ISSUE PAPER

Unified Communications: What, Why and How?

What value can Unified Communications bring to your enterprise?

By Irwin Lazar, Principal Research Analyst, Collaboration and Convergence, Nemertes Research

Executive Summary

Unified communications has the potential to dramatically simplify and improve enterprise communications, reducing costs and improving revenue opportunities. By integrating various forms of communications, such as voice, video, instant messaging, conferencing, presence and voicemail, individuals and groups can more effectively control and manage their inbound and outbound communications sessions. Enterprises further stand to benefit from communications-enabled business processes, whereby the integration of communications services with enterprise business applications and processes lets business intelligence and presence awareness drive communications-session management. IT decision-makers must understand various vendor approaches to delivering solutions, and should integrate communications and collaboration planning functions to take advantage of the opportunities afforded by unified communications.

The Issue

A huge factor in the drive towards unified-communications architectures is the lack of integration—and resulting confusion—that characterizes real-time communications tools today. The last few years have seen a tremendous growth in the channels for communication, with instant messaging, video, Web conferencing, and mobile phones becoming commonplace. But as these new services have entered the enterprise domain, they've served to complicate rather than improve the ability for individuals and work groups to communicate and collaborate.

Knowledge and customer service workers must go through a complex series of steps to determine the optimal communications channel for a given scenario, in effect playing the role of communications detective in order to determine the right service for a given situation. This often results in a guessing game, where individuals call multiple numbers leaving messages in desktop and mobile voice mailboxes, hoping to find the person that they are trying to reach. Organizations are unable to effectively locate or include the optimal experts to assist in a given situation.

And it gets worse. Knowledge workers are increasingly distributed and "virtual." Individuals increasingly work from multiple locations, including home offices, hotels, conference centers, partner locations and airports. In fact, 83% of IT executives in Nemertes' benchmark, "Building the Successful Virtual Workplace" identified their companies as "virtual," meaning at least some employees work away from their supervisor and/or workgroup. Mobile devices often are limited in the applications that they support, yet remote and virtual workers still need access to communications services.

Building a successful unified-communications strategy, therefore, requires a way to integrate these methods of communicating with some intelligence around when to use with application.

What is Unified Communications?

These challenges have brought about a new communications architecture, defined as *unified communications*, in which various forms of real-time communications and collaboration applications are integrated so individuals can manage all their communications together rather than separately, in both desktop and mobile environments. Unified communications offers individuals the ability to not only manage how they contact others, but also how others can contact them.

Unified communications is based on an integrated set of user interfaces and backend connectivity for all communications services. It further merges real-time communications services with non-real-time collaboration and business process applications to bring context and presence to the entire communications and collaboration environment. Figure 1: UC Architecture shows the components of a unified communications architecture and how they relate to one another.

