

# Evaluating Unified Communications Solutions

Unified communications 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 videoconference - is bringing benefits to businesses of every size, industry, and geography.

But how should you select an enterprise-class unified communications solution? Unified communications 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 or being able to connect with users on different devices or systems. Likewise, a unified communications deployment that does not adequately consider the implications on IT infrastructure, such as security, directories, media handling, application hosting, networking, interoperability, 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 end-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 unified communications 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 unified communications solution should add complementary value to this software at both server and desktop levels. The Cisco Unified Communications 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.

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- **Desktop experience:** Your investment in user productivity should not be disrupted. Your unified communications solution should fit in with your users' current desktop experiences and enable them to be more productive without requiring them to relearn their tools and processes. The Cisco® Unified Communications Solution provides value to users in an intuitive manner, such as:
    - Comprehensive presence: Users can see “always-on” colleagues' 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 their colleagues' 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 unified communications 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 3<sup>rd</sup> party IP-based systems as needed.
    - A comprehensive management solution for the entire Unified Communications system, that accelerates site rollouts and ongoing maintenance, lowers operating expenses, and help ensure a world-class quality of experience for end users.
    - 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.
    - A highly reliable, available solution that includes branch, teleworker and cloud survivability.
  - **Identity system:** Your unified communications 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 instant messaging, voice, or conferencing.
  - **Network:** Your network should be able to accommodate the special demands of a unified communications 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.

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## 2. Commitment to Standards and Innovation

Industry standards ensure a level of compatibility with installed endpoints and systems, and simplify support and integration. This not only eliminates “rip and replace” today but also in the future. It helps give organizations the peace of mind that what they buy today is standards-based and will interoperate with newer technologies or solutions as they come along.

Cisco bases its unified communications solution on an open architecture that supports all relevant industry-standard protocols, codecs, and interfaces, allowing the widest possible degree of compatibility with existing environments, 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:** Cisco supports multiple media compression standards and codecs such as H.264, H.265, 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 videoconference 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 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.

## 3. Native Support for Mobile Devices

Global mobile devices and connections in 2013 grew to 7 billion, up from 6.5 billion in 2012, and the number of mobile-connected devices will exceed the world’s population by 2014 (Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update 2013-2018: [http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white\\_paper\\_c11-520862.html](http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html)).

Therefore, a critical requirement for any unified communications 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, Cisco Jabber, is available for Windows, Mac, iPhone, iPad, Nokia, and Android, 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 unified communications 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.

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- **Comprehensive features:** 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 unified communications 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 mobile devices including the iPhone, iPad, Android, and Windows 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.

#### 4. Support for Emerging Consumer Platforms

Gartner predicts that by 2017 half of all employers will require employees to supply their own device for work purposes: <http://www.gartner.com/newsroom/id/2466615>.

With this continued trend in employee-owned devices, IT needs to find a new balance between flexibility and control, and your unified communications 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 unified communications 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 and Android equivalents such as Samsung Galaxy. 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.
- **Multi-platform support:** IT needs to offer the same enterprise-class communications support for personal owned, consumer devices used for work as they would for corporate-owned assets. It is all the more important, therefore, that your unified communications solution provider provides enterprise-class support for the leading smartphones, tablets, and other emerging devices and that the service level agreement extends to the 3<sup>rd</sup> party devices.
- **Future device support:** Consumer technology does not stand still, so your unified communications 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 unified communications services from any device or operating system - offering reassurance of support for the next consumer device of choice.

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## 5. Video

Video is rapidly transitioning from a niche interest to mainstream adoption. By 2018, mobile video will represent 69 percent of global mobile data traffic, up from 53 percent in 2013 (Cisco Visual Networking Index [VNI] 2014: <http://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html#~news>). 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. When comprehensive video-handling requirements are built into your unified communications 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” and uses large packet sizes, and it is very sensitive to delays and dropouts. The Cisco Unified Communications Solution makes extensive use of Cisco 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 where the video traffic is two-way, real-time, high-definition. Cisco’s video solution carefully prioritizes the video traffic to avoid dropouts and delays, ensuring the best quality and experience.
  - **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. Team members could be within the enterprise, on the road using mobile devices or even in different organizations using different systems and endpoints. 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. And, as importantly interoperates with 3<sup>rd</sup> parties and with those users beyond the firewall.
- **Video requires an end-to-end solution:** State-of-the-art Cisco 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 and more optimal use of network resources, and they can even provide added endpoint security from, say, detection of an unapproved device being attached to a video surveillance system.

