

# Migrating to Unified Communications Best Practices



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## THE PATH TO UNIFIED COMMUNICATIONS

Unified Communications (UC) is really the convergence of six communication products areas. Some of the six areas have existed for years and others are recent entries. UC is really part of the evolution of IT and telecom into one common set of features and functions, not a brand new, just emerging, concept. The six areas are:

- The evolution of the legacy PBX into the IP Telephony system
- The development of the softphone as part of the IP-based PBX offerings
- Integrating voice mail and e-mail
- Changing the e-mail function to a desktop management tool
- Multiple forms of conferencing such as web, voice and video
- Instant messaging services and capabilities

There are multiple approaches to UC that should immediately signal the institution that the vendor community has a number of different UC solutions. This makes it difficult to compare products. It also means that the vendors do not compare easily nor do all the solutions have equal capabilities.

When a vendor promotes an institution as a successful implementation of UC, confusion will occur. It will be hard to determine how much UC is actually deployed in this vendor-selected successful implementation. It could be that only Unified Messaging is present and not a full complement of UC functions.

There is no single method for enabling an institution to implement the UC migration. Think of UC as a menu, not a single entity. The institution selects those functions and features it perceives as valuable. Staff/employee productivity increases will occur. Whether or not the productivity increases offset the UC investment will vary by enterprise and departmentally within the enterprise. UC benefits will not be consistent across all the enterprise's business units, CXOs and staff.

## WHO BENEFITS MOST FROM UNIFIED COMMUNICATIONS?

The real value is in user productivity enhancement, not saving IT dollars, but improving efficiency in all the institution's departments. The most obvious beneficiary is the person that already uses communications as part of their daily routine. The less a person communicates, the less the value of UC. One conclusion is that UC, when populated throughout the enterprise, will have varying degrees of acceptance and success.

So let's look at those who would benefit least:

**Desk jockeys** – These are individuals that generally work alone. They may use data communications frequently but do not have frequent voice contact with other individuals. A data entry person is an example.

**Stationary users** – These individuals stay in one location and do not require any form of mobile communications.

**Low level staff** – The position of the individual user in the enterprise hierarchy may also influence the potential benefit. The lower the ranking, the less the investment in that individual and the less likely that UC will change their productivity.

The most likely beneficiaries may not be the largest staff population but will see the benefits quickly.

**Executives/Administrators** – These individuals are communicating by voice and text regularly. Enhancing their communications channels with more options will increase their ability to gather information, make decisions and direct members of their departments. The difficulty will be training these executives, who many times do not want to invest the time in learning new procedures, even if they are beneficial.

**Sales and marketing** – Much of sales and marketing is communications, mostly with customers. Reducing telephone tag, knowing the status/availability of those to be called and controlling incoming communications will all be beneficial.

**Team leaders and members** – It is becoming common that teams and task groups are not collocated, but distributed. The team leader must have rapid communications with the team members and have continuous presence information.

**Decentralized call center/help desk staff** – It is obvious that centralized call center/help desk staff needs communications to perform their work. More call centers/help desks are being decentralized with work at home staff. UC features will allow the call center supervisors to effectively manage the call center staff as well direct the incoming customer calls.

**Mobile worker** – Anyone who is not resident where they can be easily accessed by walking to their location can be more effective if they can access communications in multiple forms and operate as if they are located in their office.

**Faculty** – Instructors need temporary communications to remote sites to deliver their lectures. The conferencing capabilities of UC are mandatory. Each lecture session is like a short term team meeting.

**IT staff** – Many IT staff members can not sit at a desk all day and perform their work. IT staff moves around the IT facilities and also meets with internal clients locally and remotely. During these meetings, it is very likely the IT staff is not near their desktop or phone.

The actual productivity or time savings will depend of the individual's job function, how well they embrace the UC tools and how often they can use the tools. Each of the UC tools can save time. The real issue is can the saved time can be meaningfully applied to other work.

## THE VALUE OF UNIFIED COMMUNICATIONS

How does the organization evaluate the move to Unified Communications? Since UC is sold on the promise of human productivity improvements, who within the organization, or what parts of an organization, will benefit? UC has its greatest value when both ends of the communications functions have access to the same features. One endpoint will limit the productivity enhancements if it does not have access to UC services.

