A Technical White Paper For Businesses Considering UC Implementation

By Ernest O'Dell – Questar TeleCommunications

Seven Ways to Deliver Value

The end of phone tag. Turn your desk and mobile phones into one with Unified Communications and Messaging Integration. One number. One Voicemail. Wonderful.

A White Paper on the Cost Effectiveness, Simplicity, Functionality and Implementation of Unified Communications and Messaging Through a Virtual Network. (Hereinafter referred to as "UC.")

Unified Communications and Messaging offers tremendous potential for business benefit, but CIO's, CTO's, I/T managers (and their CEO's) have often struggled to understand UC and with identifying a tangible ROI.

This report provides a roadmap for building a business case for UC in your business model and offers practical strategies for implementing short-term projects with long-term payback, establishing metrics for ROI evaluation, and setting the stage for adoption of richer collaboration capabilities in the future.

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1. Getting Started On The Road To Unified Communications

Unified Communications, is not a "do-all-end-all" solution for everybody or for every business case and/or model. UC is not going to be a necessity in every industry—or business sector—nor will it be the "onesize-fits-all" solutions to your communications needs. Your business may be running efficiently with smaller, disparate systems and may not need a comprehensive solution. In either case, it would be to your advantage to evaluate your systems and compare them to alternate solutions.

Getting started with a comprehensive evaluation of UC depends first on understanding your business and what you want to achieve, than charting a course that will define what UC can do for you, and what it cannot do for you. This will require a clear picture of what UC is and is not, what UC involves, how it works, and what it can and cannot do for you and your business.

UNIFIED COMMUNICATIONS, or UC, has been the buzzword in enterprise collaboration over the last couple of years or more, as vendors, service providers and IT managers have viewed UC as a way of removing stumbling blocks on the road to effective collaboration. But UC has been a tough sell for many enterprise IT leaders who struggle to build a tangible business case to justify investment, especially in light of the current business climate.

In previous studies it was found that projects would require a positive ROI of 12 to 36 months to gain funding (with heavy emphasis on the "12 months" side of the equation). That is no longer the case. As a matter of fact, the ROI and expenditures can now be evaluated in a much shorter time frame, and returns can also be realized within the first 30-90 days of implementation.

Therefore the goal of this report is to provide IT leaders with a common framework for UC discussion, an overview of the tools they need to identify UC use-cases with tangible benefit, approaches to quantify specific benefits of UC adoption, and ways to plan for emerging technologies that add value to the UC architecture.

Before getting too deep into the "why" of UC, it's worth spending a few minutes looking at the "what." Despite (and perhaps as a result of) vendor marketing efforts to boost UC awareness, we at Questar TeleCommunications Division of Unified Communications have found a great deal of confusion concerning exactly what UC is, and what it is not.

Two (2) key goals of Unified Communications:

- To integrate disparate communications applications such as voice, video, conferencing and messaging applications into a common set of user interfaces accessible across fixed and mobile devices—including, but not limited to—the Internet, cell phones, fax and email.
- To integrate those applications into your business processes, giving individual employees and teams in your company the tools they need to communicate within the constraints of specific operational requirements.

The extensible and scalable nature of UC allows IT architects to embed communication and collaboration capabilities throughout the suite of business process applications. The Questar TeleCommunications UC architectural model defines the following components:

UC Applications

The services that employees can use to communicate and collaborate, both internally and externally. Most organizations start with voice over IP (VoIP), video and email, building in additional applications such as video, unified messaging, social networking and Web conferencing as they evolve their deployments.

- <u>Presence</u>: The "glue" of unified communications, enabling applications to share information about user status and availability.
- <u>Common protocols</u>: The standards for linking various services to one another, as well as to external applications via gateways or application interfaces.

