



Understanding the Total Cost of Unified Communications

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Introduction

For most companies, building the business case for unified communications (UC) has been a difficult task. The value proposition for UC is multifaceted, and ROI is difficult to measure. Additionally, numerous solution providers have UC portfolios that widely vary, making it very difficult to do an apples-to-apples comparison for evaluation purposes.

This report will define unified communications, help organizations understand all of the components that need consideration when making the business case for UC, and compare the two leading solution providers — Cisco and Microsoft — to help build total cost of ownership (TCO) scenarios. Lastly, this report will give actionable recommendations to UC evaluators that can guide them through the decision-making process.

1: Unified Communications Defined

To date, there is no de facto definition of UC. Many vendors claim to be UC solution providers, but most only offer part of the solution. “Unified communications” is a term that describes the coming together (unification) of all forms of collaboration and multimedia communications that can be controlled by an end user for both social and business purposes. This includes the integration of fixed and mobile voice, IP telephony, unified messaging (UM), e-mail, chat, video, Web and audio conferencing, call center applications, presence and many other communication tools. Recently, social networking tools have become part of the UC ecosystem, demonstrating how UC is an ever-expanding category as the communications, network and application worlds continue to merge.

One of the strongest value propositions of UC is to minimize or remove human latency built into business processes due to inefficient communications. By being able to communications-enable applications, users can streamline or even redefine the process. This will ultimately allow workers to collaborate with any user, anywhere, over any device, speeding up decisions and solving processes significantly faster.

UC is not a single product but a broad set of capabilities across multiple networks and multiple devices. The difficulty in defining UC is that UC should be thought of as a platform for the integration of communications and collaboration tools into business applications and processes.

This taxonomy is built on the concept that there are two foundational elements to UC, and a number of traditional and emerging components that are deployed on top of the foundation.

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Influence and insight through social media

To be a UC solution provider, the vendor must provide the two foundational elements and three or more of the other UC applications.

The foundational components are:

- **Presence:** This is the ability to understand the state and availability of another user. Because consumer instant messaging (IM) is so popular today, presence is typically intertwined with chat. But presence can be associated not only with people, but also with devices or objects.
- **IP telephony:** Eventually voice services will be embedded into virtually every corporate application, making IP telephony a critical technology for UC. Additionally, many buyers today will deploy IP telephony first and then use the cost savings from IP telephony to fund the rest of the UC implementation.
- **Network:** Most UC services are highly dependent on a rock-solid, secure network to build the services on top of.

The traditional components of UC are:

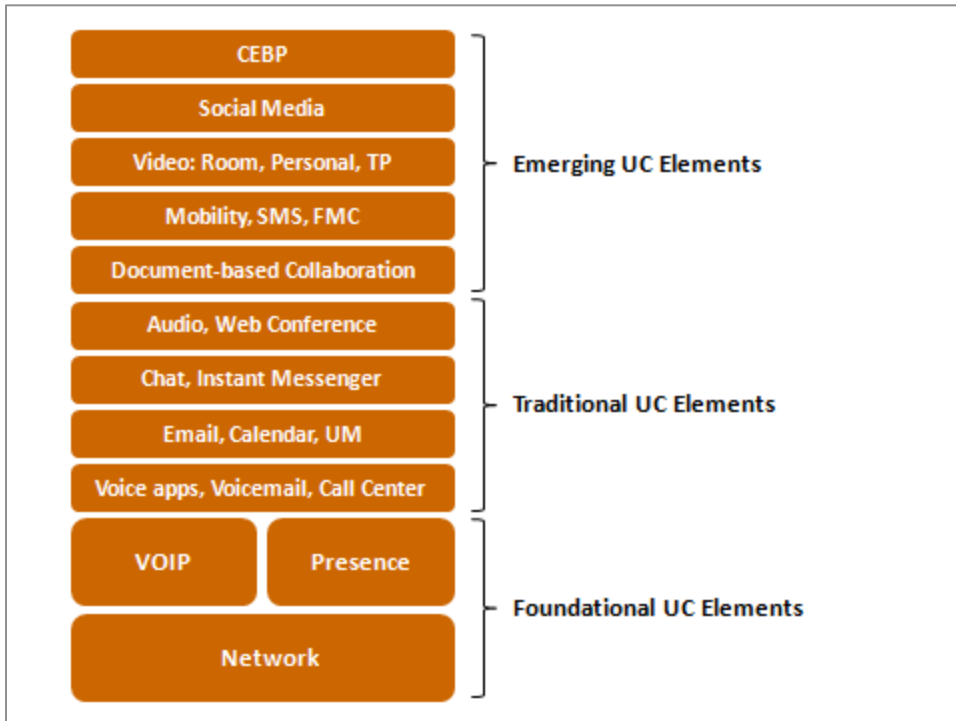
- **Voicemail:** This has been a standard feature of telephony systems for years. It is widely deployed through companies of all sizes and has reached near ubiquity. Voicemail innovation revolves around the ability to provide a single voicemail box that is accessible from multiple devices.
- **E-mail:** E-mail is another well-adopted traditional UC application. E-mail is a core UC application today, although it's likely users will begin to shift communications away from e-mail to tools such as community forums and chat.
- **Unified messaging:** UM is the convergence of e-mail, voicemail, faxes and other communications tools. UM has been around for many years and should be a basic component of UC.
- **Web conferencing:** The use of Web conferencing has skyrocketed over the past few years. The tool is best leveraged to share detailed information with a number of people in different geographic locations.
- **Audio conferencing:** Many organizations use an audio conferencing service from a network service provider. However, companies that deploy an audio conferencing solution integrated into the UC suite see payback in less than a year.