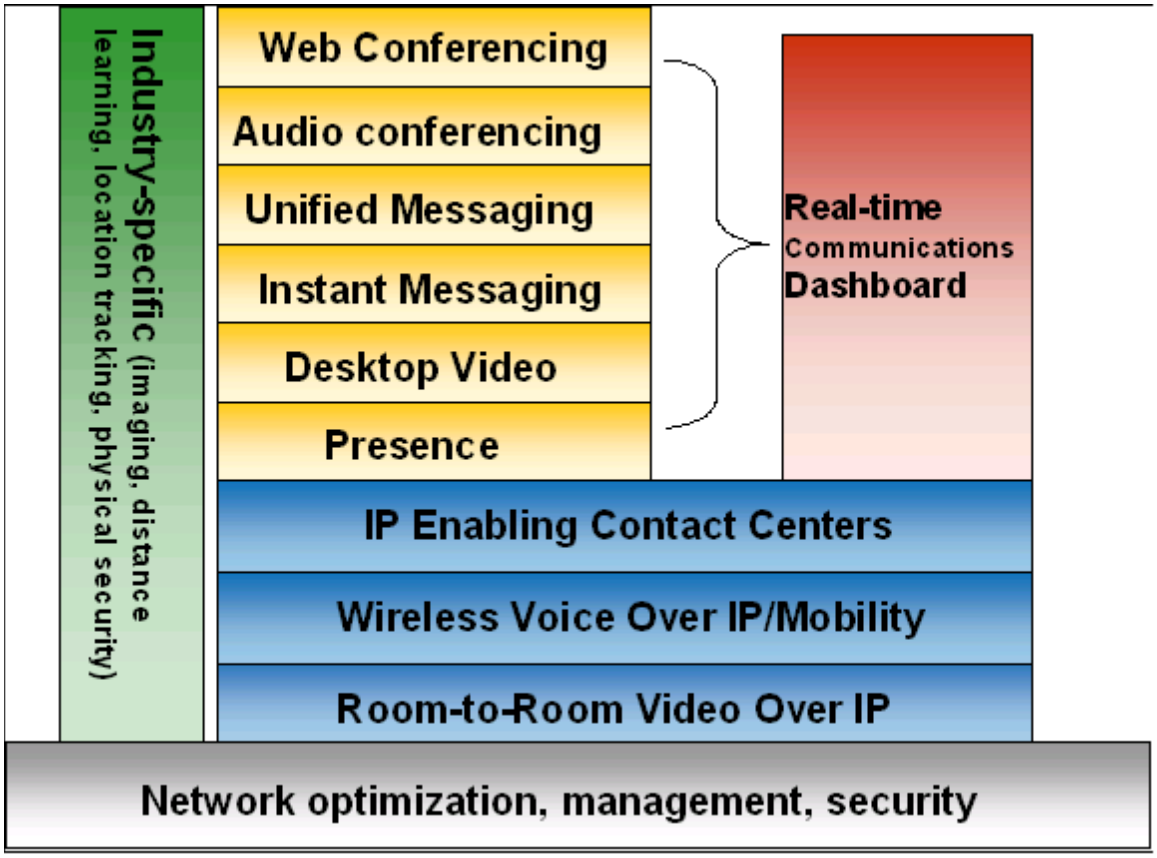

Figure 1: UC Architecture

Most of these individual applications and services already exist within the vast majority of enterprises. Ninety-six percent of benchmark participants report the use of at least one within their organizations.

Key to the migration to a unified-communications architecture is the deployment of a *Real-Time Communications Dashboard*, or RTCD. RTCDs may consist of both desktop and mobile software clients, though often with differing levels of functionality. Companies may further interweave RTCD functionality into office and business applications, enabling such features as click-to-call and presence status displays from within a variety of applications or portals.

