of Unified Communications

The promise of UC is great, but achieving its many benefits isn't necessarily simple. The biggest hurdle you may face is your users. UC changes the way people use their communication tools, integrating them with the business processes and productivity applications employees draw on every day. UC's presence technology can be very revealing of work patterns and habits, and may require some employees to become more accountable to their co-workers. More than anything, users may initially resist presence technologies that reveal their real-time location throughout the workday. Nevertheless, the benefits of UC should be enough to get all employees, from executives down through the ranks, on board. Management should approve of the business benefits, and workers should appreciate the ease of use UC brings to communications applications.

Because UC **streamlines** communications and helps people do their jobs more efficiently, more quickly and more easily, **the soft benefits** of UC are the most significant — and the most difficult to quantify.

Because UC streamlines communications and helps people do their jobs more efficiently, more quickly and more easily, the soft benefits of UC are usually the most significant — and, naturally, the most difficult to quantify when making a business case for the technology. These benefits include speeding up communications, improving employees' access to information across the organization and better collaboration among staff. The benefits are most dramatic for remote employees who can usually be fully integrated into the organization's communications for the first time. UC can lead to happier customers because your customer-facing workers can access the data they need to fix customer problems faster. On the IT side, converging the various disparate communications systems can result in simpler system management.

The end result of improved communication throughout your organization can be surprising. UC can ultimately lead to shorter project times, shorter product cycles, faster time to market and greater employee productivity. According to Forrester, UC also can be an "important business tool to improve existing business processes and reduce costly business delays for time-sensitive situations."

Your organization may reap some hard benefits from UC as well. These are usually realized in a lower total cost of ownership as well as decreased overhead costs. For example, UC's real-time collaboration tools can help companies drastically cut down on business-travel expenses. Companies can also save on outsourced conferencing services when they move all audio and video conferencing in house.

Gartner's April 2008 "User Survey Analysis" report on UC in North American and Western Europe polled 300 CMEs (corporate and major enterprises) to find out what advantages they had gained by deploying UC. The research firm found that 54 percent of respondents considered their implementation "extremely successful" and 46 percent viewed it as "successful." No one reported being disappointed in their UC solution, and only 1 percent of

CMEs stated that they gained no advantages following the UC deployment. Not surprisingly, survey respondents most frequently cited soft benefits:

- 36 percent reported improved employee collaboration
- 33 percent reported improved employee productivity
- 33 percent reported improved communications for distributed sites
- 33 percent reported improved communications for mobile and remote work force
- 32 percent reported improved customer service
- 30 percent reported improved employee access to information regardless of device or location
- 27 percent reported easier systems management and administration
- 26 percent reported improved applications available
- 23 percent reported lower total cost of ownership

Like any new technology, deploying UC is not without its risks. The widespread integration among new and existing applications can be complicated, for instance. In Gartner's "User Analysis Survey," many CMEs reported that they experienced issues with their UC deployments. In fact, 43 percent reported having technical problems and 38 percent had trouble integrating the UC solution with existing equipment. In addition, 32 percent reported having problems with training employees to correctly use the applications. Just 6 percent experienced no challenges.

You may also face organizational issues. Since UC is too new to have a set of established best practices, you may be on your own to meet those challenges, particularly the complex integrations between existing infrastructure, communication applications and the new UC software

Basic Features

UC is more than a common interface. Most significantly, it introduces presence and availability tools. It can also extend your voice system to include sophisticated telephony features, as well as add new types of conferencing tools. Because most vendors offer their solutions modularly, you can determine what UC looks like at your organization — you choose the UC applications that your users need, regardless of what vendor offers them. Whether vendors deliver UC in a suite of stand-alone products or as interdependent applications and platforms, the basic features of a UC solution are the same.

Because most vendors offer their solutions **modularly**, you can determine what UC looks like at your organization — **you choose applications that your users need**, regardless of what vendor offers them.

