

# UNIFIED COMMUNICATIONS: COLLABORATION

New communication tools and interactive capabilities make this technology a must-have for organizations.

## Executive Summary

When people work together effectively, organizations and their endeavors thrive. The challenge now is enabling people with the tools to work together effectively when they are not in the same place, but are separated by geography, time zone, country and perhaps even organizational boundaries. Thankfully, there is a well-established set of collaboration technologies available to address this challenge.

Presence, availability and instant messaging (IM) systems let people see when their colleagues are available for interaction, regardless of where each happens to be (around the corner or around the world). These technologies provide a set of tools for quick and effective interaction.

Social media services provide new ways of engaging in collaborative discussions with people outside the organization, and these same technologies can be applied inside organizations to unleash latent collaborative potential. Video collaboration systems enable effective face-to-face meetings when people are separated geographically, and allow for more frequent and fluid interaction compared with traveling for meetings.

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TWEET THIS!

And with cloud collaboration services, businesses, governments and educational institutions can gain rapid access to state-of-the-art collaboration technologies without having to wait for their internal IT departments to build and deploy infrastructure.

This white paper examines the collaboration technologies available today, with an emphasis on the features and benefits of various technologies. It also notes the products and infrastructure required for different types of collaboration technologies to work well together and offers approaches that managers can consider for embracing these new ways of working.

## Changing How We Work Together

The reality of business, government and education today is that their activities are multinational, global and fast-paced. Business organizations often have employees located around the world. Government agencies engage in multiagency initiatives, often across traditional jurisdictional boundaries. Educational institutions wage campaigns for top students and seek to keep them engaged in alumni activities far beyond their initial learning periods.

This new reality of working has been enabled by new collaboration technologies and is increasingly reliant upon them for effective and efficient organizational communication. Collaboration tools include the following technologies:

- **Presence and availability systems:** reveal when colleagues, staff workers and fellow students are online and available for interaction – regardless of their physical location
- **Instant messaging services:** rapidly facilitate text-, voice- and video-based interaction, through multiple devices including desktop computers, notebooks, tablets and smartphones
- **Social media tools:** provide a venue for capturing, analyzing and engaging with customers, citizens and students around an organization's products and services, new government policies and student assessments of educational performance
- **Video collaboration systems:** re-create an experience that's similar to face-to-face interaction, allowing users to schedule video meetings and enrich their communicative interactions
- **Cloud collaboration services:** provide rapid access to collaboration technologies without having to build and maintain in-house infrastructure

Collaboration technologies bring significant benefits to organizational communication, including the following.

**Streamlined communication:** Using presence and instant messaging, managers can rapidly communicate with their staff, regardless of where they are located. Draft documents can be immediately shared with everyone on a project team,

without waiting for overnight deliveries. Approval cycles can be collapsed to minutes, even when executives are in the midst of business travel.

**Travel savings:** Routine team and project meetings can be replaced with instant messaging or video collaboration. Spending a day to travel for a one-hour meeting becomes an inefficient practice relegated to the past. Now managers and elected officials can meet with many more people each day, pushing forward their organizational and agency agendas.

**Lower telecom costs:** Creating new ways of interacting with others over a secure Internet-based network can eliminate expensive phone calls and fax messages. Voice calls now happen through instant messaging services such as Microsoft Lync or IBM Sametime. Person-to-person video communications can take place from notebooks, tablets and smartphones, and room-based high-definition video conferencing can support multiperson meetings.

**Other benefits:** The effective use of collaboration technologies can deliver other significant benefits too, including workflow optimization, faster time-to-hire for new employees, greater input from experts, a platform for innovation and enhanced organizational memory.

## Webinar: Best Practices for Unified Communications



Learn the basics of integrating collaboration and other UC technologies into an organization's workflow and processes:

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Collaboration technologies provide essential tools for people to work together. While newer technologies are constantly being developed, there is a thematic continuation across the different generations of tools.

Instead of phone calls made through a telecom provider, voice-based calls are made using an instant messaging system. Rather than using an overnight service to ship documents around the world, documents are now shared online. Instead of traveling for a meeting, everyone gets together over a video conferencing connection.

This thematic continuation means that justifying return on investment (ROI) can be informed by a simple calculation of cost differences between old and new ways of working together. What follows are three examples to consider.