- <u>User interfaces</u>: The methods that provide access to various UC services. Interfaces may be stand-alone desktop or mobile clients (i.e., a real-time communication dashboard such as iTeleCenter, Microsoft Office Communicator, or another client) or they could provide UC services access via a portal, office application (such as Microsoft Office or IBM Lotus Notes) or through custom-written applications designed for a specific organization, vertical or job function.
- <u>Gateways</u>: To external systems, such as legacy PBXs, public instant messaging, external wireless networks, or business applications via Web services or service-oriented architecture (SOA) frameworks.
- <u>Management, directory and security services</u>: The core infrastructure to support UC. This includes security, network and performance management and optimization, along with directory and identity services.
- <u>Integrating disparate systems</u> within a Multiple Protocol Labeling System or SIP Trunking to provide for future scalability.

The key goals of UC are to integrate disparate communications applications and to further integrate those applications into business processes, while at the same time ensuring scalability.

2. Applications That Yield Benefits Now

Quantify UC's Benefits

Applications that yield benefits now in today's economically challenging environment, require that organizations start with projects that produce a relatively large and quick payback for the investments they require. We discuss several short-term UC projects and the benefit versus cost that they deliver.

In light of the current recession, CTO's, CIO's and I/T managers are struggling to create business cases to justify UC adoption. Business benefits for UC are often difficult to quantify and clearly define. Arguments such as "improved worker productivity" don't always resonate with the boardroom, I/T or line-of-business managers looking to reduce bottom-line expenses or increase top-line revenue.

Instead, IT leaders—and, especially their CEO's—look primarily to shortterm ROI (12 to 36 months) to justify any new expenditures. Creating a successful business case for UC applications therefore requires identifying ways for UC to reduce operational spending as well as opportunities to use UC to drive either top-line revenue growth or bottom-line cost savings by improving business processes.

The second approach requires a standardized way of measuring the value that UC brings to the organization.

Using UC to drive cost savings out of current operations requires a detailed analysis of telecom spending patterns combined with capabilities of UC applications to discover opportunities for savings.

Through our interviews with hundreds of IT leaders, CIO's, CTO's and CEO's, Questar TeleCommunications has uncovered numerous examples of using UC to drive down operational spending. These include, but are not limited to:

- In-house conferencing systems
- Web conferencing and teleseminar/teleconferencing systems
- "Follow me" applications to wireless (cell) phones
- Fax to cell—and back
- Voice to txt—txt to voice
- Caller ID "lead capture" with name and address functionality

Today's IT departments are very careful about making investments, and more than half of our research sample reported the most important reason for a purchase was the short-term ROI.

Most organizations rely on hosted audio and Web conferencing bridge services, administered by TPA's (Third Party Administrators) and Value Added Application Service Providers (VAASP). These services are often billed on an economical model of package rates, or a per-line or per-user basis, plus per-minute usage fees. Scaling these services to include more lines to accommodate their workforce is economical and workable in many instances.

By bringing these services in-house, integrated with a VoIP system or a desktop "buddy-list" client to enable "*meet-me*" conferencing, organizations can eliminate the need for hosted services from a TPA. But costs associated with this move are not always the best solution and in many cases the TPA hosted service will, many times, prove sufficient.

One research participant noted that his organization eliminated 90% of its audio conferencing budget by moving to an in-house solution, even after adding more telecom trunks for external callers. However, the costs of operations and maintenance was also increased with equipment and technicians.

Other studies have noted 30% to 50% cost savings compared with hosted Web conferencing services. While audio or Web conferencing alone aren't strictly UC, audio conferencing savings are increasingly the key driver for deployment of UC platforms that integrate Web conferencing, audio conferencing, video and text chat into a seamless set of applications.

<u>SIP Trunking</u>: SIP trunking is emerging as an advanced communication service with significant potential to reduce telecom costs and improve service flexibility. SIP trunking eliminates the on-premises gate-way for connecting enterprise telephony systems within the Public Switched Telephone Network (PSTN), essentially moving the IP-to-TDM gateway into the service provider's network.

Many SIP trunking providers offer services to route incoming and outgoing calls based on policies or load, as well as virtual-number services to provide local dial-in numbers outside of operating regions. SIP trunking adopters report savings of anywhere from 20% to 60% on PSTN access costs, depending on size and scope of their business operations.