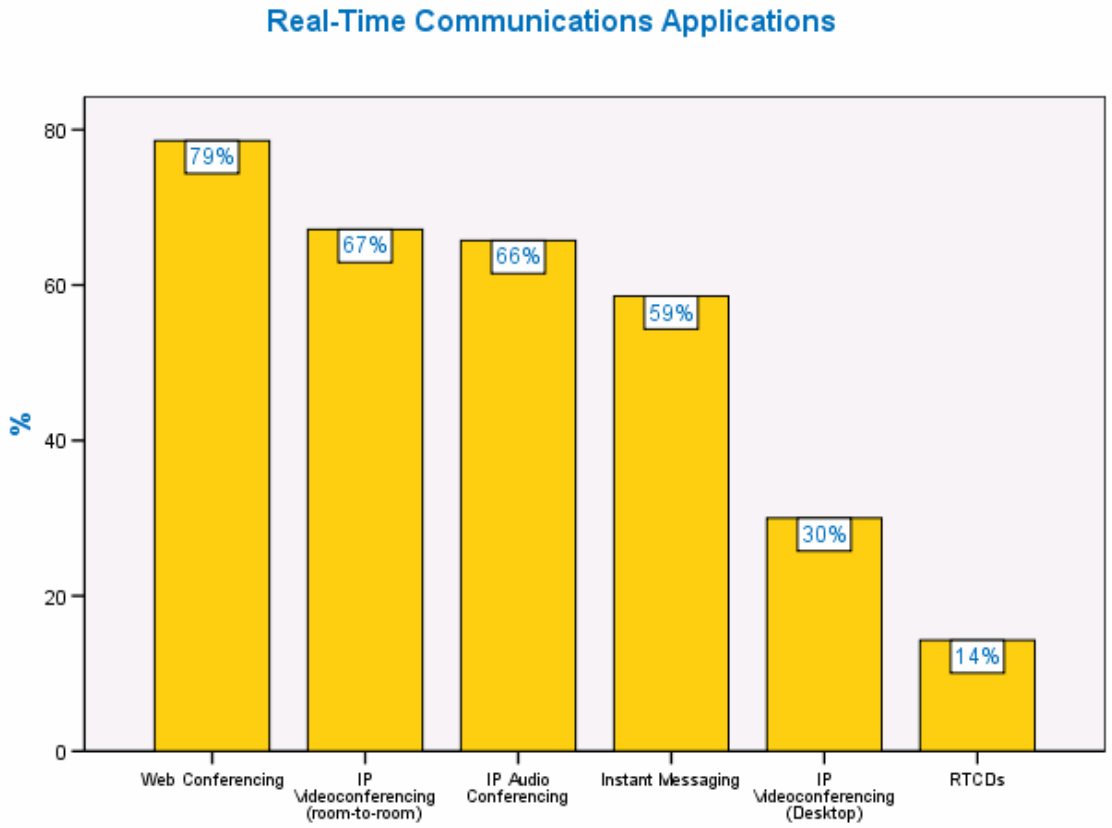

Figure 2: Real-Time Collaboration Tool Usage

Deployment of unified communications sets the stage for organizations to improve business processes by integrating communications services with enterprise applications. Integration of communications services with applications using standard protocols such as XML-based WSDL (Web services description language) as well as SOAP (simple object access protocol), transitions the formerly stand-alone applications into components of a Service Oriented Architecture (SOA).

For example, organizations can interconnect their IP-PBXs with a CRM application to automatically update customer records after each phone call. That lets customer-service agents see who spoke with a customer and for how long.

Mash-ups (the combination of output from multiple applications into a single user view) via Web services protocols enable integration of an RTCD with location services, such Google Maps, enabling display of a user's current location as well as their presence status.

Furthermore, enterprises can integrate specific business processes with their communications systems. For example, a business event such as a manufacturing alarm, inventory shortage, or medical emergency can trigger initiation of a communications session such as notification of key personnel, automatic creation of meet-me conferences, or establishment of a Web conference. In one possible scenario a shortage in a warehouse could trigger an

instant message to all product inventory managers, along with a proposed conference call meeting time, and additional information about the trends leading to the shortage.

Enterprises see the benefits in integrating unified communications with business processes. About 46% of enterprises are already planning to integrate business processes with communications applications while another 20% are evaluating the opportunities for communications enabled business processes (CEBP). Clearly, enterprises already see significant opportunity in using communications systems and services to improve business efficiency, leading to reduced costs or increased revenue opportunities.

Why should IT executives care?

Enterprise decision-makers and users appear to understand the value of unified communications, not only for solving the challenges of complexity of communications, but also to enable them to speed decision making and improve organizational responsiveness. According to the Nemertes' benchmark, 79% of IT executives interviewed were planning to deploy unified communications during the next two years and more than 17% already deploying at least some form of unified-communications services in their organization (Please see Figure 3: Unified Communications Plans).