- 1.** Attending a meeting in another city requires a day of travel, plus airfare and other travel costs. Including the salary component, this could equal \$1,000 per employee per day. It doesn't take many days of eliminated travel to pay for new video conferencing gear. Video conferencing equipment can also be used to rethink the hiring process, saving direct travel costs as well as enabling a greater agility to win the best workers.
- 2.** Identifying and recruiting customers for an in-person focus group session takes time and effort, and focus groups benefit from a skilled facilitator. In some cases, input of a similar or greater value can be gained by engaging with customers through social media tools – at a much-reduced price.
- 3.** Presence and availability systems eliminate the wait time in approval processes, as the required people can be located quickly and efficiently without calling around trying to track them down. This means that customer issues can be addressed faster, leading to improved customer satisfaction and retention. Other processes can be sped up, pulling forward revenue or streamlining decision-making.

## Preparing for Black Swan Events

A "black swan" event is an unforeseen or random occurrence that causes massive disruption.

Volcanic eruptions, freak snowstorms, extensive flooding and earthquakes are often black swan events, and these frequently make travel for any purpose difficult if not impossible. While black swan events are unforeseeable, collaboration technologies can mitigate their effects.

For example, when staff are unable to get to the office to do their work, or students can't get to the university for lectures, collaboration technologies can be used instead. It's best not to wait for disaster to strike; start considering options now.

## Presence

When collaborators work together in the same building, their presence can be determined by looking over their cubicle wall or walking down the hall to their office or classroom. When people work from different offices, different campuses, different states and even different countries and continents, presence technology provides the same data.

By using a visual indicator next to someone's name (often a colored circle), presence technology shows when a person is connected to the network, and whether he or she is available

for communication. The core features and benefits of presence technology include the following.

**Registering presence:** Using a software client on a desktop or notebook computer, or an app on a tablet or smartphone, people can log in to the presence system. With growing support for computers, tablets and smartphones, people can use whatever device they have at any time to set their presence.

Leaving the office for a meeting or lunch no longer makes one unavailable. Presence, maintained through a smartphone, eliminates dead time for communication.

**Selecting people to follow:** Large organizations are composed of thousands of people, but the presence of each one of them is meaningful only to a subset of others. Presence systems provide a way for each user to follow the availability of selected relevant people, such as team members, project colleagues and contacts in other parts of the organization.

**Presence-enabled contact list:** When someone registers their presence on the network, their status is automatically updated to everyone who follows them. For example, if manager X is traveling to Europe, while she's on the plane she will be offline, but when she gets to her destination and turns on her smartphone, her presence changes and this is pushed to everyone who follows her.

Only those people who are currently on the network show as being present; everyone else shows as being unavailable. This means that colleagues, fellow staff members and students are not wasting time trying to reach people who are unavailable.

**Availability indicator:** Presence is a binary parameter – someone is either present or not. But availability for communication is more nuanced than that. People who are present are frequently not available due to other commitments, such as being in a meeting, talking to someone else on the phone, or being engaged in a project.

The availability indicator allows each user to convey a qualified answer, so as to appropriately set the expectations of their colleagues. For example, when users go into a meeting, they can change their setting to "In a meeting." Newer systems remove the need for users to manually set their availability.

Microsoft Lync Server, for example, will read the user's calendar in Microsoft Exchange Server and automatically set their availability to "In a meeting" whenever they have a scheduled event. Some headsets now include sensors to know when someone is on a call and can automatically change the availability status as people join and leave one-to-one and conference calls throughout the day.

**Integrating presence into business applications:** Wherever someone's name appears (in business applications, e-mail messages, Microsoft Word documents or intranet pages) there is an opportunity for interaction. Lighting up someone's name with their presence and availability status streamlines

communication, allowing other people to interact quickly with them when the need arises.

Making presence work requires a presence and availability server and client or app software on all appropriate end-user devices. Large organizations will require multiple presence and availability servers, and if they want to share presence information with business partner organizations, they will need the appropriate directory and security tools.

## Instant Messaging

Phone calls demand immediate attention and full engagement by both parties. Catching someone at the best time for a good phone conversation provides a great context for effective collaboration, but it's not that easy to achieve.