According to our research, 53% of companies are using SIP trunking today, planning to use SIP trunking services in the next two years, or evaluating SIP trunking as an alternative for eventual deployment, with adopters reporting savings of anywhere from 20% to 60% on PSTN access costs.

Like conferencing, **SIP trunking by itself is not UC**, but adoption of SIP for PSTN trunking sets the stage for wider use of SIP for system interconnectivity and connecting to external partners or services for real-time collaboration across company boundaries.

<u>Unified Messaging</u>: Unified Messaging represents a subset of unified communications, focusing on management and integration of voice, fax and email messages into a single user *inbox* accessible via desktop or cell phone, or via a phone-based user interface.

<u>IP Telephony</u>: While many larger companies have slowed their IP telephony rollouts, choosing to prolong the use of existing endpoints for as long as possible, few companies have no plans at all to deploy the technology. IP telephony offers significant potential for cost savings from reducing long distance charges by trunking calls across the WAN and simplifying existing infrastructure by centralizing call servers. Bringing IP to the desktop offers opportunities to further reduce costs by leveraging existing LAN infrastructure.

However, should the IP fail or have a temporary interruption of service, or worse a DOS (Denial Of Service) attack, your voice over IP venue is disabled.

We continue to see adoption of IP telephony "soft phones" for remote/traveling workers and in contact centers as a way to reduce peragent setup costs by eliminating dedicated desktop phones.

<u>VoIP State of Deployment</u>: All New IP telephony rollouts have slowed recently, according to our research statistics, but adoption is still widespread, with most enterprises enjoying limited deployment or continuing to expand their IP telephony implementations.

<u>Video Conferencing</u>: The use of video conferencing has been in use for a couple of decades now, and as time goes on, becomes more economical to implement and maintain. It continues to grow, with many organizations justifying investment either in response to decreasing travel budgets or as a way to justify travel budget reductions.

We continue to see strong interest in telepresence, high-definition, web conferencing and desktop video to interface with other systems across all verticals. In the case of telepresence, there is an opportunity for substantial benefit despite high up-front costs. Approximately 28% of companies are deploying or planning to deploy telepresence. Typical deployments are limited, with only a handful of rooms located in large office locations.

But with the mean price of a room deployment hovering around \$250,000, plus ongoing costs for bandwidth and management, how can organizations justify such an expense, especially in light of shrinking or flat IT budgets?

The answer is simply that executives perceive a great deal of value in meeting via telepresence versus room-based, desktop, or audio conferences. Telepresence, unlike other meeting technologies, is perceived as a suitable replacement for in-person meetings, especially for senior executives.

One research participant told us that, to his organization, telepresence is the new "corporate jet," especially now that travel by actual corporate jet is often seen as an unnecessary luxury. In the case of multi-national office locations, this is certainly a viable option.

Telepresence can produce value on a company-wide basis as well. One global energy company is cutting its entire executive travel budget by 15% to fund its telepresence initiative, with a payback period of less than two years.

<u>Supporting virtual workers</u>: IT leaders see investments in collaboration services as a key requirement for supporting the growing virtual work-force (more than 85% of companies are increasing the number of teleworkers).

UC applications such as instant messaging (texting), integrated voice, Web conferencing, presence and desktop video can overcome the distance barriers that often hinder collaboration among distributed workers. IT managers using UC to support teleworkers report tangible benefits, including improved employee retention via support for more flexible work schedules and improved customer service by leveraging time zones to extend hours to enable customer support outside of local operating hours.

One telecommunications firm uses—and supports—its own staff of teleworkers across the globe in virtually every time zone, on every continent to support their technical support customers, their order entry and provisioning divisions, thereby maintaining a 24/7 presence world wide.

They can also enjoy reduced costs by using UC to hire workers outside a company's physical operating location and reducing the actual office space they need in expensive facilities, allowing the workers to work from a "home office."

3. How To Quantify UC's Benefits

Businesses interested in UC, especially those involved in quickly getting information to customers, can use models to determine how much they will benefit by introducing UC into their environment.