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## 6. Consistent Experience across Delivery Models

A unified communications 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 unified communications 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 unified communications functions are identical, so your users will have an integrated and consistent user experience, and there is no cost in productivity to change models.
- **Adaptability 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 unified communications solution should be able to adapt to the conditions, and have the flexibility to apply appropriate security, bandwidth, and 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 unified communications, and should be offered consistently regardless of where the solution is hosted. The Cisco architecture not only supports the entire unified communications 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.

## 7. Customer Experience

Your customers are more empowered than ever before. They have tremendous influence and reach through social media, more options and choices on how they get information and whom to buy from, and high expectations about customer service. According to Forrester Research, Better Customer Experience Can Deliver More Than \$1 Billion In Revenue Growth:

[http://blogs.forrester.com/maxie\\_schmidt\\_subramanian/14-04-23-make\\_the\\_business\\_case\\_better\\_customer\\_experience\\_can\\_deliver\\_more\\_than\\_1\\_billion\\_in\\_rev](http://blogs.forrester.com/maxie_schmidt_subramanian/14-04-23-make_the_business_case_better_customer_experience_can_deliver_more_than_1_billion_in_rev).

What you need is a comprehensive customer engagement strategy and technology to support the strategy. Thus, you can't have a standalone contact center. You need a contact center solution that is part of your overall unified communications solution:

- **Integrated customer engagement experience:** As customer expectations increase, maintaining customer satisfaction is an ongoing challenge - and a competitive opportunity. Continuing to evolve your customer interaction strategies can lead to faster problem resolution, greater customer loyalty, better customer information, and more efficient contact centers. You can provide service through the channels your customers choose to reach you, whether in person, by phone, online, or through social media.

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- **Remote expert:** When customers need an expert help, it's a great opportunity to turn that moment into a great customer experience whether it's closing a sale or resolving a problem. Consider a unified communications solution that allows you to instantly find and connect with experts remotely with video, providing customers with a personal assistance wherever they are. You can scale expertise and expand your coverage without compromising the customer experience. In fact, the right unified communications solution will increase customer satisfaction by delivering an engaging, personal experience for your customers.
  - **Social media engagement:** 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 unified communications solution is its ability to support proactive customer interaction based on your customers' public social media posts in Facebook and Twitter, to address satisfaction problems in real time, or even to crowd-source new product ideas. Cisco offers just such an application that takes advantage of the same infrastructure as our enterprise unified communications solution, allowing you to gain incremental value from your unified communications investment while improving customer satisfaction and competitiveness.

## 8. Security

A comprehensive strategy for security is essential to any unified communications deployment, especially given the trends toward mobility, consumer devices, and social software. At the same time the value of a unified communications 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. Cisco Jabber users as well as teleworkers using Cisco IP phones or TelePresence endpoints have the option to securely connect to all their unified communications workloads with or without requiring the extra step of a VPN. Cisco Expressway and Cisco Unified Border Element (CUBE), provide secure communications over the internet back into the organization using Transport Layer Security (TLS) technology. For users requiring VPN access, the Cisco AnyConnect<sup>®</sup> is a popular solution for accessing unified communications and data services.
- **Survivability:** Your unified communications 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.



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## 9. Enterprise-Class Operational Support

Despite its rich range of functions, a unified communications 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 unified communications 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 unified communications 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 Intercluster Lookup Service which automates, advertises, and distributes services across a multi-cluster Cisco Unified CM deployment or enterprise-wide recording solutions.  
  
Cisco Prime™ Collaboration network management provides comprehensive network management, including provisioning that greatly streamlines the process. Additionally, the Cisco Unified Communications Solution includes user self-service options, which can empower users and eliminate the need for IT assistance in many cases. Other features such as session management, centralized trunking, and dial-plan management can reduce administrative overhead still further.
- **Monitoring and reporting:** Through Cisco Prime Collaboration, in addition to provisioning, administrators have advanced real-time monitoring, diagnostics, and reporting capabilities to keep their unified communications environment running smoothly and efficiently. With the many enterprise-class features offered, administrators can automatically scan and inventory the entire system end to end, adjust usage 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.

## 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 95 percent of Fortune 500 companies use Cisco Collaboration, and we have shipped more than 70 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.



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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 transparently 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, video, content sharing, and IP telephony, integrated to work seamlessly rather than as point products.
- A consistent end-user experience across multiple devices, including native support for Windows, Mac, iPhone, iPad, and Android 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 experiences, using network-based services for QoS, CAC, autodiscovery, transcoding, and transrating, plus comprehensive network management.
- Enterprise-ready social infrastructure, including contextual search; streamlined information sharing; dynamic communities; and preintegration 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. Also, this includes extensive interoperability with Microsoft Lync’s unified communications applications.

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.

### For More Information

For more information about Cisco Unified Communications, please visit <http://www.cisco.com/go/uc> or contact your local Cisco account representative.



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