The UC Client

The UC client is the unified user interface that allows employees to access UC applications and make contact with co-workers in real time across all modes of communication. The clients run on desktop PCs, cell phones, PDAs and smartphones. Clients include Microsoft Office Communicator, Lotus Sametime, Cisco Unified Personal Communicator and ShoreTel's ShoreWare Call Manager.

Integration and SIP

Integration is the heart of UC, and your UC applications must not only integrate with each other but also with your existing applications and infrastructure. When considering UC, it's important to remember that it is not a single product that you purchase from a single vendor. Rather, it's a solution that encompasses a variety of software applications and hardware components, many of which are probably already in place in your enterprise. In this case, your consideration should be simply whether you wish to keep your existing solution or replace it. Typically an organization will want to keep what it has unless its applications or components are inadequate or outdated. That in turn means that consideration of a UC solution will also revolve around its ability to integrate with existing infrastructure.

This also means that most companies begin their UC deployments by integrating the UC-capable applications they already have, primarily email, voice messaging, calendaring and mobile tools. The UC platform ties together the various communications technologies and adds a shared user interface. Employees can access this shared interface from their PCs, smartphones, mobile phones and PDAs from anywhere in the world.

For instance, Microsoft OCS (Office Communications Server) 2007, which is the central component of Microsoft's UC solution, can integrate with most PBX equipment as well as an IP PBX. Common user scenarios include initiating a voice call from your desktop with a single click of the mouse; expanding an IM session into a multiparty Web conference; and seamlessly changing devices midstream, moving a call from a cell phone to an office phone.

`Many vendors also offer interoperability between their UC applications and third-party applications packages, primarily Microsoft Outlook and the Office Communicator client and IBM Lotus Notes and Lotus Sametime. For example, Avaya's Unified Communications suites integrate with Office Communicator and Sametime; ShoreTel's ShoreWare Call Manager integrates with Outlook; and Siemens OpenScape Unified Communications Suite integrates with Microsoft OCS, IBM Sametime and other US solutions that use SOA.

For the most part, SIP is the industry standard that vendors use to enable integration between UC applications and devices as well as among the applications themselves, such as between Microsoft OCS and IP PBXes.

Presence

Presence is the most significant new feature that UC adds to your communications infrastructure. It's particularly important when your company has a widely dispersed and highly mobile work force. Moment by moment, presence shares employees' availability, location, currently used device and preferred method of contact. Employees can immediately see if the person with whom they need to connect is available as well as the best way to reach that person. Presence indicators can run on desktops and mobile devices.

For instance, Cisco delivers presence with its SIP-based Cisco Unified Presence software, which works not only with the Cisco Unified Personal Communicator client but also with Lotus Sametime and Microsoft Office Communicator.

As critical as presence is to UC, this technology is still in early stages and will rapidly evolve. It's probably also the UC application that users will most resist.

Voice

UC integrates voice capabilities with other modes of communication, such as integrating voice mailboxes with email inboxes and extending telephony to users' PCs. It also gives employees new sophisticated telephony features, including personal call-control settings, access to a unified corporate directory, conference calling and more.

Two other features are key to UC's voice functionality: single-number access and single outbound identity. Each employee gets a single phone number with an associated mailbox that will connect to his or her office desk phone as well as his or her cell phone. Employees are also given a calling number, which is used to identify a worker regardless of the device he or she is using to make the call. Users can also set routing and permissions, sending calls directly to voice mail or to a particular device. Calls can ring first to the most convenient device or all phones simultaneously.

Desktop call control is also a centerpiece feature. Via UC's closely integrated applications, it allows employees to "click to communicate" — simply clicking names in a corporate directory or contact list through the UC interface launches phone calls, IM sessions and conferences.

IM

UC reigns in IM to make it private and secure for enterprise use. It closely integrates with other UC applications, particularly presence. IM is often delivered as part of a real-time communications application. For example, IM is part of Microsoft OCS 2007 along with presence, VoIP and conferencing. Also, ShoreTel's ShoreWare Call Manager includes IM, conferencing and call management.