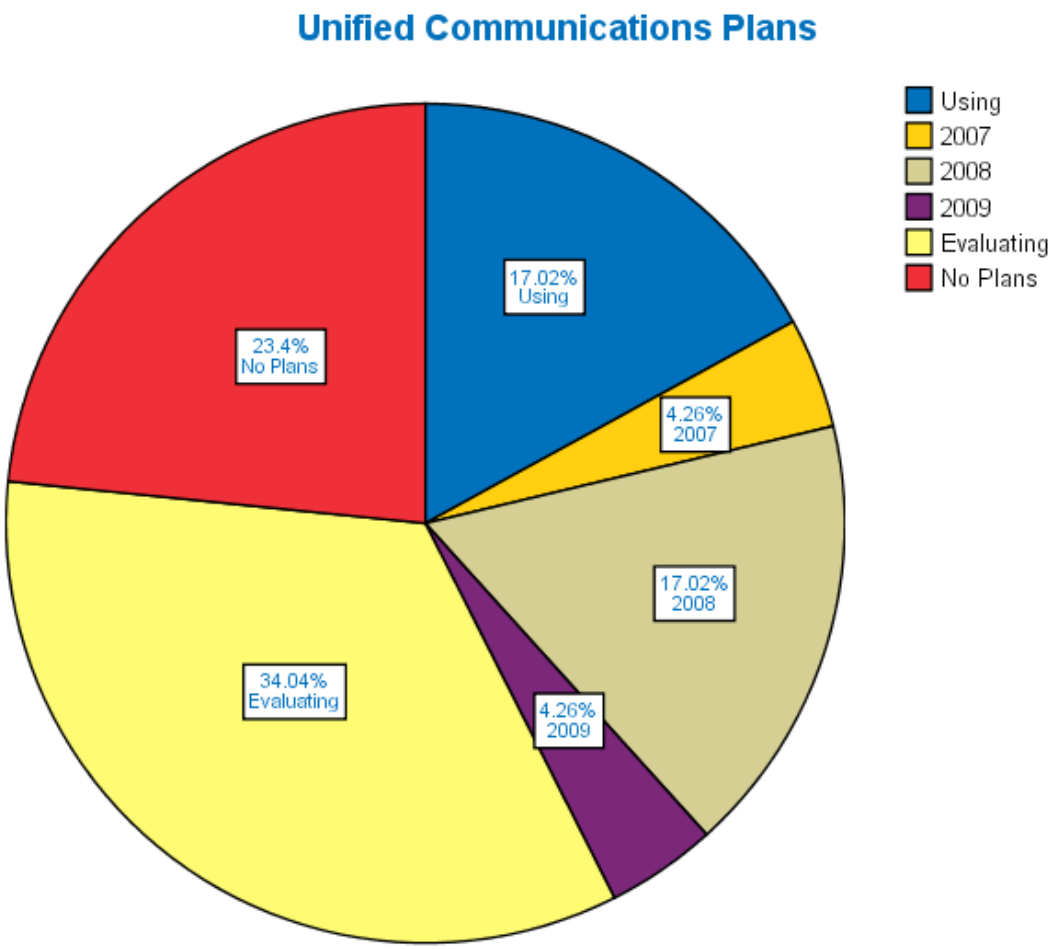

Figure 3: Unified Communications Plans

Enterprises are already seeing significant business benefit as a result of using the "components" of unified communications. For example, the use of IP soft-phones or wireless VOIP handsets means that mobile professionals can stay connected while outside the office or roaming a campus, or enterprises can reduce costs for fixed locations such as call centers by enabling individuals to work from home. Web conferencing and meet-me conferencing services enable more effective meetings and eliminate the common refrains of: "Who's on the call?" so often heard in traditional audio conferences. For example, 86% of companies using Web-conferencing tools report seeing reductions in travel costs, with 43% seeing a reduction in telecom costs; 29% reporting faster times to market and reduced overhead, and 14% noticing an increase in sales.

But adoption of UC requires enterprises to understand how UC offers the potential for business benefit, either through direct cost savings or increased revenue opportunities. This means that enterprises must identify specific business processes that will benefit from introduction of UC into the organization.

Typically, these processes involve:

- A requirement for speed – for examples, sales that are dependent on speed of customer response.
- A need to involve subject matter experts – for example, a subject-matter expert who can answer a prospective client's questions about a specific product.
- A need for agility – an organization that requires fast reaction to a changing operating environment or rapidly developing opportunities.

Purported productivity benefits can be elusive and hard to quantify. That said, though, business cases exist. And greater integration produces greater benefits, as in the communications-enabled business process that's emerging as enterprises integrate their IP PBXs with applications such as CRM.