WHILE ALL THE technologies in the previous chapter offer opportunities to reduce ongoing operational costs, it is perhaps UC's capability to streamline business processes for tangible gain that offers the biggest opportunity for benefit. But applying UC to improve business processes is a complex challenge that first requires discovering end-user demand for UC applications.

We have found a strong shift away from IT promoting new technology in the hope that users will find it beneficial. Many IT leaders are, instead, working as a partner to help educate line-of-business managers on emerging UC technologies and the potential benefits. In most cases, the low-hanging fruit for UC is to improve real-time collaboration to speed up the decision making process.

Finding Experts Fast Saves Money

An approach to quantifying UC's benefits in improving specific business processes is called "Just in Time Fetch the Expert" (JITFTE). This model is applicable for most organizations that place a heavy emphasis on reactively or proactively getting information to customers, 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 location or region.

In these scenarios, UC helps improve "sales to close" ratios by giving customer-facing persons faster access to individuals or groups possessing specific expertise. Salespeople can locate experts in rapid time to help close a sale. A tech support agent can find someone with specific expertise to answer a customer's question.

Marginal improvements = Significant savings

Without JITFTE, the game of phone tag ensues, with the customer-facing employee taking notes, locating an expert, getting an answer, and calling the customer back—a process that reduces the likelihood of success, potentially puts a company at a competitive disadvantage, and costs money in lost time and efficiency.

Presence-enabled unified communications serves to virtualize corporate resources, enabling individuals to find the experts they need, regardless of location, and quickly link them into a call, Web conference, video conference, or audio bridge.

JITFTE examines the business benefits 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 whether the application of unified communications technologies can shorten these cycles, leading to such tangible benefits as increased sales or higher customer retention and satisfaction rates.

The JITFTE model can be applied to any organizational process that can benefit from faster access to information or subject-matter experts. In a healthcare scenario, an organization operates a phone-based "Ask a Nurse" program that fields calls from individuals who want advice from nurses. Key challenges include staffing the contact center and responding to patient inquiries as quickly as possible.

UC helps improve close ratios by giving customer-facing persons faster access to individuals or groups possessing specific subject-matter expertise.

In this particular example, the company saved \$11 million by using UC to enable virtual agents instead of building a new fixed contact center to meet expansion requirements. The organization implemented UC capabilities, including instant messaging and voice conferencing coupled with presence awareness, and realized the following tangible benefits:

- Increased throughput of contact centers. By leveraging UC, nurse agents can use presence information to quickly find experts able to assist with patient questions. Measurable benefits include increased contact center throughput, reducing staffing requirements and reducing the need to expand contact-center capacity.
- Faster response time to patient needs. Increased ability to quickly respond to patient calls, conference in medical experts, or use instant messaging to talk to physicians leads to faster resolution of patient requests without requiring physicians to call patients, improving customer satisfaction.
- Ability to support distributed workers. By using IP-based communication services to enable telecommuting, organizations can avoid opening new contact centers and hire workers in regions with lower employment costs.
- Integration with medical records systems and Web conferencing applications for groups of nurses and doctors to quickly access and jointly review patient data, speeding diagnosis and response times.

In another example, a telecommunications company who employs the use of independent representatives has set up a virtual call center where the rep can log into their admin panel, click a check box, and immediately be able to take inbound calls as they are sitting in their homes, anywhere in the world.

One of the functions of the back office also allowed them to set up alternate numbers in a "roll over" where if the call wasn't answered on the second ring, it would automatically be switched to a second—or even a third—number programmed into the interface. This eliminated the need to build a "campus" to house a call center, and provided 24/7 support for the customers who would be calling in from different time zones around the world—effectively giving them an international presence, "around the clock" and around the world.

4. Measuring Productivity Improvements

Return can be quantifiable, as demonstrated in the JITFTE scenarios, 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 one another down and retrieving voicemail messages by 30 minutes per employee per day. Take an example organization with an average \$30 per-hour salary, and this translates into potential cost savings of \$15 per employee per day.

