



Unified Communications and the Power of Success

Understanding the Unified Communications, Telephony, and Collaboration Paradigm

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Introduction

What is Unified Communications (UC)? How can a UC solution affect an organization's structure? How can companies better support the Generation Y workforce? Why should firms transition from a traditional communication model to a UC model? How can a firm improve collaboration among knowledge workers? Does it make sense to deploy a UC solution during these economic times? This whitepaper addresses these questions and many others.

Unified Communications bridges the gap between voice, data, and mobile networks. Technology platforms such as instant messaging (IM), presence, voicemail, VoIP, web/audio/video conferencing, and mobility are integrated to increase productivity and streamline the end-user experience.

Before plunging head first into a UC venture, firms need to understand the evolving generational attitude and the potential organizational shift that is generated by introducing new technology.

Traditional and Generational Technology Views

Today's workforce is a melting pot of baby boomers, as well as Generation X and Generation Y employees, and it is apparent from their behaviors and preferences that each generation has different views and levels of understanding about technology in the workplace. Baby boomers are used to a "siloed" approach to workplace technology, which requires users to be present in the location of the communication medium. For example, people with 30 years of experience are more likely to pick up a telephone rather than send an instant message or email to a colleague. When users are not present, business decisions may be delayed.

Generation X employees, those born between the early 1960s and late 1970s, benefitted from early forms of electronic communication and typically prefer communicating by email rather than by telephone. With the introduction of near-real time email systems, they quickly discovered the benefits of sending messages, regardless of location. This helped speed up business decisions and produced better informed workers. The technology and business trends introduced during this generation's youth paved the way for future generations of workers.

Generation Y, also known as "Millennials," is comprised of employees who demand more instantaneous and flexible communication. There is a differing view of traditional business hours, compared to baby boomers' 9-5 work day. Millennials tend to stay connected 24/7/365 due to growing up with broadband technologies and emerging social media outlets. Millennials don't just like a certain degree of integrated communication within the workplace and instant access to colleagues; they expect it.

What does advanced technology mean for companies today? In an era dominated by cost control and the need for efficiency, companies must look at technologies that can increase work efficiency across all generations. The combination of email, conferencing, voice, and instant messaging integrates and enhances intra-team communication and empowers efficiency for expensive knowledge workers who may work at home or at a client as often as they work from their office. Appropriate utilization improves customer needs, processing, and response. Methods of working and communicating within a company can attract or deter future employees. For example, internal technologies that enable

employees to send and receive instant messages to co-workers via smart phones are attractive to the Generation Y age. Organizations with the best-of-breed technology, therefore, have the potential to recruit and retain higher caliber candidates.

The Paradigm Shift within IT Organizations

The successful adoption of UC solutions often requires firms to understand the nature and utilization of their own IT operations first in order to prepare for the deployment.

Companies traditionally have segregated telecom, network, and server teams, requiring teams to operate independently. Barriers arise in this model and lead to communication breakdowns with divergent approaches. For example, traditional telecom teams are more likely to prefer legacy and proven systems while network teams are more likely to grasp and support emerging technologies.

As technology solutions continue to evolve, staff age will be a key consideration within IT departments. Administrators who have worked for 30+ years in industry have extensive knowledge, but they tend to prefer legacy, proven technology. As these administrators near retirement, corporations must look towards the Millennial generation and their “wired” world to lead the IT operations.

Organizations that have a telecom department may be hesitant to deploy VoIP based systems. These organizations tend to remain on legacy systems, including TDM platforms, because of uncertainty in the ability of the IT department to build and/or maintain a reliable network to support VoIP. Simply put – the telecom department often doesn’t trust that the IT department can build a reliable enough network to meet the requirements for voice. Traditionally, these companies consider a hybrid system with a portion of VoIP phones, but the TDM platform remains at the core. These organizations continue to be the strong users of Avaya and Nortel.

On the other hand, in organizations that already have retired the telecommunications department, IT departments may attempt to pilot VoIP and then typically take over from there. Generally, though, IT teams do not have a good understanding of telephony requirements. Administrators must understand that the expectation for voice is higher than for IT (everyone expects the dial-tone to just work). Often times, IT departments will not complete a selection process—instead opting for a Cisco solution because they are comfortable with their existing Cisco networking infrastructure.