The emerging components of UC are:

- **Videoconferencing:** This technology has been thought of as a nice-to-have and not a need-to-have for years now. However, reductions in travel, an emphasis on finding new ways of working combined with improvements in both quality of experience and ease of use has created new demand for videoconferencing.
- **Document-based collaboration:** This is rapidly becoming the integration point for collaboration. This feature allows workers to collaborate and communicate with other workers without having to leave the application. Workers can manage and share documents efficiently with this tool.
- **Mobility:** Mobile enablement is rapidly driving greater UC adoption. A robust mobile client can be used to bring feature parity, whether a user is in or out of the office. Mobile workers now make up 42 percent of the workforce, making mobile UC just as important as traditional UC. Enabling mobile UC is highly dependent on a robust mobile client.
- **Social media:** This has typically been a tool used for consumers to connect with one another. However, as rapid consumerization of the enterprise continues, organizations are now utilizing social media as part of their collaborative strategy, and should look to integrate it into their larger corporate UC suite of products.
- **Communications-enabled business process (CEBP):** Over time, more and more application developers will integrate UC functionality into business applications, allowing organizations to redefine business process around the communications tool. This will give rise to a number of communications-enabled business processes.

One last critical component of a UC solution is a rock-solid network infrastructure. The network will provide the necessary security and resiliency features to ensure that the UC applications are available and performing at a high level all of the time. A poor network deployment will negate many of the benefits companies will realize from UC.

Exhibit A: UC Defined



Organizations currently in the process of deploying UC should ensure the vendor offers both foundational technologies and the required other technologies that sit on top of the foundation.

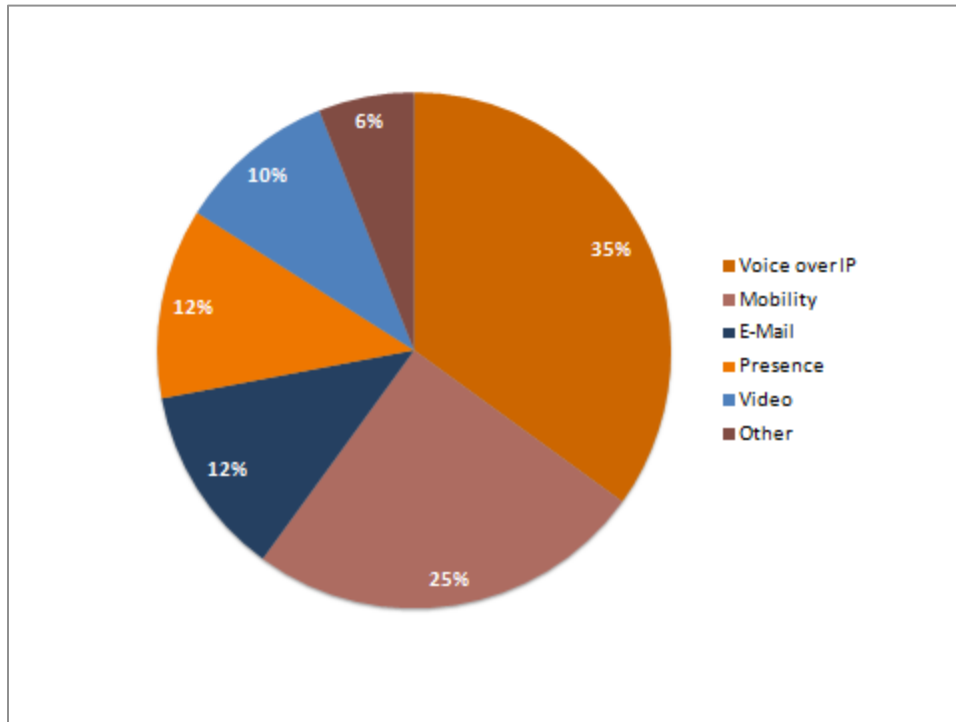
2: Understanding the Value of Voice within UC

