White Paper

Top Ten Considerations when Evaluating Unified Communications Solutions

Introduction

Unified communications (UC) is an increasingly important investment for organizations looking to improve productivity and responsiveness while reducing their IT costs. The convergence of voice, video, and data communications around a shared IP-based infrastructure - allowing users to easily make a call, send a message, or join an audio or video conference - is bringing benefits to businesses of every size, industry, and geography.

But how should you select an enterprise-class UC solution? UC is a rapidly evolving area, making it harder to predict future requirements. A narrow decision based on a single application - say, instant messaging (IM) - may limit your choices later when it comes to supporting smartphones, tablets, video, or social networking. Likewise, a UC deployment that does not adequately consider the implications on IT infrastructure - such as security, directories, media handling, application hosting, networking, and so on - could become problematic as the solution evolves beyond its original scope.

The key is to build in sufficient **flexibility** to accommodate new developments as your needs evolve, while extending the value of your existing IT investments, establishing immediate value, and promoting user adoption. We have prepared this document to help you navigate this path, by suggesting ten areas that you should consider when evaluating an enterprise-class unified communications solution.

1. Commitment to Investment Protection

A primary requirement is that your existing investment in office software and supporting infrastructure be preserved, both now and as the UC solution expands over time. Here are five areas to consider:

- Office applications: Most companies have a significant investment in office software such as email, calendaring, and document sharing. Your UC solution should add complementary value to this software at both server and desktop levels. The Cisco® solution interoperates closely with Microsoft Exchange, Outlook, and SharePoint, and provides innovative features at both the user level (for example, with easy access to voice and video communication and enhanced presence) and administrator level (for example, with single call control and quality of service [QoS]). Additionally, Cisco does not market an email, calendaring, or document-management product, so has no conflicting agenda, and our products can also integrate with other office environments such as Google Apps if required.
- Desktop experience: Your investment in user productivity should not be disrupted. Your UC solution should fit in with your users' current desktop experiences and enable them to be more productive without requiring them to learn new behavior. The Cisco Unified Communications Solution provides value to users in an intuitive manner, such as:
  - Comprehensive presence: Users can see "always-on" contextual presence information from within their familiar email or calendar or the unified communications client, sourced from any Extensible Messaging and Presence Protocol (XMPP) or SIP for Instant Messaging and Presence Leveraging Extensions (SIP/SIMPLE)-based system, including IBM SameTime, Microsoft Lync, GoogleTalk, AIM, Yahoo!, Facebook, and others, to give a comprehensive view of availability across the network.

- Comprehensive connectivity: Users can also access high-quality voice, video, and conferencing capabilities from right-click menus or through the Microsoft Office ribbon, schedule a conference call that shows up in their native calendars, and communicate with mobile participants just as easily as their office-based colleagues.

- IT experience: The UC solution should also empower IT to offer higher service levels to the business without disrupting its current operations. Examples include:
  - A single call-control architecture for voice, video, and conferencing, which can substantially reduce operational overhead compared to maintaining separate call structures for each, while still accommodating time-division multiplexing (TDM) or Session Initiation Protocol (SIP)-based systems as needed.
  - The latest mobile devices such as smartphones and tablets can be supported alongside your existing desktop or soft phones to share intelligent capabilities such as Single Number Reach or Dial via Office.
  - Server and client service configuration can be offloaded to the network instead of perpetuating the tedious task of configuring individual static links manually.
- Identity system: Your UC solution should not disrupt the existing directory structure and single sign-on policies for each new service you roll out. The Cisco Unified Communications Solution supports multiple identity repositories, including Microsoft Active Directory (AD), Lightweight Directory Access Protocol (LDAP), and Novell's NDS - and importantly, it does not impose the need for extensive modification of the repository to support different capabilities such as IM, voice, or conferencing.
- Network: Your network should be able to accommodate the special demands of a UC solution, including high-quality voice and video. The Cisco network architecture includes innovative services such as medianet, Call Admission Control (CAC), and session management, which our unified communications solution uses to help ensure an optimal user experience under widely differing workloads.