Questions that should be considered and answered when contemplating the migration to UC follow. Not all of these questions and considerations will apply to every enterprise, but the questions should be raised even if only to dismiss them as non-applicable to the specific case. The process, from creating a service to its delivery, will involve many people, information and internal and external organizations, all of which will benefit from better communications. ***Collaboration, mobility and Presence mechanisms will be important tools. UC, if implemented in the IT and telecom areas first, can be very useful in the remaining UC deployment.*** There are six phases that must be explored and analyzed to determine the value of UC.

**Internal Support:** The internal operations of an enterprise have to be effective before that enterprise should offer any UC service. UC can make the executives, managers and staff more efficient and benefit internal organizations such as sales, marketing, finance, human resources, facilities and IT. Collaboration, mobility and Presence as used in UC will improve efficiency, reduce the staff's stress levels and improve productivity.

- Can UC mobility provide seamless information for decision support?
- Will user access be improved with UC?
- There will always be business issues to resolve. Will UC reduce the time needed to resolve these issues/problems?
- Executives, managers and senior staff must collaborate on policy development and educational direction. Will UC improve these processes?

**UC Service Development:** Developers and deployers of UC services will always be working with a time constraint. Competition from other services such as Google, Yahoo, Twitter and cellular services may drive the schedule for the development.

- Will UC reduce the time to respond to enterprise requirements? Collaboration that is fast, efficient and easy to arrange will be the goal whether working with internal staff, consultants or potential vendors, thereby accelerating the delivery requirements.
- Does the UC function provide an effective method for locating and accessing the expertise required? Can you easily locate internal expertise rapidly without dealing with HR?
- Will UC enhance the ability of people and resources in disparate locations to work as a real-time team?

**Marketing the UC Service:** The IT/telecom staff needs to prepare a number of tools (promotional materials, brochures, press releases, meetings, etc.) to bring the UC service to the attention of the users.

- Does UC benefit the exchange of information, schedules and tools with external resources? Contact management and the associated linkages are important during the service introduction as well as in the continuing marketing effort that occurs after the release of the UC service.
- Will UC help ensure that schedules will be fulfilled? Collaboration and mobility will be the key values of UC during the marketing effort.

**Delivering the Service:** This phase may include external component delivery, service providers and other organizations that need to be coordinated, especially if just-in-time scheduling is the goal. Accurate communications, delivered in a timely manner in whatever form is most productive, is the key value of UC.

- Will the collaboration features of UC benefit the production process design?
- Will UC reduce the time for problem/issue resolution?
- Will UC be useful for identifying the resource needed to resolve a problem/issue?
- Once the production process has begun, how will UC help in the management of the process?
- Will UC enhance the ability of people and resources in disparate locations to work as a real-time team?

**UC Service Deployment:** The delivery of a service is a logistics issue. Delivery/cutover issues will be similar to the issues encountered in the production environment.

- Will the collaboration features of UC benefit the delivery process design?
- Will UC reduce the time for delivery/cutover problem/issue resolution?
- Will UC be useful for identifying the resources needed to resolve a problem/issue?
- Once the delivery process has been implemented, how will UC help in the management of the process?
- Will UC enhance the ability of people and resources in disparate locations to work as a real-time team?

**Customer Service:** Keeping the customer satisfied and happy should be the goal of any organization. This is not always the case, however, and poor customer service will always come back to haunt a negligent organization.

- Will UC provide rapid access to the correct organization resource to resolve an issue or problem?
- Can UC reduce the customer service time and thereby reduce the customer service staff size?
- Will UC provide alternative communications methods for a wide variety of customers to access?
- Will UC tools be able to give the service managers better visibility into their service operation?

Implementing Unified Communications may not address all questions and considerations. Demonstrating the value of UC will be less a financial issue and more a productivity improvement that eventually translates into financial benefits.

## UC INFLUENCE ON IP TELEPHONY DEPLOYMENT

Moving to a Unified Communications environment is not a one-step operation. There are five potential stages in the process and they are not all about UC. A sound IT staff and network foundation are preliminary to UC implementation success. The IP network becomes the cornerstone for Unified Messaging (UM) and UC. Without VoIP and the connecting IP network, the integration of multiple server platforms, each with a different UC function, is very difficult. As shown in the following timeline, there is a recommended sequence of tasks leading to UC.