The cost savings around switching from traditional voice to VoIP can be large enough to fund the rest of the UC deployment. In fact, done correctly, this shift

can have the biggest TCO benefits of all UC applications. This is one reason that in a recent UC deployment survey, 35 percent of respondents cited VoIP as the most important UC application.

Technically, VoIP does not need to be deployed to make a deployment a UC deployment; but without VoIP, many of the cost savings and mobility benefits go away.

If deployed correctly, a successful VoIP implementation can fund the majority of the UC deployment.

Exhibit B: VoIP Is the Most Critical UC Application**“Which application is the most critical to the success of your UC deployment?” (n=1098)**

To build an accurate TCO model of VoIP, it's important that evaluators understand all of the components that make up the cost of delivering corporate voice services. Too often companies focus on hardware costs and long-distance savings, and while that alone can provide a TCO benefit, it's not the only way VoIP can save organizations money. The critical factors in delivering voice to an organization are:

- **Capital expenditures:** This relates to the all of the new hardware and software that needs to be purchased to upgrade the solution. There is a certain cost to shifting to any new technology, and VoIP is no different.
- **Long-distance savings:** By bringing voice onto the data network, the deploying organization can leverage its corporate wide area network (WAN) for intracompany calling. Depending on the company's calling patterns, this can be a modest savings, or can dwarf all other factors.
- **Trunking costs:** This is one of the largest areas of spend for distributed organizations. When moving to an IP-based system, call control can be centralized, allowing for consolidation of trunks.
- **Maintenance costs:** Maintaining a VoIP system is significantly different than a traditional phone system. The old integrated hardware systems made up of banks of line cards are a thing of the past. These have been replaced with software platforms that allow for easier remote maintenance and faster network upgrades.
- **Staffing costs:** Consolidating from two networks to one and centralizing call control means less staff.
- **Moves, adds, and changes (MACs):** This is another area where the cost savings will vary significantly based on the number of MACs an organization makes.
- **Improvements in processes due to reduction of human latency:** Many processes are bogged down with high amounts of human latency due to inefficient communication tools. Unifying communications tools can reduce or remove the gaps in the process.
- **Other factors.** There are a number of other areas of cost that can be reduced by moving to VoIP such as mobile phone charges, expense charges, etc.

The model below (see Exhibit C) is data from an actual customer deployment. The initial capital costs are higher since an investment is needed to move to VoIP, but the five-year benefit is significantly lower.

Exhibit C: Five-Year TCO for VoIP (Millions of USD)

VoIP Solution	
Capital expenses	+56
Long distance	-96
Trunking	-88
Maintenance	-35
Personnel	-32
MACs	-5
Mobility/T&E	-3
TCO of traditional solution	\$687
TCO of VoIP	\$483
Net savings over five years	\$204

Source: ZK Research, 2011

The net result for this organization deploying VoIP is a savings of \$204 million, or approximately 30 percent, compared to traditional voice, over a five-year period. Again, this number will vary widely by organization but almost every enterprise will realize a significant savings.

Section 3: Breaking Down the TCO of VoIP

Once an organization has made the decision to migrate to VoIP, the choice of vendor becomes crucial. This section is a TCO comparison of the two solution providers with the most mindshare in the industry today — Cisco and Microsoft.

The first step in understanding TCO a comparison is to have a good understanding of all the components that can be used in an apples-to-apples comparison. For UC those are:

- **Software licenses:** This includes all software licenses expenses such as the client software, server licenses, upgrade licenses, e-mail, database, etc.