Recommendation: Investment protection should go further than simple "desktop interoperability"—look for greater flexibility and choice with minimal disruption to either users or IT infrastructure.

2. Commitment to Standards and Innovation

Industry standards ensure a level of compatibility with installed endpoints and systems, and simplify support and integration. But a deployment based purely on standards is unlikely to provide enough "real-world" value to be useful. Standards typically lag behind the state of the art and address only a core subset of a full product experience - it is **innovation** on top of a standards-based implementation that can provide the edge.

Cisco bases its UC solution on an open architecture that supports all relevant industry-standard protocols, codecs, and interfaces, allowing the widest possible degree of compatibility with existing enviroments - while at the same time featuring state-of-the-art innovations that add significant real-world value for IT and the user. For example:

- Broad codec support: For example, Cisco supports multiple media compression standards and codecs such as H.264, H.323, G.711, G.722, and G.729 as built-in features of our voice and video solutions rather than through "bolt-on" modules or gateways that add complexity and cost. In addition, we have added automatic transcoding and rate-matching capabilities to help ensure the content is presented in the highest quality appropriate for the particular device or application the user is accessing. A mobile worker joining a video conference from a smartphone or a tablet, for instance, could have a significantly different requirement for video resolution, audio quality, and bandwidth than, say, an executive joining the same call from a high-definition conference room setup.

- Dual protocol support: Cisco provides the industry's only dual-protocol presence platform incorporating both native SIP/SIMPLE and native XMPP connectivity, allowing users to see aggregated availability information across endpoints supporting either standard. Cisco presence solutions interoperate with Microsoft Lync, IBM Lotus Sametime, and Google Talk, without the need for additional servers in the demilitarized zone (DMZ), saving cost and operational complexity. In addition, third-party XMPP clients can register directly to the server without the need for gateways or a thick client.

Recommendation: Look for your unified communications vendor's commitment to "value-added" standards support that improves flexibility and real-world innovation without lock-in.

3. Native Support for Mobile Devices

By the end of 2010, 3.6 billion mobile devices had been purchased, half of them capable of accessing the Internet (O'Reilly, March 2011: "Mobile Design and Development"), and by 2013 the mobile phone is projected to become the most common device for accessing the Internet, with more than a third of the global workforce expected to become mobile information workers (IDC research, February 2010).

Therefore, a critical requirement for any UC solution should include its degree of support for mobile devices in an enterprise environment. Considerations should include:

- Native clients: Cisco espouses mobility and device choice as fundamental principles, and spends a great deal of time and resources to produce native clients that are developed, tested, and supported by ourselves, not a third party. Our unified communications client is available for Windows, Mac, iPhone, iPad, Nokia, Android, and BlackBerry platforms, and behaves natively within its respective environment so the user can become productive quickly.
- Regular updates: You should not be forced to wait while an important new update is made available on your chosen device. Cisco provides timely updates on all the major smartphone platforms without imposing a delay to, say, synchronize it with host operating system support, meaning you can embark on a mobile UC implementation today and start to reap the benefits, confident that the new capabilities are supported by the vendor and will continue to be enhanced in the future.
- Comprehensive functionality: Cisco Unified Communications client applications provide presence, instant messaging, voice and video, voice messaging, desktop sharing, and conferencing capabilities that you can use with either on-premises or cloud-based UC services. Our mobile environments also support numerous features to make the experience more valuable, including visual voicemail, transparent call handoff (which moves calls from the desk phone to the mobile device or conversely), and web conferencing from the iPhone, iPad, Android, and Blackberry devices for live viewing of shared content.
- Cost avoidance: Mobile communications can sometimes be a costly prospect for IT to support. This burden can be reduced with features such as Dial via Office (which intelligently routes mobile calls through the corporate system to remove long-distance or international costs), and IP soft-phone capabilities on the iPhone, Android, and Nokia devices, which allow you to securely place and receive calls over a corporate Wi-Fi network or any Wi-Fi hotspot.
- Compliance and governance: Our mobile solution supports Single Number Reach, allowing businesses to publish one business phone number and ensure corporate voicemail is used, while allowing employees to be reached on multiple alternate devices without releasing the mobile or home-office number.