Unified Messaging

UC incorporates unified messaging, which combines email, voice mail and fax messages in a single inbox. It also often includes advanced voice-mail functionality, such as visual voice mail, so you can read your voice messages via your inbox.

Conferencing and Collaboration

This includes audio, video and Web-conference technologies, as well as shared desktops, file sharing and other collaborative applications. Conference attendees can view presentations and other documents online while participating in an ongoing conference. Users can attend the conference via any device, from their POTS (plain old telephone service) desk phone to a smartphone to a VoIP-enabled PC. Conferencing can also integrate with users' calendar application to automatically update employees' schedules and send them a link for joining the conference.

Some applications, like Cisco's, allow users to initiate a conference from an IM session, adding co-workers in real-time, as well as enable side conversations via IM while the conference is still underway. Others, like Nortel's UC offering, allow users to start a conference via the UC mobile client on their mobile device. Users can also handle a variety of conference-management tasks, such as locking the call and recording the conference, through the same interface.

Mobility

For true real-time communications across the enterprise, UC must include mobility applications that integrate mobile devices, such as smartphones and PDAs, with core enterprise communications. Presence in particular must be supported on mobile devices. Also, users should be able to access corporate directories and view the messages in their unified inbox from their mobile phones. Other UC features on a mobile device may include click-to-conference and IM. In general, a mobile UC client should extend the features of the corporate PBX to mobile devices.

ShoreTel's ShoreWare Mobile Call Manager, for example, gives users visual access to their voice-mail messages; looks up contacts from a corporate directory, an address book and Outlook contacts; and shows the user's corporate caller ID number instead of his or her personal phone number. Also, Cisco's Unified Mobile Communicator lets workers view colleagues' availability status, send secure text messages, access call histories and more.

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Advanced Features

While the basic features of UC are standard among all solutions, advanced features vary from vendor to vendor. UC is still emerging, and the applications will continue to evolve as the technologies, particularly presence, improve. Currently, each vendor offers different advanced features. If you intend to use UC in sophisticated ways, such as in contact centers or integrating it with business processes, you can expect to develop a best-of-breed solution. In the end, you will determine which features are included with your UC solution.

In a quest **to slash travel costs**, companies are increasingly **turning to video** for **meetings, training sessions and more**.

Video

In a quest to slash travel costs, companies are increasingly turning to video for meetings with remote workers, training sessions and more. It's no surprise, then, that Forrester predicted that video-conferencing utilization will rise from fewer than 10 percent of firms in 2007 to almost 50 percent in 2008. UC solutions should therefore integrate with all modes of video systems, including desktop Webcams, PC screens and telepresence tools. For instance, Siemens' Unified Video is offered as part of its UC solution, integrating with the OpenScape Unified Communications Server. Other vendors, such as ShoreTel, provide video capabilities through a third-party partnership.

Cisco's TelePresence solution is among the most extensive available. It integrates high-definition video and audio with UC applications and the underlying network infrastructure. It includes room endpoint systems, a multipoint switching platform, collaboration tools and management software. As part of the UC system, users can launch calls and use telephony features via the TelePresence Manager software. It also integrates with Microsoft Exchange and Lotus Notes to use the calendaring tools.

Similarly, Avaya offers a separate video telephony solution that integrates with its UC offering via Communication Manager and IP Softphone, including presence and IM. It includes desktop video, conference-room video and multipoint video, and it uses the Polycom endpoints.

Contact Center

Contact-center applications improve your customer service, delivering advanced routing and multiple service options that make sure customers reach the right person at your organization. While some UC implementations will add contact-center features for the first time, others will integrate all the facets of UC into an existing call center. Features may include menu selections, priority and skills-based routing. They may also enable customer service reps to email or chat online with customers. Contact-center applications should integrate not only with UC applications but with enterprise business applications as well.