1. Converge the IT Staff	2. Upgrade IP Network	3. VoIP/IPT Implementation	4. UM & Presence Implementation	5. Full UC Implementation
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### Converged IT Staff

Many organizations are planning to, or already have, moved telecom function to the IT department to be managed by the CIO. The problem is that most CIOs and IT departments don't know much about voice communications. For the converged IT department to be successful, both the telecom and IT staffs need to be trained in each others' technologies. This cross training should be vendor independent and should be scheduled BEFORE any effort is considered to move to VoIP/IPT, UM and UC. The cross training must include all of the staff since VoIP/IPT, UM and UC will be server-, network- and desktop-based functions.

- The telecom staff needs to learn about servers and IP networks, not enough for certification, but enough to appreciate the complexities and nuances of IT systems and networks.
- The server staff will be working with new servers and, probably, a new operating system (Linux, UNIS, VxWorks). The server reliability and availability, with appropriate backup configurations, will be more important than the systems that IT manages before moving to VoIP/IPT, UM and UC. VoIP is not just another application for the servers.
- The desktop staff will be working with IP hard phones (a new device for both IT and telecom staff). Softphones will demand high priority voice applications and reliable operation when compared to data applications.
- The network engineers will have to deliver a high performance network with QoS and improved management systems to support VoIP/IPT. VoIP/IPT training will provide the engineers with the new demands that VoIP/IPT and eventually UC will place on the IP network.
- VoIP/IPT, UM and UC will require new security measures and will have new security vulnerabilities. The security staff will be working with an ever-increasing number of vulnerabilities that have no real equivalent in data security.
- The data center manager will have to learn about the operation of real-time applications like VoIP/IPT.

### Upgrading the IP Network

In general, IP networks are not prepared to deliver the performance required to carry VoIP traffic. The LANs should be divided into VLANs, separating voice and data traffic. Power over Ethernet (PoE) will most likely be used to power the IP phones. QoS in the LAN switches should be added. Backup power and UPS will be required in the LAN closets to match the uptime of the legacy PBX that is being replaced with VoIP/IPT.

Most WANs do not have the bandwidth, QoS, management systems and performance to satisfy the performance requirements for VoIP. The LANs and WANs need to be evaluated for their performance and reliability, and then the necessary upgrades MUST be implemented before VoIP is turned on. The failure of VoIP is most often caused by inadequate network preparation.

### **VoIP Implementation**

VoIP and IP Telephony (IPT) are more than PBX replacement technology. VoIP and IPT are server-based implementations similar to the data implementations already in existence in IT. They rely on IP networks and are supporting signaling protocols such as the Session Initiation Protocol (SIP). The connection to, and operation with, other servers such as Microsoft's OCS and IBM's SameTime, provide a platform for the delivery of forms of communications other than voice and the integrated user management of these functions and features. VoIP/IPT is the centerpiece that UC is constructed around. Although it is technically possible to move to UM and UC without first implementing VoIP/IPT, the vendor community is not commonly offering this approach.

### **Unified Messaging (UM) and Presence**

VoIP/IPT already supports the voice mail function. Adding e-mail and fax-mail means connecting the VoIP/IPT system to these other servers to deliver UM. Many vendors include UM in their VoIP/IPT offerings so SIP is not necessary for this integration. However, adding SIP connections allows the enterprise to mix vendors for the most attractive UM solution.

Presence conveys information of the status, ability and willingness of a potential communication partner. A user's device provides presence information (presence state) via a network connection which is stored in his personal availability record. Presence information can be made available for distribution to other users to convey the user's availability and form of communications. Presence is considered the most important new function delivered by UC.

### **Unified Communications**

There are three approaches for delivering UC:

1. Combining most of the UC functionality into one solution with a single vendor's broad product offering.
2. Taking a portfolio of many communications functions and combining them through a set of shared services using multiple vendors.
3. Delivering a middleware framework approach that can be used to connect many unrelated and probably multi-vendor UC products together.

Each of these approaches assumes that VoIP/IPT has been implemented as a prerequisite technology. The features and functions that are part of UC may vary among the vendors but the fundamental requirement of voice transmission operating over an IP network is consistent. Therefore, the organization must prepare and implement VoIP/IPT in their migration plan for moving to UC.