Recommendation: Look for native, current support for the leading mobile devices, together with tight integration into the corporate unified communications system for compliance and cost control.

4. Support for Emerging Consumer Platforms

According to recent surveys, up to 80 percent of the Fortune100 and 60 percent of the Fortune 500 companies now claim to have tablet users (*The Wall Street Journal* February 2011) - in many cases in the executive suite, not just the millennial workforce. And last year, Kraft Foods implemented a “bring-your-own-device-to-work” policy for its employees (GigaOM, August 2010), an idea that is finding increasing acceptance in many other corporations.

This use of consumer devices at work is challenging IT to find a new balance between flexibility and control, and your UC solution needs to be part of the decision given its increasing emphasis on mobile communication from a variety of endpoints. Some points to consider here include:

- Enterprise-class control: Your UC solution needs a comprehensive policy control system, to provide flexible yet secure access to corporate systems from these consumer style devices. The network is the most effective place to locate a security framework (where features such as session encryption, intrusion prevention, and spam blocking can have the widest effect), as well as highly granular access control that can trace, identify, and grant or deny access to any resource or service in real time.
- Consumer choice: In addition to the leading smartphones, the Cisco Unified Communications Solution also supports the leading tablets, including the Apple iPad, Android equivalents such as Samsung Galaxy, and our own Cisco Cius™ business tablet. This support allows you to offer a “best-of-both-worlds” combination of personal user device choice together with an optimized collaboration experience, increasing the chances of adoption and compliance as well as productivity for the business.
- New application models: The advent of user-accessible application stores that accompanied these consumer devices has also challenged IT, which has typically used controlled or “standard-image” provisioning. Once again, rather than blocking progress it is possible to accommodate this new model by allowing users to access a secure, custom “enterprise app store” to download approved applications on a personalized basis, while limiting access to other applications that may increase risk. The Cisco Unified Communications Solution supports this model with its Android-based Cisco Cius business tablet.
- Vendor-backed support: While personal ownership models can reduce capital expenses, it is important not to transfer the burden to operational costs instead. IT needs to offer the same enterprise-class support for these consumer devices as it would for corporate-owned assets, but the wide array of new vendors, models, and software releases involved could quickly become prohibitive. It is all the more important, therefore, to check that your UC solution provider provides current, vendor-backed, enterprise-class support for the leading smartphones, tablets, and other emerging devices, so your support policy is backed by professional resources and does not jeopardize service levels or support costs.
- Future device support: Consumer technology does not stand still, so your UC solution needs the ability to quickly embrace new devices and operating systems no matter what the future holds. Cisco’s collaboration architecture was specifically designed with a client services framework - a software abstraction layer that allows rich programmatic access to our core UC services from any device or operating system - offering reassurance of support for the next consumer device of choice.

Recommendation: Look for vendor-backed support of leading consumer devices and application store models, together with comprehensive security and access control.

5. Video

Video is rapidly transitioning from a niche interest to mainstream adoption. Last year the proportion of network traffic generated by video crossed the 50-percent threshold, a number that is projected to increase to more than 90 percent by 2013 (Cisco Visual Networking Index [VNI] 2010, 2011). Unified communications should treat video as an equal-choice option for users alongside voice and text, in mobile as well as office-based environments. But video is not a "one-size-fits-all" proposition from an infrastructure point of view, and a quality user experience is paramount to maintain productivity. By building comprehensive video-handling requirements into your UC solution architecture, you will be in a stronger position to support demands for visual applications whenever and wherever required. Consider the following points:

- Video is different: There is a common misconception that video is "just another workload" that requires no more special handling than voice or data. The reality is that video has very different characteristics: it is "bursty", it uses large packet sizes, and it is very sensitive to delays and dropouts. The Cisco Unified Communications Solution makes extensive use of medianet - a network-based architecture for dynamically handling the special requirements of video to deliver an optimal experience tailored to each user.
- Three different use cases: It is important to identify how video will be used in your organization, and to be able to prioritize the traffic appropriately. There are three main types of business-related video interaction:
  - Communication: Consider the example of an executive talking to a customer over a high-quality connection and equipment. In this case the video traffic is two-way, real-time, high-definition, and needs to be carefully prioritized to avoid dropouts and delays. Cisco immersive video solutions are specifically designed for this type of communication, and they provide the highest quality of interaction in the industry.
  - Content distribution: A different use case might be a training video for employees, where the traffic typically travels one way to a large audience, and may either be consumed live or as an offline recording. In this case the handling requirements are less critical and the video traffic can be prioritized accordingly. Cisco's real-time meeting and offline video-sharing solutions can accommodate a wide range of audience sizes, locations, and connection types without disrupting the network for other users.
  - Collaboration: A third use case could be a videoconference to discuss a project or document with a distributed work team, involving a variety of connections and device types. Here the traffic is two-way, and could include live camera feeds of the participants in addition to shared desktop content. Cisco conferencing solutions can handle the video feed to and from each participant (in high definition if required), automatically switch the active speaker to a larger window, and include participants from other systems at the touch of a button.
- Video is an end- to-end issue: State-of-the-art medianet features, such as intelligent codec selection, automatic transcoding and transrating of media in flight, and real-time tuning of the network - extend all the way through to the endpoint. These features help ensure a high quality of service tuned to each user, more optimal use of network resources, and can even provide added endpoint security from, say, detection of an unapproved device being attached to a video surveillance system.

Recommendation: Consider a unified communications platform that can inherently handle all three types of video interaction, and provides a superior user experience under all conditions.

6. Consistent Experience Across Delivery Models

A UC solution should not require customers to make a choice between elastic (that is, cloud-based service) and inelastic (fixed-capacity) delivery models. Its functions and the user experiences should be indistinguishable regardless of where the UC applications are hosted, and the decision of which model to use should simply be a matter of architectural preference and economics. You may even want to deploy a hybrid mixture of the two models, and change that mix over time. Points to consider include:

- Full range of options: With Cisco Unified Communications the full range of hosting options is available, from wholly on-premises, through various managed service models, to fully hosted, “as-a-service” or hybrid approaches. In each case the UC functions are identical, so your users will have an integrated and consistent user experience, and there is no cost in productivity to change models.
- Adapts to the environment: Connecting into a web conference from a public environment such as a coffee shop or an airport has very different IT implications from connecting to the same meeting over a corporate network from headquarters. Your UC solution should be able to adapt to the conditions, and have the flexibility to apply appropriate security, bandwidth, and quality-of-service (QoS) policies while still preserving the user experience. The Cisco Unified Communications Solution is built on a sophisticated network-based architecture that can accommodate widely differing service connections and optimize the experience dynamically.
- Any workload: Another important consideration is the ability to place any workload in the cloud - that is, not simply documents and email but also rich real-time media such as voice and video. After all, these media are part of the wider definition of UC, and should be offered consistently regardless of where the solution is hosted. The Cisco architecture not only supports the entire UC solution in the cloud, including voice and video capabilities, it also is designed to overcome the latency and quality problems that can disrupt the user experience when using remote hosts.

Recommendation: Choose a unified communications solution that offers full flexibility of deployment and supports any workload, including enterprise-class voice and video.

7. Enterprise-Class Social Software

More companies are realizing the potential for social software to unlock new levels of productivity and knowledge sharing in the enterprise, but have concerns about how to implement it. The millennial workforce grew up with Twitter and Facebook and expects to use them in everyday business, but this poses new risks for security and compliance. Ad hoc deployments of wikis, blogs, RSS feeds, and so on can lose their “network effect” unless deployed uniformly, and content-management systems were not inherently designed as social networking tools, so they can become a costly custom development project.