Add in the complexity of new entrants, such as Microsoft and Altigen, and the fine line between voice and data becomes blurred.

The TDM to VoIP Transition Process

Of course every organization is unique, but firms that are successful at replacing legacy technology and integrating new UC technologies tend to go through a transition similar to this:

- 1) Unless there is an immediate need to change, the call center’s traditional TDM technology is retained for the time being.
- 2) The telecom department (already shrinking through retirement attrition) is integrated into the IT function.

- 3) The legacy telecom team supports the call center and works closely with the rest of the IT department to pilot and deploy VoIP/UC to the rest the organization using a cross-functional selection process. During this process, the IT team learns how voice technology really works—e.g., it’s not just bits on the wire; there are real requirements for reliability and quality.
- 4) Once a significant part of the organization is deployed on the VoIP solution, the call center is migrated. By now, the IT team knows how to support voice applications.
- 5) Once the organization is migrated to voice technology, the remaining telecom department either is retired, or it integrates successfully into the IT team—having picked up enough skills on the new platform.
- 6) The company gains real business champions who see this new ability for employees to communicate anywhere, anytime using a variety of different platforms, as a paradigm shift—one that is a key success factor in customer relationships, employee teamwork, etc.

Trends and Technology

The evolution of UC technologies present organizations with technical, operational, and financial questions such as:

- What tools can be introduced to increase collaboration among teams?
- How can remote employees be better connected and in sync with the corporate culture?
- What are the considerations for switching from TDM to VoIP telephony?
- Is it beneficial to integrate UC technologies into business applications?

While UC solutions can deliver powerful benefits, it is important to acknowledge that there is no such thing as a “standard” UC solution. An organization needs to use the right elements in the right way to support its needs and culture. Before investing in any UC solution, IT managers need to assess their corporate culture and identify where collaboration and communication tools can streamline productivity. Due diligence can help avoid investment in a UC solution that fails to support or grow with the business.

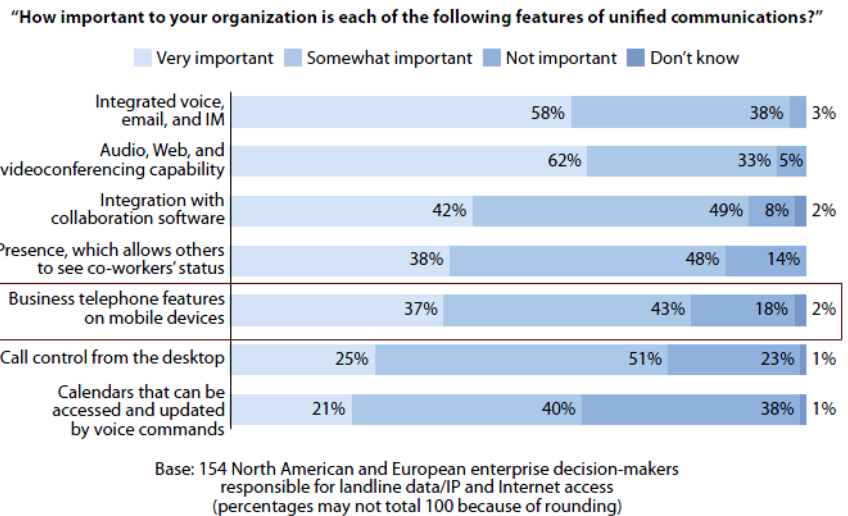


Figure 1 - Important UC Features; “Future View: Mobile Unified Communications Demand And Evolution, 2009 To 2014”; Michele Pelino; Forrester.com, 19 MAR. 2009; Web; 1 AUG. 2009.

As shown in Figure 1, Forrester Research, Inc. surveyed 154 enterprises to determine the most important UC features available to today’s users.

As businesses examine UC solutions, they should consider team collaboration, mobility, VoIP, business application integration, and compliance.

Team Collaboration

Just as UC technologies have attracted attention in the market place, so has the concept of team collaboration. The ability for teams to work efficiently and effectively has been a challenging requirement for decentralized workforces. Cost effective communication is needed to enhance project collaboration in both near-real time and real time situations.