One such example of this approach defined by Nemertes Research is "Just-In-Time-Fetch-The-Expert (JITFTE)." This model is most applicable for organizations that place a heavy emphasis on reactively or proactively getting information to clients, often with geographically dispersed support teams.

In these organizations effective customer interaction is critical to overall business success. For example, investment managers might need to apprise their clients quickly of events that might affect their portfolios. Community banks might need to answer specific questions about mortgages or consumer or business loans. Closing a sale might require involvement of an individual with specific vertical or product knowledge who is located in a separate geographic region.

In these scenarios, unified communications helps improve close rates by giving sales teams better access to support resources via the use of presence. Mobility services allow people to be available regardless of location. Salespeople can locate subject-matter experts in rapid time to help close a sale on the spot. Without JITFTE, the salesperson ordinarily would have to take notes, locate an expert, get an answer, and call the customer back—a process that reduces the likelihood of success and potentially puts a company at a competitive disadvantage.

Presence-enabled unified communications serves to virtualize corporate resources, enabling individuals to find the experts they need regardless of location, and quickly join them into a call, Web conference, video conference, audio bridge or customer contact center conversation. Or, if the expert is on a call, the sales person knows from his presence status that instant messaging is the best way to reach him. Even though he may not be able to join a quick conference, the sales person still gets the information needed via IM to close the sale.

JITFTE examines business benefit of improved communications and collaboration by looking at specific business processes, such as sales cycles or length of time required to complete a customer inquiry. The goal of this approach is to determine if the application of unified communications technologies can shorten these cycles, leading to such tangible benefits as increased sales or higher customer retention/satisfaction rates.

Consulting Projects							
Average Project Size	Typical Project Margin	Typical Close Rate	Number of Projects Bid Per Year	Bottom-Line Value of New Projects To Consulting Firm	Incremental Impact of Increasing Close Rate by 1%	Incremental Impact of Increasing Close Rate by 2.5%	Incremental Impact of Increasing Close Rate by 5%
$250,000	60%	75%	75	$8,437,500	$8,550,000	$8,718,750	$9,000,000
Marginal Improvement					**$112,500**	**$281,250**	**$562,500**

Figure 4 - Just-In-Time-Fetch-The-Expert

Figure 4 - Just-In-Time-Fetch-The-Expert, shows a JITFTE scenario for a professional-services firm. In this model, the firm bids on 75 projects per year and has a typical close rate of 75%, for an annual revenue stream of $8,437,500. If the firm is able to apply unified communications technologies to close just 1% in additional business in a year, the tangible benefit is $112,500. This benefit increases rapidly as close rates improve, with a 5% increase in close rates providing a benefit of $562,500.

Several enterprises noted that real-time collaboration technologies including unified communications helped them better support their virtual workers, leading to greater opportunities to reduce costs and improve retention by allowing more people to work from home. But often these cost savings are perceived rather than quantified: Only 32% of enterprises have quantified cost benefits as a result of UC.

In another example scenario involving integration of unified communications systems with business processes, a shortage in a warehouse could trigger an instant message to all product inventory managers, along with a proposed conference call meeting time, and additional information about the trends leading to the shortage. That helps the organization quickly address the underlying causes of the shortage and re-establish the proper pipelines. In this example, an organization can reduce losses of an outage by between $6,250 and $25,000 by enabling faster communication to quickly react to supply chain disruption. (Please see Figure 5: Communications-Enabled Business Processes).

Communications Enabled Business Processes						
	Cost Per Lost Sale	Number of Lost Sales	Total Losses	With 5% Improvement	With 10% Improvement	With 20% Improvement
	$25	5000	$125,000	$118,750.00	$112,500.0	$100,000.0
Loss Reduction				**$6,250.00**	**$12,500.00**	**$25,000.00**

Figure 5: Communications-Enabled Business Processes

Enterprises can leverage unified communications to improve contact center performance, as well. In one example identified by Nemertes Research, a healthcare company was able to leverage unified communications to improve customer support capabilities. In this example, the facility ran contact centers for health insurance, government and corporate customers to support an "Ask a Nurse" program, enabling customers to quickly reach a nurse to discuss their medical issues.