Even though people have mobile phones with them at all times, many lead lives of high mobility, and they are just as likely to be navigating through crowded and noisy streets as in a restaurant for a business dinner.

Instant messaging provides an alternative to the effective back-and-forth nature of a phone conversation, without demanding immediate attention and full engagement to work. IM is mainly a text-based method of communication, in which two or more people hold a conversation by typing single or multiline messages to each other. The core features and benefits of IM including the following.

**Presence-enabled contact list:** Presence technology provides the foundation for instant messaging systems. IM adds communication capabilities to a presence-enabled contact list, turning a list of names into a list of possible communicants.

**Instant messaging chat:** On seeing that a colleague is online and available, a user can start an IM chat with them. Double-clicking their name or clicking an icon next to their name usually accomplishes this.

**Current chat window:** The current chat window shows the current conversation to both or all parties. When one coworker types a message for another, it is displayed on the recipient's chat window. When the recipient replies to the sender, the sender sees what the recipient says, as well as what was said previously. As the IM conversation continues, both participants have a full history of their conversation.

**Escalation capabilities:** While instant messaging started as a text-based medium for interaction, current IM systems enable other forms of interaction too. Now what starts as a text-based IM chat can easily be changed into a phone conversation, video call or even a screen-sharing session at the click of a button.

This gives people a simple method of escalating from one form of interaction to another, in line with the dynamics and needs of the current conversation. If text is all that's required, the communication can remain an IM chat. If a more interactive

discussion would be beneficial, the parties can change to a phone or video call.

**Historical communication archive:** Instant messaging systems provide a record of conversations – at least the text-based ones. Users can review the text-based discussions they had with other people at any time, providing both context and a historical record. Organizational systems will usually provide some way of retaining these sessions in accordance with the appropriate government or industry regulations for compliance and records management.

Making IM work requires an instant messaging server and client or app software on all appropriate end-user devices. Organizationwide IM systems such as Cisco Collaboration Suites, IBM Sametime and Microsoft LyncServer combine these capabilities with presence technology, so that a single purchase gets presence and IM both.

## IM Etiquette

An instant messaging chat offers the opportunity for dynamic back-and-forth communication, but common IM etiquette also allows for either party to delay their response at any time.

If the phone rings, or someone comes into either participant's office for a face-to-face conversation, it's permissible for that party to turn away from the chat and engage with the other party. They don't have to even say they have moved away. It's polite to say so, but not essential.

A second etiquette guideline is to start IM chats with text and then move up to a phone conversation or video call if the other party is amenable. Don't force a phone or video call on the other person without asking first.

Before presence technology enabled us to see if people were available, we had no choice but to call their various phones to track them down. Now that the technology tracks their presence and availability on our behalf, it allows a more human-friendly approach to starting conversations.

## Social Media

The original enthusiasm for social media was that it opened new possibilities for collaborating with customers. Social media services such as Facebook and Twitter have attracted hundreds of millions of users from around the world. As these users share what they're up to, talk about the products they are using, and "like" the products and services of specific organizations, those organizations that are paying attention can leverage that input in support of their business objectives.

For example, an organization that is introducing a new beauty product can quickly assess how its consumers are responding to the product by talking directly to them. If the

product is being poorly received, that popular discontent can be leveraged within the organization to show the need for a rapid response – rather than waiting months in order to collect focus group data.

Governments can ask citizens for input on upcoming policy matters, stimulating thoughtful debate. Educational institutions can reach out to students considering their next move and to academics looking for a step up.

In summary, social media services have created new opportunities for forward-thinking organizations, governments and educational institutions to engage collaboratively with their customers, citizens and students.

Although the original application of social media remains in place, an equally compelling objective has emerged based on the popularity of social media services. That idea is that the tools used by social media services for bringing consumers together on the Internet can be used with equal success inside the organization to bring employees together.

Instead of using e-mail to communicate and collaborate inside the enterprise, which involves significant challenges, a different generation of tools inspired by social media services are being used. These include products such as IBM Connections, among many others.

There are many features and benefits that social media on the Internet (and what's called "social business" inside the organization) can yield, including the following.

**Activity streams for sharing what's happening:** People post short updates about what they are doing, thinking or even eating on services such as Facebook or Twitter. Inside the enterprise, the same types of updates can be made, although one would hope that the updates would lend themselves more to what staff are doing in the course of their work.