ShoreTel's ShoreWare Contact Center, for instance, includes multimedia routing to support email and Web-based chat, advanced routing, IVR (interactive voice response) script engine, outbound dialing and CRM integration. Cisco's Unified Contact Center Enterprise also offers real-time chat and email as well as Web collaboration, network-to-desktop CTI (computer telephony integration) and intelligent routing. Siemens also has a contact-center application; HiPath ProCenter works with the OpenScape UC Suite to leverage presence and collaboration tools. Avaya and Nortel also offer contact-center solutions separate from their UC solutions.

Speech

UC speech functionality includes text-to-speech and speech recognition. With text-to-speech, users can access their email inbox via their mobile device and listen to their email messages as well as their voice-mail messages. Advanced solutions may even be able to read email attachments out loud. With speech recognition, employees can access their inbox, calendar, corporate directory and more using speech commands; personal assistant applications are starting to deliver speech recognition along with intelligent screening and message filtering.

For instance Alcatel-Lucent's My Messaging is the unified messaging application in the vendor's UC solution. Along with the single mailbox for voice, email and fax messaging, My Messaging provides remote email access by phone with text-to-speech plus the ability to print or broadcast email and faxes by voice command.

IVR is increasingly becoming part of a UC solution. With IVR, your organization can give customers speech-enabled self-service tools to use when contacting your call center. Microsoft's UC offering includes Speech Server, which is built into OCS; it includes speech recognition and speech synthesis, and developers can use its toolkit to build custom speech applications. Furthermore, Speech Server is an open platform that supports .NET as well as voice application standards like VoiceXML and SALT (speech application language tags), and it uses Web services to integrate applications with various back ends. Nortel also offers IVR with its IVR CTI Portfolio.

Advanced Management Tools

Clearly, a UC solution becomes increasingly complex as you add sophisticated features that become more deeply integrated into your network infrastructure. Depending on the scale of your solution, you may need advanced management tools, such as those offered by end-to-end providers ShoreTel and Cisco.

ShoreTel's ShoreWare System Monitor is a network-management tool for monitoring network hardware and bandwidth for optimal voice quality. Features include historical data for trend analysis, root-cause analysis and information for problem resolution, alerts and daily network status reports.

Cisco takes it one step further by including application management. Cisco's UC network management suites are designed for SMBs, medium-sized business and large enterprises. For large enterprises, the Cisco Unified Communications Management Suite integrates a provisioning manager, an operations manager, a service monitor and a services statistics manager to give you a single view into your entire Cisco UC solution. Features include batch provisioning, service-level monitoring and diagnostics for the UC applications and the IP transport infrastructure, voice quality monitoring and statistics analysis and reporting.

Business Process Integration and Development Tools

Integrating UC functionality with business processes and workflow applications is important to fully realizing the benefits of UC. Business processes are often delayed when one worker is tracking down a colleague to contribute to the task at hand. UC can speed up this process, especially when applications are UC-enabled and users can initiate contact by clicking within the open application.

Business processes **are often delayed** when one worker is tracking down a colleague. **UC can speed this process**, especially when users can initiate contact by clicking.

Microsoft Office is one such UC-enabled application. If employees' names are associated with a document, a co-worker can mouse over those names to see their presence status and then click them to begin a real-time chat, for instance. IBM Lotus Sametime integrates with Office as well, so that employees can use Sametime's IM application and presence awareness to see if the author of an Office document is online and available, and then send an IM to that person from within a Word or Excel document.

There may be other business applications in your organization that would become more useful with UC features, such as automatic notifications and Web conferencing. To make applications interoperable with UC, a few vendors provide development tools. For example, Siemens offers a Developer Edition of its OpenScape UC Application. Cisco has the Cisco Unified Application Designer, which uses drag-and-drop techniques to construct applications containing communications business logic.

Microsoft is particularly friendly to developers, hosting a page for UC development on the Microsoft Developer Network. It includes a UC API Map and downloads for the Communications Server 2007 Server SDK, Exchange Server 2007 SP1 SDK, Unified Communications Managed AP1 V1.0 SDK, Unified Communications Client 1.0 SDK and Unified Communications AJAX SDK. Developers can use these SDKs to develop UC for Office Word 2002, 2003 and 2007. Also available for download is Microsoft OCS 2007 Speech Server Developer Edition, which lets developers program and deploy IVR applications.