An example that could be used here is a medical practice that has several doctors employed in an office and the practice has multiple locations, including one or more hospitals spread out across town. When a patient calls in trying to talk to their doctor, does the nurse/receptionist know where they are? Do they page them? Or can the patient call into a UC system and just dial his extension number and have it routed directly to the doctor—or to their voice mail? With UC, this is made possible by eliminating the "chasing down" of people and losing productive time and money.

Again, using a 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. Of course, this assumes that the time saved is used for other productive purposes. If we assume that only 50% of the saved time is reused for productive business activity, we still see a positive annual return of approximately \$18.37 million.

The goal of JITFTE is to determine whether UC can lead to tangible benefits, such as increased sales or higher customer retention and satisfaction rates.

In the short term, the results are clear: UC offers IT managers the ability to reduce operating costs while also contributing to increasing top-line revenue, all through improving the ability of workers to collaborate faster and easier.

5. Planning For Future Success

One of UC's many benefits is that solid planning will allow you to build on initial applications and implementations to expand communications capabilities into the future. Specific applications and services should be on your long-term radar.

WE'VE SEEN HOW approaches such as Just in Time Find the Expert (JITFTE) can improve business processes by allowing front-line workers to quickly access the expertise they need to find the answer to a challenge. But just how do organizations gather knowledge about who the experts are for particular processes, products or services?

That's where enterprise 2.0 technologies come in. Enterprise 2.0 defines social computing applications that take advantage of the collective knowledge of the organization to enable workers to classify themselves, or classify one another based on criteria such as expertise or helpfulness. Via social networking, an organization can build a repository of worker skills that is constantly updated by direct employee involvement and input.

Combining social computing with Web 2.0 social networking concepts allow workers or customers to tag one another as experts on a particular product, service or issue.

JITFTE finds experts and leverages their value. Instead of pre-defined, static roles, organizations can take advantage of Web 2.0 social networking concepts to allow their own workers or customers to tag one another as experts on a particular product, service or issue. They can use customer-or employee-driven rating systems to determine the "go-to" people for particular issues.

Consider an approach where rather than just randomly going to the "dishwasher servicing" group and asking who is available to assist on a call, a customer service agent could search a social networking system for a specific model or type, quickly find all those tagged as experts in that product, see ratings from customers and other staff members, and use presence and UC dashboard capabilities to start a conversation or link that expert to a customer call.

In this example, Web 2.0 concepts lead to demonstrable business benefit, supporting the concepts of JITFTE and creating real value to the customer and revenue opportunities for the organization, in addition to enhancing all the other benefits of UC in process and capacity improvements.

BRIDGING PUBLIC AND PRIVATE NETWORKS

Another area to watch with respect to UC is the blurring of public and private networks, as well as enabling collaboration outside the company. We're already seeing companies leverage public social networks to put status and click-to-call capabilities on sites such as Facebook. Skype is entering UC architecture discussion via its Skype for SIP offering. Beyond integration with public services, considerable interest is seen both from end users and vendors in creating capabilities for seamless collaboration with external partners.

Capabilities can be as simple as scheduling meetings through a Webbased service or leveraging SIP or H.323 gateway services for presence sharing and call set-up for audio or video conferences. But external connectivity raises concerns around interoperability.

In the telepresence world, multipoint external conferences aren't possible, and they won't be any time soon because of a lack of agreed-upon standards for features such as multi-channel audio or switching screens to an active speaker. The use of SIP, while offering a common framework for UC interconnectivity, actually further complicates integration because SIP's flexible nature enables vendors to adopt their own proprietary methods for session establishment and management.

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New virtual reality capabilities such as shared whiteboards, touchsensitive desktops and interactive walls are quickly becoming part of telepresence suites. Holographic imaging and virtual reality rooms once the domain of futuristic action thrillers—are now entering the test labs. Soon they will become the common-place applications of mainstream business.

Finally, IT leaders should keep abreast of cutting-edge technologies that may soon become part of the UC portfolio. Video conferencing continues to improve, and high-definition video is rapidly moving to 1080p at 30 frames per second, while some vendors are even demonstrating 1080p at 60 frames-per-second capabilities. Desktop high-definition video is increasingly available, and new video codec standards such as H.264 Scalable Video Conferencing (SVC) offer highquality video over poor or unreliable network connections.