## **MIGRATING TO UNIFIED COMMUNICATIONS**

Unified Communications (UC) is new: new to the vendors, new to the reseller/VARS and new to the institution. Although there are some recent success stories, there is not a lot of experience deploying UC. The press coverage so far is positive but, as with any implementation, there will be mistakes and gotchas.

Many of the problems in implementing VoIP/IP Telephony (IPT) are now evident and can be avoided by following the best practices that have been developed. Moving to VoIP/IPT is really the first step in integrating IT and telecom. Many of the best practices discovered for VoIP/IPT implementation will also be valuable for UC migration.

The next section provides a list of the UC best practices, some of which come from the VoIP/IPT deployment experiences. As more UC implementations occur, this list will continue to grow with the best practices unique to UC implementation.

Getting started on the road to UC begins with the review of the telecom and data infrastructures, mobile devices used and application servers supporting Microsoft Exchange and Office Communications or IBM's SameTime. UC solutions come in two flavors, network based and application based. A decision must therefore be made before the UC commitment is finalized.

Next, the use of hard IP phones and softphones must be determined. Either or both may be applicable. The best deployment is a phased introduction of the functions and features, rather than everything at once. Select one department to use first as a test bed and who can help sell UC to the other departments. The IT department is usually the ideal candidate.

## UC MIGRATION BEST PRACTICES

Best Practices is a term used to define recommendations that increase the likelihood of success for a project and/or operation. It is a management concept comprising a list of considerations. It outlines more effective methods, processes or activities when attempting to deliver a particular outcome. The idea is that with the proper procedures, validations and testing, a project can be successfully completed with fewer problems and unanticipated complications.

### Organization

- Converge the IT and telecom staffs before embarking on a UC deployment.
- Cross train the IT and telecom staffs in each others' technology and language.
- Obtain an organization buy-in from all departments that will be affected by the UC deployment. The delivery of UC is for these departments, not really for IT.
- Have the departments and IT agree on the timing and schedule of the UC deployment.
- Select one department as the first user organization.

### Infrastructure

- Perform network capacity and performance evaluations.
- Upgrade the data network for voice and video performance.
- Verify that the network upgrades deliver the performance expected.
- Upgrade IT and telecom management systems so that they can properly manage the integrated UC environment.

### Technology

- Learn about the Session Initiation Protocol (SIP) because this is the common protocol used for interfacing to the servers providing UC features.
- Attend vendor-independent UC migration training.
- Evaluate the security and management issues anticipated for UC.
- Determine if the UC offering will scale to the size of the enterprise.
- Verify that the UC offering will fit into the IT plans for migrating to Service Oriented Architecture (SOA).
- Keep the number of implementation vendors small.
- Standards are important, but understand that the standards will evolve over time and the UC solutions/products should keep up with the standards changes.
- As UC software components are changed by delivering new versions, be cautious; new software versions may impair interoperability.
- Once the vendor(s) are selected, send key IT staff members to the vendor-specific training.

### Vendor/Reseller/VAR

- Verify that the reseller/systems integrator/VAR is certified in UC by the product vendor(s).
- Ensure that the certified reseller/systems integrator/VAR staff will be working on your installation.
- Contact and visit sites where this reseller/systems integrator/VAR has implemented UC.

### Integration Phasing

- Deploy VoIP/IP Telephony before moving to UC.



- Start with a pilot department, probably IT, for each function before deploying to the entire institution.
- Consider implementing UM, and possibly Presence, as an intermediate step to full UC deployment.
- Start with one set of features and one server at a time. Ensure that the first function is stable before moving to the next function.
- Start with the wired network first.
- Deploy the wireless functions second.
- Do not do upgrades for the sake of upgrades.
- Provide adequate training for the users.
- Market the capabilities of UC to the department's users. Do not assume that users will automatically imagine how or want to use the UC functions.

This list of best practices and recommendations will continue to grow with the deployment of UC. Even if the IT staff does not need to follow all of the best practices suggested, it can be used as a checklist to consciously review many of the possible barriers to successful UC implementation.

## About the Author

[Gary Audin](#) has more than 40 years of computer, communications and security experience. He has planned, designed, specified, implemented and operated data, LAN and telephone networks. These have included local area, national and international networks as well as VoIP/IPT, UC and IP convergent networks in the U.S., Canada, Europe, Australia, Caribbean and Asia. He has advised domestic and international venture capital and investment bankers in communications, VoIP, and microprocessor technologies.

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