During the 1970s and 1980s, dispersed teams typically communicated via the telephone or conducted face-to-face meetings. During the early 1990s, email communication made its debut in the consumer market, introducing near-real-time collaboration. Over the past five years, UC solutions have started to take the market by storm. With UC technologies, real-time collaboration tools integrate into near-real-time platforms such as Microsoft Exchange and project/team collaboration platforms such as Microsoft SharePoint.

By leveraging the capabilities and features set of UC platforms, dispersed team members can easily locate individuals with specific expertise, increase productivity, obtain immediate answers regardless of location, service their end users, and expedite deals. As teams continue to expand, the ability to collaborate in real time on important business decisions and processes becomes more compelling. Figure 2, below, outlines the features and offerings of project/team collaboration, near-real-time collaboration, and real-time collaboration platforms.



*Note: Various features identified above may be offered from Cisco, Avaya, IBM etc.

Figure 2 – Microsoft Collaboration Overview

Mobile Workforce Support

In many sectors, employees spend more time away from their desk conducting business. Business calls, emails, and instant messages that go unanswered during absences have a real effect on productivity. A UC solution can help ease the transition from cubicle to mobile worker.

Mobile users rely heavily on smart phones and laptops to conduct business while away from the office. These workers typically juggle several different corporate communication systems to access all forms of contact—from email to voice. This access and coordination is a disadvantage in making timely and important business decisions. The goal of UC is to manage multiple phone numbers, contacts, voicemail repositories, and instant message communications utilizing a single, central source.

With UC's single number reach (SNR) functionality, a person is associated with a phone number rather than a physical phone. Users no longer must distinguish between work and home phone numbers. An individual can map the work number to ring at one of several different locations—home, work, mobile—and can specify the hours for the command. This functionality, along with email and instant messages, increasingly supports dispersed workers as they address external business requirements.

Email and instant messages are not strictly desktop tools anymore. A UC solution enables users to access, read, and reply to emails and participate in IM conversations from any compatible mobile device, such as a smart phone. If a user misses an IM conversation, a notification can be forwarded to the email inbox. The ability to integrate separate communication silos empowers the mobile workforce to quickly accomplish goals and meet deadlines.

Telephony Considerations: VoIP versus TDM

VoIP and TDM technologies present the same core business functionality, but each platform offers different sets of benefits to the enterprise. VoIP is a flexible technology that is scalable and has low operating costs. TDM is a proven technology that offers stability and superior line quality. Below is a quick breakdown of considerations for utilizing each technology.

Switch to a VoIP telephony platform if:

- ❖ New PBX equipment purchases must be made at a site.
- ❖ The enterprise network is stable and reliable while running at a low average utilization.
- ❖ The IP connection to the PBX is stable and reliable while running at a low average utilization.
- ❖ IP connectivity provides failover and dynamic routing.
- ❖ IP equipment is redundant and has power failure options (UPS, generator, etc).
- ❖ You want to reduce hardware phone purchases and move towards softphones.
- ❖ Your organization is adapting to the needs of remote workers.
- ❖ You are moving towards centralized routing via SIP trunking.

Remain on a TDM telephony platform if:

- ❖ Your equipment does not need replacement or has not fully depreciated.
- ❖ Call quality needs to be near-perfect at all times
- ❖ TDM circuits already are being used to connect to a site, and no IP option is available.
- ❖ Your call feature needs are basic (inbound/outbound dialing, hold, transfers, etc).
- ❖ Your legacy PBX maintenance is still cost effective.

The tables below provide an overview of the benefits and risks associated with VoIP and TDM systems, but it is important to understand that the selection of a platform is not an “either-or” decision. As TDM systems have evolved, they have released hybrid systems that allow the TDM infrastructure to be extended to support VoIP. Also, the release of quality gateway products allow firms to integrate both

their TDM and VoIP infrastructures to allow for phased migrations over time until the TDM infrastructure is fully depreciated.