For example, when someone needs help on a particular topic but doesn't know whom to ask, phrasing a "seeking help" query with an appropriate format could elicit feedback from internal experts who might address the problem.

**Following people and topics:** There is an opt-in model for following the updates of other people, both on the Internet and inside the organization. Hashtags (any word or phrase preceded immediately with a "#" such as "#socbiz") are used to provide an unmoderated method of grouping similar updates.

Anyone can use any hashtag to insert an update into the activity stream related to that hashtag, and people can follow hashtags directly. By following people, it's possible to monitor what they are saying and doing.

By following hashtags, it's also possible to follow all of the activity that is intentionally flagged as being related to that issue. This offers great opportunities for encouraging serendipity inside the organization, whereby people with an

interest in a particular topic stumble across others with a similar interest – all through the use of hashtags.

**Open commenting on what other people are saying:** Social media services are fairly open environments, allowing anyone to comment on what others are saying. In Twitter, unless users make their updates private to a select group of people, anyone can see what they are saying – and respond directly. Similar open conversations can take place on Facebook.

In an organizational setting, this mode of open conversation is a great force for capturing ideas from anyone, regardless of job role or formal position in the hierarchy. What someone knows counts more than where he or she might sit – a significant change that will challenge some people in the organization while freeing others to make a greater contribution.

**Rating or approving of activity updates, content and other contributions:** Social media services and social business systems provide a means for rating the contributions of other people. This may be done via a five-point rating scale, but it's more common to use a single-value "like" option. If someone in the organization likes what someone is doing, they click the "like" button to register approval. If they don't like something, there's no need to do anything.

In some situations, a more granular rating scale – the five-pointer, for example – is useful for showing the extent of approval for particular items. But it's important that the organization's cultural dynamics are in sync with the rating process. Unless a senior manager or new employee feels comfortable rating the CEO's blog post as a 1 out of 5 (the lowest score), multipoint rating can quickly become meaningless.

**Ease of forming groups to express commonality or explore issues:** People need the ability to quickly form groups around common interests, upcoming events and significant organizational problems. On the Internet, this could be a Facebook page for students in a geography class study group, or a group of citizens organizing to oppose a local ordinance.

In the work setting, it could be a group of engineers interested in a new material and its impact on their current products. By supporting self-forming groups, organizations can facilitate contributions by staff to the topics they feel passionate about. Clearly, when this happens, both motivation and creativity are highly stimulated.

The use of social tools outside the enterprise is growing – and every organization's products, services and initiatives are being discussed. If an agency or business is not involved, it's missing out on an opportunity to engage authentically with vocal consumers and constituents..

Inside the enterprise, the story is similar, but more nuanced. The same tools give staffers a new way to work together, with greater transparency, authenticity and connectedness.

## Video as a Collaborative Tool

The idea of video as a collaborative tool (in its many formats) is that it enables people to meet to work together without demanding travel. A telepresence format (with matching room designs, very large displays, high-definition cameras and fast network connections) gives the impression that other people are sitting just across the table.

At a more personal level, such as through a notebook or tablet, individuals can converse via video – sharing views of physical objects of common interest (such as a new product being jointly designed), and watching facial expressions and body language to understand what the other person is communicating. In cross-cultural situations, video greatly helps with making communication more effective among people who speak different first languages or otherwise express themselves differently.

The core features and benefits of video as a collaborative tool include the following.

**Cameras, microphones and displays:** These tools are at the heart of video conferencing. A camera captures the live image of one participant and displays it for the other participants in the video call. The microphone captures the speech and likewise shares it with the other participants. Thus, everyone gets to see and hear what the others are saying.

**Different systems for different needs:** For person-to-person video conversations, a personal video setup is all that's required. That's usually accomplished today through a video camera in a computer, tablet or smartphone.

For small-group collaboration, a room-based system is ideal, featuring a single, large display and a remotely controlled camera. Depending on who is talking, the camera can be automatically or manually focused on them so the remote participants see who is speaking. In situations where very high quality is needed, multiple large displays combined with multiple cameras are required.