In contrast, Avaya offers custom development through its CEBP (Communications Enabled Business Processes) consulting service. The company's programmers will develop custom applications that will integrate UC into your business processes.

SOA

Many of these UC solutions are built with SOA in mind, using it to enable integration among the UC applications. Siemens, for instance, built the OpenScape Unified Communications Server on SOA architecture and delivers UC applications, including OpenScape Messaging, OpenScape Video and OpenScape Voice, as SOA services. OpenScape's SOA framework allows it to integrate with your existing business processes and business applications. Other vendors that leverage SOA include Avaya, Cisco and Nortel.

Cost

There is no standard pricing structure for a UC solution since each company's deployment varies widely. And vendors price their offerings in different ways; some charge per user for a suite of applications while others charge licensing fees for each application.

When determining **the cost of your UC solution**, you may need to also factor in software upgrades. If you're replacing legacy **desktop phones**, you must add the cost of IP phones.

Cisco, for instance, lets customers purchase UC applications through its Unified Workspace Licensing program, which includes client and server software licensing, service and support and software subscription. Call control, presence, unified clients, mobility, unified messaging and audio, video and Web conferencing are all available this way. Additional interoperable applications are also available, such as telepresence for video conferencing and contact-center software, and are charged separately.

According to Forrester, "UC application vendors have bundled software into product suites that offer access to multiple UC applications within their license fees. The organization should expect to a pay a one-time license fee of approximately $100 per user for basic UC applications." Naturally, adding advanced features such as video and contact-center tools can significantly raise the cost, particularly if you choose a video solution sold separately from the vendor's UC solution.

IBM's Lotus Sametime costs just $100 for each user license, which is the lowest price among the vendors willing to disclose this information.

Avaya Unified Communications starts at $315 per user for the Essential Edition; this suite is aimed at office-bound employees who need advanced IP telephony, messaging and basic conferencing functionality. The Standard Edition starts at $457 per user, and the optional video feature adds $60 per user. This suite adds flexible deployment options as well as mobility applications to the UC solution. Finally, Avaya's Advanced Edition starts at $557 per user. This suite adds integrated audio and Web conferencing, including integrated voice and shared desktop sessions.

In contrast, Microsoft sells each UC application individually with a separate license. If you're a Microsoft shop, you may already have purchased Exchange Server 2007; for a 25-client license, it costs $6,999 plus $439 for additional user packs. The Enterprise Edition of Office Communications Server 2007 starts at $2,791, while the Standard Edition starts at $488. Office Communicator 2007 can be purchased as a stand-alone license for $31 per user; it's included in the Office Professional Plus 2007 and Office Enterprise 2007 licenses.

When determining the cost of your UC solution, you may need to also factor in software upgrades, such as for your email platform, and additional network equipment. Depending on your current network, you may have to add server boxes to run the UC server software or voice gateways and switches to support additional voice traffic on your IP network. If you're replacing legacy desktop phones, you need to add the cost of IP phones, and if you're deploying video conferencing, you need to add the cost of video displays, camera and other equipment. In addition, Forrester warned that you may also have to pay additional license fees for the supporting IP telephony platform to connect telephony to the UC collaboration servers.

And don't overlook the value of professional services. UC is new, and your organization is unlikely to have expertise to deploy it. It may be worth the cost to take advantage of a UC vendor's network assessment and UC design and planning services.

Services and Support

In general, UC vendors offer a broad range of support options and services. Support includes online resource libraries, searchable knowledge bases, 24/7 support numbers and online ticket managers that let customers create service requests, check the status of their ticket and more. Some vendors, like Cisco, host online forums and user groups dedicated to the installation and administration of UC applications. Also, look for training services. ShoreTel, for instance, provides free online training plus instructor-led classes. Services from vendors like Nortel run the gamut from design and planning consultations to implementation and management services. You can also completely outsource UC via a managed or hosted service.