VoIP Benefits	VoIP Risks
<ul style="list-style-type: none"> ❖ Flexibility – the ability to move end-points (phones, soft-phones, applications) is dependent on the IP routing of your internal network. Changes can be made on the fly, without intervention into the systems. ❖ Scalability – adding additional IP bandwidth costs less per port than adding additional ports on a traditional PBX. ❖ Operating Costs – VoIP has the potential to reuse much of the internal network infrastructure. Rather than having a phone switch and a network switch, a single device can provide that functionality. Additional cabling for phones is not necessary, the cabling runs for PC’s can be used for both. ❖ Additional Opportunity – VoIP opens both the enterprise and applications to an extremely large set of new capabilities. Unified Communications (messaging, chat, web conferencing) and voice integrated applications (CRM) are two areas with high potential after a VoIP implementation. 	<ul style="list-style-type: none"> ❖ Power outages could affect voice capabilities (switch outages, power to phones, etc) ❖ Voice quality is not as strong as TDM and has the potential for variance based on WAN performance ❖ Network issues could affect voice traffic from getting to it’s intended destination.

Table 1 - VoIP Review

TDM Benefits	TDM Risks
<ul style="list-style-type: none"> ❖ Voice Quality – TDM voice quality is unsurpassed in VoIP. VoIP uses technology to compress the audio from a call which can lead to issues. ❖ Stability - TDM is tried and true when it comes to stability. Phones stay up during power outages, assuming the PBX has a backup power supply. 	<ul style="list-style-type: none"> ❖ TDM requires a separate set of circuits to transport voice. Data lines for IP traffic will need to be run in addition to the TDM lines. ❖ A line outage is hard to recover from. There is no easy way to re-route traffic around the outage.

Table 2 - TDM Review

Custom Integration into Line-of-Business Applications

As enterprises continue to adapt and implement core UC technologies (IM, conferencing, VoIP), technology leaders should begin to consider a new realm of possibilities. With UC platforms such as Microsoft Office Communications Server 2007 R2, enterprises can begin to integrate communication workflows (IM and/or voice) into their fundamental business applications. This process is known as communication-enabled business processes (CEBPs).

Forrester Research Inc. defines CEBPs as: “Business processes and applications tightly integrated with UC technologies to enable concurrent or consecutive communications among customers, suppliers, and employees within the context of business transactions.”

By leveraging CEBPs, enterprises can closely integrate their UC investments with their primary business applications, including customer relationship management (CRM) systems, enterprise resource planning (ERP) systems, and custom developed applications to automate procedures and take action on key business indicators. For example, a customer places an order online for a big screen television. The reseller recently deployed Microsoft Office Communications Server 2007 R2 and has developed custom workflows to notify customers of changes in the shipment process. The customer has indicated that he would like to receive both voice and IM notifications. The custom-developed workflow(s) will execute and the customer will receive either a voice call and/or instant message with updated shipment information.

As firms invest in UC and begin to think outside of the box, business leaders should expect an increase in customer satisfaction, reduction in service time, and improvement in quality of decision making.

Managing Electronic Communications, While Enhancing Collaboration

Typically, enterprises pay less attention to compliance and preservation of electronic communications when, in fact, these should be among the most important considerations.

Most organizations have processes in place to retain email communication. Many still view instant messaging as an unsanctioned form of enterprise communication. Although compliance requirements may differ among regulatory bodies, over the past several years regulators have strengthened e-discovery requirements.

Here is an example of the change in regulation. Prior to February 5, 2009, the U.S. Commodity Futures Trading Commission (CFTC) Rule 1.35, which requires retention of order-related records, did not explicitly state that email or instant message communications were to be retained for compliance purposes. As a result of different interpretations of the rule, especially related to NYMEX rules, the Division of Market Oversight of the CFTC re-examined its view of Rule 1.35. The CFTC released an advisory, explicitly clarifying the requirement to preserve any electronic communication used in trading, including email and instant messages. Consistent with that clarification, Rule 1.31 now requires a retention period of five years, including two years of readily available access.

Increasingly, firms are focusing not on complying with regulations, but on deploying compliant, secure instant messaging tools that allow them to benefit from increased collaboration. Certainly we have worked with firms that have taken action by installing compliance and retention appliances to store IM data. Recently, we have noticed an increased interest in UC platforms, such as Microsoft Office Communications Server (OCS) 2007 R2. By implementing a UC platform, firms can introduce on-premise enterprise instant messaging (IM), web/audio/video conferencing, persistent group chat, and VoIP capabilities, while providing stricter control and quicker responses and remaining competitive within the industry.