- **Software maintenance:** This is the annual fee paid to the software vendor for maintenance of things such as patches, bug fixes and in-version upgrades.
- **Gateways:** Typically appliances purchased to connect to the public switched telephone network (PSTN), or to traditional TDM phone systems or voicemail systems.
- **Handsets:** These are purchases of new IP phones. These can vary from low-end phones in the sub \$100 range to phones that are almost \$1,000 list price.
- **Server costs:** Cost of the server hardware. Depending on the solution provider, server costs can be quite high based on the total number of unique physical servers required.
- **Analog ports:** Generally in every implementation there is some requirement to keep a handful of analog ports for faxing, lobby phones, etc.
- **Third-party software requirements:** These are costs to add functionality such as E911, contact center and video transcoding to the solution.
- **Mobility:** This includes both Wi-Fi and cellular connectivity.

Case Study 1: Global Manufacturing Organization with 120,000 Employees — Three-Year Analysis

Cost Item	Cisco (\$M)	Microsoft (\$M)	Rationale
Software licenses	\$13.88	\$ -	Company has an enterprise license agreement (ELA) and pays for Software Assurance. It won't need to pay additional client licenses for Lync Plus. It has 9,000 Cisco UC users, with respective licenses. Will need to acquire 111,000 user licenses to complete the 120,000 personnel.
Server OS licenses	\$ -	\$0.61	Will need to procure additional Windows Server OS licenses for the new Lync Servers, SQL and Exchange UM servers. No license required for Cisco UC.
Unified messaging server licenses	\$ -	\$0.13	ELA includes Lync Enterprise, needs to upgrade to Lync Plus for PSTN access. Cisco CUWL included voicemail and UM. No additional cost with Cisco CUWL.
Database licenses	\$ -	\$0.08	SQL database server license required for Lync voicemail storage/retrieval. Cisco UC does not require a database license.
Three-year software assurance/support*	\$7.99	\$16.44	Cisco Software Maintenance and service includes 24x7 live support. Microsoft SA is significantly bumped up by inclusion of voice in the pool of products. Microsoft SA is 25 percent of the discounted license price. SA-provided live support is limited to business hours (5x8).
Gateways (SBA) and analogue ports	\$0.66	\$5.64	Client already has Cisco ISR routers that provide branch survivability. In order to be voice-enabled, they only need analogue cards. With Lync, client needs to procure 1,300 survivable branch appliances gateway — one per site — from a third-party vendor (e.g., Mediant). This drives significant HW cost.
IP handsets	\$27.14	\$35.54	Microsoft Lync would require 134,000 new desk phones (desk, common areas, and conference rooms). Cisco would require 125,000 as client has already deployed 9,000.
Server HW	\$0.61	\$1.30	Estimated requirement for Lync is 153 servers (front-ends, conferencing, edge access, UM servers). Cisco UC would require 69 servers.
Analog endpoints and adapters	\$0.29	\$0.32	Required for fax, alarms, dial-up modems, and analog phones connected. Lync has a slightly higher count as the Cisco solution has already been deployed for 9,000 users.
Total	\$50.57	\$60.05	Microsoft Lync requires a third-party survivable branch appliance for survivability at each of 1,300 sites.
TCO difference	-16%		Already has 9,000 Cisco handsets. Would need to buy additional 125,000 handsets.

Source: ZK Research, 2011

In the second case study (see Case Study 2, below), the customer conducted a detailed cost analysis on all existing vendor software contracts and determined they weren't getting the full value from their total spend with Microsoft Office. Furthermore, their existing UC solution (Microsoft IM/presence

combined with Cisco call control) was a burden to maintain and didn't provide the required scalability.

Identifying areas of lesser value in MS Office enabled the customer to reduce their Microsoft spend. The Cisco UC solution provided greater

overall value, scalability as well as simplified maintenance.

Case Study 2: International Services Corporation with 8,000 Employees Using Softphones Instead of Handsets — Five-Year Analysis