Support is basic — every customer should have access to a **24/7 customer support number** — but **services** may be the **deciding factor** when choosing a UC vendor.

Support is basic — every customer should have access to a 24/7 customer support number — but services may be the deciding factor when choosing a UC vendor, depending on how much assistance you want when preparing and rolling out a UC solution.

Avaya's support options include per-incident product support and technical consulting. Its resource library has downloads, product documentation, installation, migration and configuration information and user guides. In addition to its CEBP consulting service, Avaya offers Unified Communications Consulting, providing the planning, design, implementation, integration and training to support the UC suite. As part of the service, Avaya will choose the systems that will work best with existing legacy equipment.

Considering the network-centric focus of Cisco's UC solution as well as the breadth of the applications, it's no surprise that the vendor's Unified Communications Services can help from start to finish. Cisco's extensive catalog includes a business-justification service, a deployment strategy service, planning and design, deployment support as well as pre- and post-deployment assessments. Cisco's technical support includes an operation service that provides application support and monitoring plus access to specialized Cisco engineers.

Unlike other UC vendors, IBM's UC strategy stresses the importance of UC services. IBM Global Technology Services provides an array of Converged Communication Services from IP technology and network convergenc to real-time collaboration and telepresence.

ShoreTel offers a support package that includes the ubiquitous telephone support as well as software updates, hardware-replacement options and Web-based training for administrators and end users. The vendor also providers the entire ShoreTel IP phone system as a managed service.

Siemens is one vendor that adds extensive training options to its support and services with its Open Communications training programs. You can enroll in a variety of OpenScape courses through the Academy for Professional Training to become certified in Siemens Open Communications.

Unified Communications Buyer's Checklist

What to ask before you buy.

Before you begin evaluating UC providers, you'll want to gather some basic information about your company's users and their communications needs as well as your current network infrastructure. Read our Unified Communications Checklist to get the questions you need to ask before investing in a UC solution.

Advantages to Unified Communications in the Enterprise

- ❒ UC unifies data, voice and collaboration applications onto one platform for easier management.
- ❒ UC leverages your existing IP infrastructure and existing communication applications, including email.
- ❒ UC preserves your investments in current communication systems and infrastructures.
- ❒ UC improves business processes.
- ❒ UC improves employee productivity.
- ❒ UC allows workers to more effectively communicate across lines of business.
- ❒ UC allows employees to communicate more quickly and accurately among company headquarters, branch offices and mobile workers.
- ❒ UC improves collaboration among a distributed work force.
- ❒ UC can lower travel costs by reducing the need for employees to travel to meetings.
- ❒ UC improves your company's response time to customers as well as the quality of the responses.
- ❒ UC gives mobile workers full access to the central telephony and email systems.
- ❒ UC can shorten sales cycles with improved communication.
- ❒ UC makes experts and decision makers in your company more accessible.

Disadvantages to Unified Communications in the Enterprise

- ❒ UC is still an immature technology, so providers' solutions will continue to evolve, perhaps even while you complete a UC rollout.
- ❒ Many UC applications are still in the early stages of development and may lack functionality.
- ❒ UC does not have a large installed base, so there isn't much real-world experience to draw on.
- ❒ UC does not yet have a set of best practices for enterprises to use when deploying the technology.
- ❒ Because UC may not have an immediate hard benefit to the company's bottom line, it can be difficult to make a winning business case for it.
- ❒ Users may initially resist UC technology, particularly presence applications that reveal their location and availability in real time.