New virtual reality capabilities such as shared whiteboards, touchsensitive desktops and interactive walls are quickly becoming part of telepresence suites. Holographic imaging and virtual reality rooms once the domain of futuristic action thrillers—are now entering the test labs. Soon they will become the common-place applications of mainstream business. Virtual reality helmets are emerging as potential end-points. Along with virtual reality rooms, these offer the potential for participants to fully immerse themselves in a meeting without leaving their desks.

6. Steering Clear of UC Snags

Any road map encounters bumps, snags and obstacles along the way. Learn about the key concerns facing UC implementations and how you can avoid them. Following these best practices for facing network integration, management, compliance and privacy challenges will put your UC project on the right path and make for an easier launch.

DESPITE ALL THE potential benefits that UC brings to the table, there are important areas that, if not addressed, can torpedo your UC project. Be sure to include the following areas in both your short-term and longterm UC planning, or face being sidetracked in your deployment:

- Ensure adequate UC training for your IT staff: IT executives are experiencing challenges in finding those well trained in UC implementation and management. IT managers increasingly rely on managed service providers¹ to assist in supporting their UC implementations, but we continue to hear of concerns extending beyond hiring their own staff to finding qualified VARs², consultants, and even vendor engineers.
- Compensate for lack of management tools: IT architects cite the lack of tools that allow them to manage and troubleshoot performance of UC applications, especially video and interconnections such as presence sharing. In many cases, engineers still rely on packet capture and manual examination of flows to determine problems—a long and tedious enterprise that requires technicians to possess a solid understanding—not just of message flows—but also of vendor proprietary extensions to SIP and MPLS.

¹ Managed Service Providers (MSP's) are sometimes associated with Third Party Administrators (TPS's). While there are similar functions between the two, they are not always one and the same.

² Value Added Resellers

- Lock down UC security: Applications with external connectivity, such as SIP trunking, MPLS, soft phones and external video conferences, create a new vector for attack. In most VoIP architectures, the PSTN serves as a firebreak between the enterprise phone system and the rest of the world. Risk of attack from the Internet is low because the VoIP system is physically and potentially logically isolated from the outside "cloud." Introducing external-facing applications changes this paradigm, as the enterprise phone system and other UC-related applications become vulnerable to IP-based attacks.
- Address compliance: The 2006 updates to the Federal Rules of Civil Procedure (FRCP) (26-b-1) define electronic information discovery as allowing "...the party making the request to inspect, copy, test, or sample any designated documents or electronically stored information—including writings, drawings, graphs, charts, photographs, sound recordings, images, and other data in any medium from which information can be obtained—translated, if necessary, by the respondent into reasonably usable form."

This broad classification of all electronic data as discoverable has farreaching implications for UC applications, including unified messaging, text-chat, and Web/audio/video conferences that are potentially recorded for training purposes or future play-back. Questar TeleCommunications strongly recommends that IT leaders address compliance concerns early in the planning process.

UC and the benefits it brings have real potential to reduce operational costs and improve top-line revenue. IT planners should carefully examine their internal business processes to build optimal business cases for UC adoption while paying attention to the need for a proper architecture to address UC implementation challenges.

Ernest O'Dell is the President and CEO for Unified Communications research at Questar TeleCommunications, where he is responsible for benchmarking the adoption and use of emerging technologies in the enterprise 2.0 sector. His areas of expertise span more than 30 years in the telecommunication industry and include VoIP, Unified Communications, Messaging, Web 2.0 initiatives, social networking and collaboration.

7. Other presentations and White Papers by Ernest O'Dell:

- Turning Your Phone System Into An Automated Lead Generation System
- Implementing Unified Communications Into Your Business With iTeleCenter
- The end of phone tag. Turn your desk and mobile phones into one with TREP Unified Communications. One number. One voicemail. Wonderful. Integrating Unified Communications and Messaging Into Your Real Estate Business.