By deploying unified communications in the contact center, agents were able to more quickly reach available nurses to answer customer calls. In addition, the use of IP-based technologies allowed the company to virtualize its call center workers, enabling them to work from home rather than from a centralized physical contact center facility, saving $3 million in facilities fees. A similar organization noted improved retention rates and morale, simply by using presence capabilities to locate on-duty staff, thus reducing the need to page off-duty doctors.

What are the challenges?

Enterprises face a number of challenges as they migrate to a unified communications environment, these include:

- Management and control of presence information.
- Organizational challenges in integrating applications that are in many cases managed by separate groups.
- Technical challenges.

A number of enterprises that participated in Nemertes' benchmark concern, both individually and from others in their organization, about the lack of privacy in a unified-communications environment, where every device is reporting presence information that others can access. Couple presence with geo-location services, and it becomes easy for managers or co-workers to track not only a person's status, but also their physical location.

Enterprises will struggle to adopt privacy and control procedures that balance the needs of management with the privacy desires of the individual, as well as security controls to manage the flow of sensitive information within the organization.

Organizational issues in many cases hamper the ability to adopt unified communications, with buying decisions spread across multiple independent organizations. Approximately 8% of enterprises have established dedicated collaboration and convergence planning groups, typically consisting of representatives from various application domains (e.g. messaging, voice, instant messaging, and other collaboration-related areas) as well as security/compliance, and network support organizations.

These organizations are the ones best suited to implement unified communications and collaboration. Organizations that are still maintain silos of disparate groups with little interaction will struggle to implement unified communications moving forward.

Enterprises also must look at the technical issues involved as more employees communicate and collaborate via an ever increasing number of applications and devices (a trend often referred to as "hyperconnectivity"). Hyperconnectivity changes network traffic flows from a client-server hierarchy,

to a person-to-person or person-to-group flow based on any-to-any communications. Coupled with communications-enabled business processes, hyperconnectivity also includes machine-to-machine and machine-to-individual communications. All of these communications will occur over both wireless and wired networks, increasing network management complexity. Enterprises must address issues around changing traffic flows as a result of a shift from client-server computing to peer-to-peer applications. Performance management tools are often required to enable organizations to manage the quality of the user experience.

Network requirements are already hampering some adoption of unified communications. For example, from 2005-2006, Nemertes noted an increase in deployment of desktop video conferencing by only 8% (from 22% to 30%). Those that were not supporting desktop video conferencing most often cited concerns over network bandwidth and network performance as key factors for the lack of deployment.

Another technical challenge is integration of various applications for such services as "click-to-call" via a buddy list, or sharing of presence information among various platforms. While many vendors support the session initiation protocol (SIP) for UC component integration, enterprises will often find differing capabilities and feature sets, and may need to rely on integration services to support implementation efforts. Older systems may not have an upgrade path to SIP and will require replacement.

Building a business case

Any IT investment must accomplish one of two things, either reducing costs or increasing revenue. Positive ROI is achieved when either of those values exceeds upfront and on-going investment costs. Based on Nemertes' research, organizations on average can expect to spend roughly $560 per person on their UC implementations. For a sample organization size of 10,000 employees, this translates into a need to demonstrate some combination of $5.6 million in cost savings or increased revenues, typically within a payback period of one year or less.

Return can be quantifiable, as demonstrated in the scenarios around CEBP and JITFTE, or organizations can quantify improvements in productivity. For example, an organization can demonstrate that elimination of phone-tag as a result of presence-enabled communications reduces the time workers spend chasing down each other and retrieving voicemail messages by 30-minutes-per employee per-day. Take an example organization with a $30-per-hour loaded salary, and this translates into potential cost savings of $15 per-day, per-employee. Again, using our 10,000 employee scenario, this translates into a savings of 123 hours per-employee per year (based on 245 work-days in a year), for a total annual savings of $36.75 million. (Please see Figure 6: Communications Efficiency Savings). Of course, this assumes that the time saved is used for other productive purposes.