What is needed is a way to embrace social software principles in an intuitive way as part of every user’s daily behavior, rather than a specialized tool that may not be adopted by everyone. Your UC solution is the logical place to make this connection, because the infrastructure is already there to facilitate a wide variety of social interactions across the company under policy control, and users can easily access social tools as part of their unified communication experience:

- Integrated user experience: Social capabilities should be a natural part of the UC solution, offering a customizable blend of social tools in an intuitive, integrated environment that suits each individual's requirements. The Cisco solution employs elements of consumer-style social networking, context, profiling, and semantic search, together with pre-integrated "click-to-collaborate" functions using IM, conferencing, voice, and social video on a variety of devices and environments.
- Governance and security: With so much information and connectivity concentrated in a social network, security and trust are of utmost importance. In addition to standard authentication, authorization, and accounting (AAA) security and encryption provisions, businesses must be able to define both open and restricted communities, and to ensure that functions within the social network are role-based and rule-directed. Highly granular policy management is a fundamental feature of the Cisco Unified Communications Solution that allows considerable flexibility and control while ensuring compliance with industry requirements.
- Customer collaboration: Social software is also taking on more significance in brand management - people are more influenced to make purchases based on what their friends say than by a company's own marketing. So another consideration when choosing a UC solution is its ability to support proactive customer interaction based on their public social media posts in Facebook and Twitter, to address satisfaction issues in real time, or even to crowdsource new product ideas. Cisco offers just such an application that takes advantage of the same infrastructure as our enterprise UC solution, allowing you to gain incremental value from your UC investment while improving customer satisfaction and competitiveness.

Recommendation: Embrace a range of social software tools as an innovative choice for employee productivity and customer outreach, while ensuring enterprise-class security and manageability.

8. Security

A comprehensive strategy for security is essential to any UC deployment, especially given the trends toward mobility, consumer devices, and social software. At the same time the value of a UC solution increases with wider participation and information sharing, and too restrictive a security policy will limit user adoption. What is needed is a flexible balance between control and access that protects enterprise resources while encouraging open communication. Considerations include:

- Pervasive control: There is no better point from which to enforce security than within the network. The hosting of essential features such as session encryption, intrusion prevention, and spam blocking is more easily managed there, as is the ability to trace, identify, and grant or deny access to any resource under highly granular policy control in real time. The Cisco Unified Communications Solution employs a comprehensive "defense-in-depth" security framework that has been proven in the most demanding enterprise environments.
- Pervasive access: The other aspect of control is the need to provide wide legitimate access to the unified communications solution for users without imposing cumbersome procedures. The Cisco AnyConnect™ secure mobility client is a popular solution for accessing UC services from smartphones such as the Apple iPhone. It provides secure connectivity in a lightweight customizable download, including an always-on intelligent VPN, built-in web security, malware defense, compliance validation, smooth handoff between wired and wireless networks, and much more, with low administrative overhead.
- Survivability: Your UC security considerations should also include the ability to survive an attack from a worm or virus that may temporarily cripple your servers. The Cisco end-to-end approach encompasses

both the network and the entire telephony system, and guarantees dial tone in even worst-case denial-of-service (DoS) scenarios, so it is highly likely that the Cisco network and unified communications capabilities will still be online even if headquarters and WAN links are affected.

Recommendation: Take a multilayered approach to security that can accommodate flexible access from new mobile devices while eliminating threats and preserving uptime.