Questions You Must Ask Before You Buy

- ❒ Will different business units share responsibility with the IT department for the UC budget?
- ❒ Does your IP network require any upgrades to support a UC solution?
- ❒ Does your network infrastructure have enough bandwidth to support the voice and video capabilities of UC?
- ❒ Are there any communications applications, like email, that should be upgraded or replaces as part of the UC rollout?
- ❒ Do you have any existing environments, such as Microsoft Exchange/Outlook or IBM Lotus/Notes, that would integrate better with a particular vendor's UC offering?
- ❒ Which business units or groups of workers would most benefit from being part of the first phase of your UC rollout?
- ❒ How and where do your company's employees work? You have to consider the communication needs of all employees, including those who are highly mobile, those who sit in front of a computer all day and those who work remotely.
- ❒ Do mobile employees use a particular handset or PDA device that must be supported by the UC solution?
- ❒ What range and type of end-user devices need to be supported?
- ❒ Do you need any additional servers to support the UC system?
- ❒ Do you need to implement additional security measures to protect the UC solution?
- ❒ Which UC applications should be deployed first? Which should be deployed in later phases of the UC rollout?
- ❒ Do you need a solution that integrates with existing desktop phones?
- ❒ Will you replace legacy desktop phones with IP phones?
- ❒ What kind of information, such as calendars and corporate directories, do mobile users need access to?
- ❒ Does the solution work in an SOA (Services Oriented Architecture)?
- ❒ Does the UC solution support SIP (Session Initiation Protocol) to enable integration with third-party UC applications?
- ❒ Would you benefit from using a vendor's design and planning services?

Basic Features All Solutions Must Supply

- ❒ Multivendor integration
- ❒ Unified messaging
- ❒ Presence
- ❒ Single client for the end-user to access all communication functions
- ❒ Single number and voice mailbox for all devices
- ❒ Simultaneous ringing
- ❒ IM
- ❒ Click-to-communicate

Additional Features That Should Be Included

- ❒ Audio, Web and video conferencing
- ❒ Call control
- ❒ Calendar control
- ❒ Text-to-speech inbox attendant
- ❒ Visual voice mail
- ❒ Desktop sharing
- ❒ Mobility

Questions to Ask a Vendor Before You Buy

- ❒ What is the exact list of features provided in the standard and advanced editions?
- ❒ Which applications and hardware components come with the complete UC solution?
- ❒ Can I purchase each UC component individually or as a UC suite?
- ❒ With which third-party applications does the UC solution integrate?
- ❒ Which third-party end-user devices, especially mobile phones and PDAs, does the UC solution support?
- ❒ Does the UC solution integrate with my existing PBX? Or does it include an IP PBX?
- ❒ Does it use SIP (Session Initiation Protocol)?
- ❒ Does it integrate freely with third-party UC applications? If it integrates only with particular third-party applications, which ones are they?
- ❒ What are my technical-support options?
- ❒ Do you offer services to help assess, design and implement a UC solution?
- ❒ Do you offer managed or hosted UC services?

Conclusion

UC is still a new technology, and its kinks are still being worked out by vendors and users alike. Because vendors deliver UC solutions in different ways — integrated with the underlying IP network infrastructure, integrated at the desktop and end-to-end — there is no single right way to implement UC. After all, UC is as much an approach to the way employees work as it is a technology solution. Research firm Forrester called upgrading to UC "both a business and a technology decision."

In general, companies usually roll out UC in stages, beginning with mobile and remote employees who need it to better collaborate with colleagues and continuing through the enterprise based on workers' roles at the company. According to Gartner, executives and managers currently use UC applications more frequently than other employees, followed by the sales staff and road warriors. In its "UC User Survey Analysis," Gartner reported that 46 percent of executives and 46 percent of management, 34 percent of sales staff, 29 percent of mobile workers, 26 percent of branch offices and 25 percent of remote workers use UC applications. Gartner also found that 32 percent of all employees across the organization use UC tools.

The advantages of UC include some cost savings, but most of your ROI will be realized through business process improvements, such as greater employee productivity, faster contact among employees and more efficient collaboration. In its report, "How To Evaluate Business Value For Unified Communications," Forrester recommended that "to justify UC investments, organizations should evaluate UC's business benefits and IT improvements, and explain its full value — for example, how it enables faster response to critical situations."

If you manage the challenges of UC — mastering the complex integration it requires, training end users so they get the most out of the applications and identifying how UC can optimize business processes — the technology has the potential to transform the way your company does business.