Table 3, below, provides an overview of regulators and regulation types by industry and the impact of those requirements on the industry.

Table 3 - "Regulatory Requirements." [Facetime.com](http://www.facetime.com). 1 AUG. 2009
 <<http://www.facetime.com/solutions/regulatoryrequirements.aspx>>

Industry	Regulator/Regulation	Impact
All	US Federal Courts - Federal Civil Rules of Procedure #26-35	Effective December 1, 2006, this legislation requires organizations to keep track of these and other electronic records and be able to produce "electronically stored information" as part of the e-discovery process.
Financial Services (Investment Banks, Broker/Dealers, Mutual Funds, Investment Advisors)	Sarbanes Oxley (SOX) NASD 2210, 3010/3110 SEC 17-a/34 SEC 204-2 NYSE 342, 372, 440	IM defined as electronic communication "book and record," required to be logged, audited and archived.
Banking	Sarbanes Oxley (SOX) NASD 2210, 3010/3110 SB1386 in CA Gramm Leach Bliley Act (GLB) USA Patriot Act (USPA) FDIC	IM defined as electronic communication "book and record". GLB requires security of customer information. USPA requires record retention of suspicious communications associated with money transfer and laundering. FDIC provides guidance on security and management of IM. Learn more about commercial banking regulations.
Life Sciences/ Healthcare	Health Insurance Portability and Accountability Act (HIPAA)	HIPAA requires retention of patient records during clinical trials by med/pharma companies and privacy of patient records, including patient information shared over IM.
Energy	Federal Energy Regulatory Commission (FERC)	IM defined as electronic communication "book and record". FERC requires the logging and auditing of transaction-related information.

Recommendations

The communication landscape is continuously evolving. Technologies that used to be siloed are becoming integrated to maximize collaboration and streamline productivity among colleagues, customers, and suppliers.

With a keen focus on the Millennial generation and the soon to be Internet generation, organizations need to evaluate their corporate culture and understand how UC technologies can improve corporate communications while attracting and enticing a new generational workforce. More importantly, UC technologies can improve the efficiency of expensive knowledge workers and can streamline business communications and operations.

UC implementations require special considerations related to organizational readiness and the technology platforms being integrated. Figure 3 provides a framework for evaluating and implementing a successful UC solution that helps ensure successful deployment.

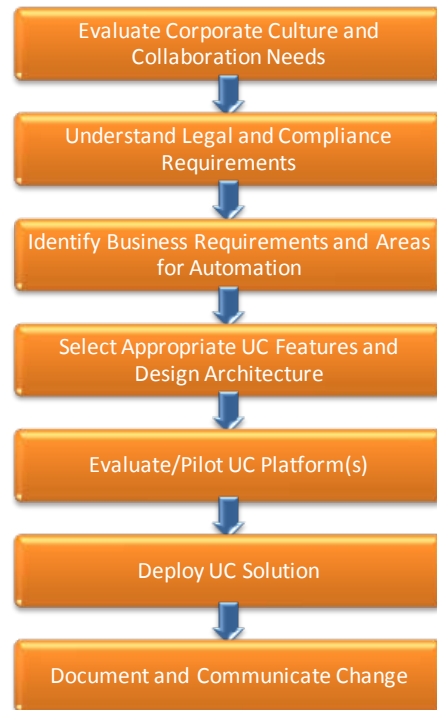


Figure 3 - Unified Communications Recommendations

About the Authors

Keenan Crockett is a senior consultant in West Monroe Partners' Infrastructure practice. He specializes in Unified Communications solutions. Keenan has managed and served in a number of projects including the design and implementation of Office Communications Server 2007 R2, Microsoft Exchange 2007 Unified Messaging, Active Directory Certificate Services, and Cisco IPT.

Robington Woods is a consultant in West Monroe Partners' Infrastructure practice. He specializes in highly available network design and Unified Communications solutions. Robington has served in a number of projects such as the planning and implementation of VMware ESX virtualization, highly available networks, and Office Communications Server 2007 R2.

Nathan Ulery is integral in West Monroe Partners' executive management team, leading the firm's Technology Infrastructure Solutions practice. Nate is responsible for and involved in a wide range of consulting assignments covering business and IT strategies and serves as an infrastructure architect for many West Monroe Partners clients.

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