9. Enterprise-Class Operational Support

Despite its rich range of functions, a UC deployment should not add unnecessary burden to IT operations. Several areas to consider here include the depth of vendor support, the manageability of the solution, and its ability to provide detailed monitoring and reporting:

- Vendor support commitment: An area to examine carefully is the degree to which your UC solution vendor has committed to support its customers directly rather than through third parties, whether coverage is offered globally on a 24-hour, 7-day-per-week basis, and whether comprehensive troubleshooting and escalation processes are in place to ensure a successful outcome. Cisco award-winning global technical support services provide direct access to Cisco engineers and expertise, sophisticated diagnostics and real-time trace tools, and rigorous escalation policies that are tracked until the case is resolved.
- Enterprise-class provisioning: Provisioning of a UC system requires careful configuration of each service to each client and server, and today this process is still largely a manual, static exercise that creates a semipermanent maintenance overhead for IT and delays for the business. The Cisco Unified Communications Architecture includes a service advertisement framework that allows servers, clients, and applications to advertise and discover their services dynamically, significantly reducing IT maintenance and delays. Other features such as session management, centralized trunking, and dial-plan management can reduce administrative overhead still further.
- Monitoring and reporting: Administrators have access to a wide range of real-time monitoring, diagnostics, and reporting tools to keep the UC running smoothly, honed in thousands of real-world deployments. Among the many enterprise-class features offered, they can automatically scan and inventory the entire system end to end, adjust utilization and quality levels, set customized alerts and notifications, and obtain comprehensive reports and statistics that can help capacity planning and service-level agreement (SLA) measurement. And by virtue of the built-in standards support mentioned earlier, our unified communications solution can participate fully in “single-pane-of-glass” systems-level management and monitoring tools.

Recommendation: Unified communications demands enterprise-class vendor support and comprehensive tools to maintain uptime, to diagnose issues and to reduce operational overhead.

10. Vendor Maturity and Vision

Cisco began developing IP communications solutions in 1997, and has been in the business longer than any other vendor. Today, more than 85 percent of Fortune 500 companies use Cisco Unified Communications, and we have shipped well in excess of 30 million IP phones. We are the Gartner Magic Quadrant market leaders in several important categories, including IP Telephony, Unified Communications, Conferencing, Telepresence, and Customer Care.

We believe that successful delivery of the next-generation collaboration experience is not just a matter of desktop software, or the latest social network or smartphone. It requires a “full-stack” approach, and an acknowledgment

that the underlying collaboration infrastructure can make the experience more natural and integrated, can reduce IT complexity through greater reuse across silos, and can deliver the superior reliability, scalability, and robustness expected of a true business solution.

The network is in a unique position to host these infrastructure services and to make them available consistently to all connected applications and devices, rather than in multiple separate silos dedicated to a single purpose. Many business-critical collaboration capabilities - such as the ability to ensure high-quality mobile interactions, to span seamlessly between cloud and on-premises delivery models, to provide high- quality real-time video and audio content on any device, or to have "'your information find you"' - are inherently well suited to a network-based architectural approach.

More specifically, the Cisco approach offers the following advantages:

- A market-leading portfolio of communications and collaboration solutions designed for the new workspace - including conferencing, messaging, telepresence, enterprise social software, and IP telephony, designed for the purpose rather than as "add-ons"
- A consistent end-user experience across multiple devices - including native support for Windows, Mac, iPhone, iPad, Android, Nokia, and Blackberry devices
- Feature parity across on-premises, public, or private cloud deployments - including voice and video in both hosted and virtualized desktop models
- Real-time media workloads managed for high-quality experience - using network-based services for QoS, CAC, autodiscovery, transcoding, and transrating
- Enterprise-ready social infrastructure - including contextual search; streamlined information sharing; dynamic communities; and pre-integration with voice, video, and enterprise applications
- Investment extension of Microsoft environments - with application programming interface (API)-based integrations into Microsoft Office, SharePoint, Exchange, and Active Directory

We believe the next breakthrough levels of business innovation and efficiency will come from your ability to embrace the new workplace trends; to tap into the latent expertise hidden within your organization; and to engage your employees, customers, and partners more closely in the business. Cisco stands ready and willing to help you get there, starting today.

Recommendation: Consider a vendor's track record, its market position, and its commitment to supporting next generation capabilities while providing a choice of on-ramps to the journey.

For More Information

For more information about Cisco Unified Communications, please visit http://www.cisco.com/go/uc or contact

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