Cost Item	Cisco (\$M)	Microsoft (\$M)	Rationale
Software licenses	\$2.20	\$0.02	The ELA allows client to add real-time media (voice/video/conferencing) at no initial cost. For Cisco, the full licenses (CUWL) are required.
Server OS licenses	\$ -	\$0.04	Need to procure additional Windows Server OS licenses for new Lync Servers, SQL and Exchange UM servers. No license required for Cisco UC.
Unified messaging server licenses	\$ -	\$0.12	Server license for Exchange UM in Lync case. Not needed for Cisco UC.
Database licenses	\$ -	\$0.05	SQL database server license. Required for Lync voicemail storage/retrieval. Cisco UC does not require a database license.
Three-year software assurance/support*	\$1.03	\$3.20	Cisco is based on a per-user basis. Microsoft is based on 25 percent of the discounted licenses. The ELA generally includes Lync Enterprise, but must upgrade to Lync Plus for PSTN access. Cisco CUWL included voicemail and UM. No increase over time in software maintenance cost with Cisco CUWL.
Gateways (SBA) and analogue ports	\$0.10	\$0.14	Client needs Cisco ISR routers with analogue cards. With Lync, client needs ISR gateways, and additionally the survivable branch appliance gateway.
IP handsets	\$0.71	\$0.81	Handsets only required for conference rooms and common areas. All others would use enterprise-class headsets. For Cisco UC, the Plantronics SupraPlus Wideband (\$71 at Buy.com) and the USB equivalent Blackwire 620 (\$79 at Buy.com).
Server HW	\$0.22	\$0.38	Estimated requirement for Lync is 45 servers (front-ends, conferencing, edge access, UM servers). Cisco UC would require 30 servers.
Analog endpoints and adapters	\$0.02	\$0.02	Required for fax, alarms, dial-up modems, and analog phones connected. The Lync solution has the same count and devices are of similar price.
Total	\$4.29	\$4.78	
TCO difference	-10%		

Source: ZK Research, 2011

Having a good understanding of all the TCO elements is crucial to making an informed decision. Many buyers commonly make the mistake of seeing the upfront license costs as the only factors for TCO. This is particularly confusing with Microsoft as the company markets “free” Lync licenses to Microsoft enterprise agreement customers. While this can be true, this shows all of the other factors do have significant costs. Even if a portion of the software is

nearly free, the cost to deploy other elements such as extra gateways, extra server licenses, and end-user devices is expensive.

Interestingly, as these examples show, even if a company has already purchased the Lync licenses as part of an enterprise agreement, it still is lower-cost to deploy Cisco than to fund the hidden costs of deploying Lync as an IP PBX (Lync is not “free”).

Section 4: The Future of Unified Communications in a Post-PC World

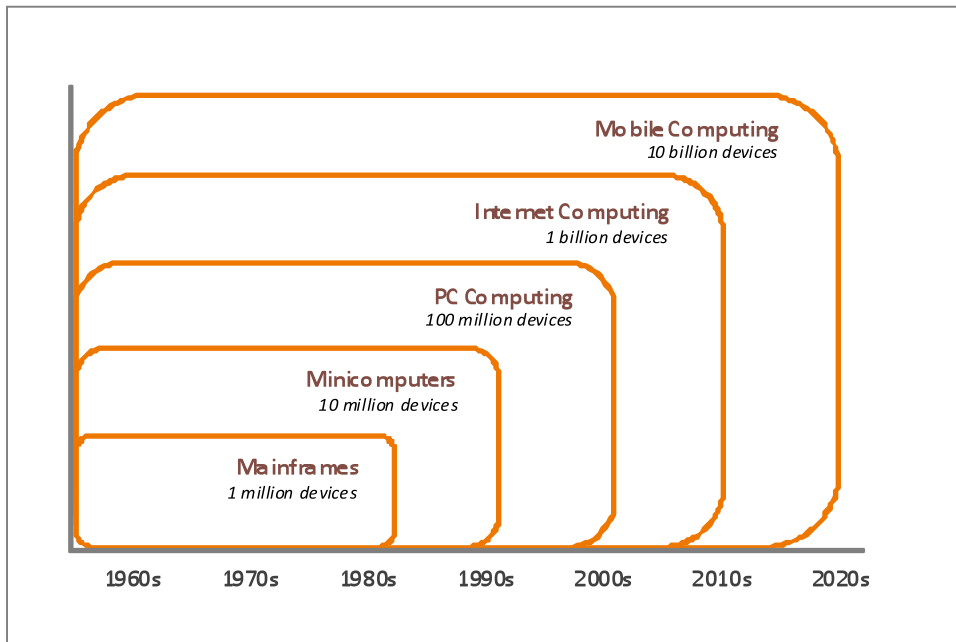
To date UC has been thought of as a voice-centric solution migrating to a desktop-based solution. However, the impact of mobility can't be overstated. Exhibit D shows that the number of mobile devices will be orders of magnitude greater than the number of desktop-based end points. The Holy Grail, of course, is for any worker to be able to use any type of device from any location, with a user experience similar to the office environment. The mobile UC revolution will be driven by the following trends:

- **Device evolution:** The capabilities and functionality in mobile devices continues to evolve at an unprecedented rate. Mobile phones now have robust Web browsers, HD cameras and can be used as a mainstream collaboration tool. In addition to the smart phone, tablets have exploded on the scene, with more than 100 types available to workers today.
- **Operating system fragmentation:** Standardizing on a desktop operating system and

application development platform used to be relatively straightforward for most organizations, since Microsoft had a near monopoly on the desktop. However, this isn't the case with mobile devices. Today most organizations have a combination of Apple, Android, Blackberry and other devices throughout the organization. Any UC solution must be supported on multiple mobile operating systems to be a viable solution.

- **Social media popularity:** Each generation of workers has driven a change in preferred communication tool. Two generations ago, workers relied heavily on the phone and voicemail. The current generation of worker uses e-mail and chat. The generation of worker making their way into the workplace today uses social networking tools and video as the preferred mode of communications. Both of these trends will continue to drive workers away from the desktop and toward mobile devices.
- **Cloud services:** Delivering a service from the cloud enables it to be more mobile. Cloud delivery is the most cost-effective, scalable method of untethering an application from an operating system, finally allowing workers true device freedom.

Exhibit D: The Mobile Computing Era



The world is rapidly moving toward cloud-based mobile services, and UC will follow that trend. It's imperative that any solution be able to adapt to any device and any operating system, and still be able to provide a robust user experience.

Section 5: Considerations for a UC Solution Provider

The UC market is very broad and there are many vendors that claim to be a solution provider. Understanding how to evaluate one solution vs. another is critically important. The following is a guide that can be used for organizations currently considering an investment in UC:

- **A strong history in voice:** VoIP is still considered the most important UC element. The ability to deliver a rock-solid, stable voice foundation will lead to a successful transition and the ability to self-fund the larger UC deployment.
- **A robust portfolio of UC applications:** Trying to piece together a UC solution from multiple vendors can be very difficult. Choose a solution provider that offers all of the items considered table stakes. This includes VoIP, presence, chat, audio/video/Web conferencing, UM, call center and remote-worker solutions.
- **Mobile centric solutions:** Pervasive connectivity is driving greater enterprise mobility. Any UC solution provider today needs to offer a best-in-class mobile offering. It's crucial that the solution provider offer mobile products designed with mobility in mind vs. desktop solutions that are retrofitted to be mobile.
- **Support for all leading end points:** In addition to being more mobile, pervasive connectivity is pushing a greater variety of end points into most companies. A UC solution provider needs to deliver a consistent, quality experience across not only IP phones and desktops but also laptops, tablets and smart phones regardless of operating system.
- **Strong video portfolio:** Video is becoming an increasingly important component of UC, which is why most solution providers have some element of video in their portfolio. However, not all video is equal. The UC provider should offer multiple forms of video conferencing, such as an immersive experience, traditional room-based systems, remote-worker solutions, desktop solutions, and other capabilities such as the ability to record and stream the video sessions.
- **User-centric license options:** Licensing options can make a huge difference in the cost of a solution. Ideally the solution provider would offer multiple license options to optimize the consumption model of the enterprise.

- **Desktop virtualization:** The shift to the cloud, combined with consumerization and wireless technology, will drive greater use of VDI. UC vendors need to start adapting their products to run in virtual desktop environments but still offer the same quality of experience as non-virtualized solutions.

Conclusions

Unified communications and VoIP has been a marketing marriage in the making for over a decade. However, there are several forces such as cloud computing, a greater emphasis on collaboration, pervasive wireless technologies and device evolution that will act as an inflection point for this industry, and will accelerate corporate adoption. As companies go through the process of evaluating vendors it's important to understand the following:

- **VoIP is the foundation of UC and can be used to drive the cost of communications down.** The additional cost savings can be used to fund the broader UC solution. To capitalize on this, evaluators need to look at all factors related to voice and not just long-distance savings.
- **Not all vendors are created equal.** Companies currently evaluating VoIP and UC solutions need to understand all of the components required to make up a solution. This includes handsets, license costs, software maintenance, servers, gateways and other factors. Some vendors will market a "free" or low-cost solution, but buyers need to look past that individual line item.
- **Mobility, device support and video need to be key decision points.** These are the areas with the most innovation today and where evaluators should spend the majority of time with vendor comparison.