Communications Efficiency Savings						
	Work-days	Minutes Saved Per Day	Total Annual Hours Saved	Total Annual Cost Savings Per Employee	Employees	Total Annual Cost Savings
	245	30	123	$3,675	10,000	**$36,750,000**

Figure 6: Communications Efficiency Savings

So if we assume that a 10,000-person organization implements UC at a cost of $5.6 million, a savings of 30 minutes per-day per-person easily justifies the investment. Moreover, even if we assume only 50% of the saved time is reused for productive business activity, we still see a positive return of $15.5 million. (Please see Figure 7: UC ROI).

UC ROI						
	Implementation Costs	Employees	Total Implementation Costs	Total Annual Cost Savings	ROI	50% Productive Reuse of Time
	560	10000	$5,600,000	$36,750,000	**$31,150,000**	**$15,575,000**

Figure 7: UC ROI

From the CIO perspective UC may look like an enormous challenge, but the reality is that UC offers the ability for IT departments to deliver a set of integrated communications applications that improve organizational agility and leads to tangible business benefits.

Getting from here to there

The road-map for implementing unified communications will vary greatly within each organization. Enterprises can either purchase a complete UC system such as Nortel Multimedia Communications System (MCS) 5100 or Siemens HiPath OpenScape. Or, they can integrate planned or existing best-of-breed components such as IP-telephony systems, instant-messaging applications or hosted services, web-conferencing platforms or services, video conferencing, and calendaring/messaging components to create their own unified-communications architectures.

Most enterprises interviewed for *"Building the Successful Virtual Workplace"* were adopting an instant-messaging-centric approach to UC. That is, they planned to use either Microsoft Office Communicator or IBM Lotus Sametime as the real-time communications dashboard and integrate other applications into their chosen IM platform, using the IM client for presence display and click-to-call functions. Fortunately, almost all vendors in unified communications application space have delivered or announced capabilities to integrate their products with either Microsoft or Lotus IM environments, though capabilities vary across vendors. For example, almost all VOIP vendors offer some level of interoperability with Microsoft Live Communications Server 2005 (and the forthcoming Office Communications Server 2007), but interoperability

varies by vendor. Some vendors require gateway servers to exchange presence information or support click-to-dial from within a buddy list, while others support direct connectivity through IP telephony server support for the CSTA protocol.

Beyond integration of IM, Web/audio/video conferencing, and VOIP enterprises can further integrate messaging and calendaring applications, enabling presence status to change as someone goes into and out of meetings. Presence status can be displayed as icons within Microsoft Outlook or Lotus Notes, or across other integrated applications such as mobile clients, shared workspaces, or other office applications. Again, the ability to deliver these capabilities will vary across vendor product lines with most vendors offering integration with Lotus Notes and Microsoft Exchange/Outlook.

Conclusion and Recommendations

Unified communications offer tremendous opportunity to improve enterprise efficiency, speed communications and decision making, streamline tasks, improve workflow, shorten project lifecycles, and improve customer interaction. A successful implementation requires enterprises understand these benefits, determine specific business cases that are applicable to their own organizations, and develop a migration strategy that takes both architecture and organizational factors into account.

Enterprises should integrate architectural planning functions for all communications applications via converged teams or cross-functional communities charged with creating an organizational-wide roadmap for adoption of unified communications. This requires integration of infrastructure planning with application planning to create a common communications and collaboration architecture for the organization as a whole.

Enterprises should look for specific business processes within their organizations that can best benefit from unified communications, and should use these business cases as the starting point for development of investment strategies.

Finally, enterprises should work with their strategic vendors to determine unified communications roadmaps, paying special attention to evolving partnerships between companies and the opportunities those partnerships present.

About Nemertes Research: Founded in 2002, Nemertes Research specializes in analyzing the business value of emerging technologies for IT executives, vendors, and venture capitalists. Recent and upcoming research topics include security and information protection, mobility and collaboration technologies, and outsourcing.