This enters the realm of telepresence, which combines a special room layout with high-definition equipment. In a telepresence meeting, a large display will show only one or two people, and there may be three or four large displays per room. This can be used to support a meeting between two rooms (with four to eight people per room), or to bring together multiple rooms around a single virtual table.

**Control over the remote camera:** In a small-group video meeting, where there is a single camera at each location for capturing multiple people, the system often provides a way for the participants in one location to control the camera at the far end. This allows detailed control over who is shown on the display at any time, allowing the participants to watch as they take part in the conversation.

Camera control includes capabilities such as panning from side to side (to view around a desk) and zooming in to a particular person (to make them appear larger on the screen).

**Camera for sharing documents and other artifacts:** When documents and other artifacts are part of the collaborative effort, a means for showing physical objects remotely is required. Sometimes holding the document or artifact up to the camera is sufficient, but this conveys a low-fidelity image, good only for a glance.

For in-depth analysis of the object, such as brainstorming a resolution to a problem, thinking about how to phrase a sentence better, or deciding what to do in response to a new opportunity, a higher-quality setup is required, usually made up of a high-definition camera and a separate display.

Video-enabled devices are widely available. Many desktop and notebook computers have built-in cameras, mainly for video purposes. Many smartphones and tablets have both rear-facing and front-facing cameras, one for taking photos of other people and activities and one for video purposes.

For situations requiring multiple people in a video conference, numerous vendors offer an array of options, ranging from inexpensive setups for small-group team meetings to telepresence suites for the executive end of the market.

More specifically, the technology for these environments involves:

- **Desktop endpoints:** A desktop endpoint combines a camera, microphone and display into a single, integrated unit. Increasingly this is accomplished through a desktop or notebook computer, but there are specific options available for video. When simplicity is required, opting for a special-purpose desktop endpoint over a multipurpose computer may be the answer.

- **Video room endpoints:** For team and group meetings, a room-based setup is required. Video endpoints in this situation provide a high-definition camera, mixed with one or more microphones and one or more large display screens.

- **Video conferencing bridge or multipoint control unit:** A video conferencing bridge links the video meeting rooms and individual video systems in a meeting and shares the video stream with everyone involved. If people are joining from systems with different capabilities and resolutions, the bridge normalizes this for all parties, so as to provide a seamless and unified experience.

## Cloud Collaboration

Collaboration capabilities, such as those described so far in this white paper, are provided by enterprise-level services. Historically, this required having an IT department to build and maintain servers, networks and other internal infrastructure for delivering collaboration technology.

As software updates from the vendor were released, the internal IT department had to test and approve the deployment of these updates, and deal with any unanticipated consequences. Although this approach of building and maintaining collaboration capabilities internally remains a valid choice for organizations, cloud collaboration provides a viable alternative.

When collaboration technology is delivered by a cloud-based service, a third-party service provider has built the servers, networks and other infrastructure required for delivering collaboration capabilities. Organizations can access these capabilities via a fee-for-services arrangement. Cloud collaboration services are widely available and include offerings from Microsoft (Office 365), IBM (IBM SmartCloud for Social Business), Cisco (Hosted Collaboration Solution) and other providers.

Compared with the approach of building internal infrastructure for delivering collaboration services, the cloud collaboration approach offers significant advantages, including the following.

**Speed of access to collaboration capabilities:** Cloud services can be purchased and provisioned within days, sometimes within hours or even minutes. Once the organization has established a billing relationship with the cloud service provider, all of its employees covered under the relationship can immediately access the new collaboration technology.

Building collaboration capabilities internally is usually measured in months (or years for very large organizations), thus cloud collaboration services offer tremendous speed-of-access advantages.

**Flexibility to scale for changing situations:** Corporations change size through mergers and acquisitions. Government agencies take on new or diminished responsibilities in the ebb and flow of effective service delivery to citizens. And educational institutions expand their global footprint with new teaching facilities to attract more students or scale down departments because of budget concerns.

In each of these situations, collaboration capabilities can be extended or dialed down immediately. No one has to wait for new infrastructure to be purchased and built. No one has to sit on excess capacity and inactive infrastructure. The administrator of the cloud service merely increases or decreases the client's access, and those services are immediately scaled to an appropriate level.

**Offloading responsibility for maintenance and upgrades:** The cloud service provider takes responsibility for maintaining the collaboration infrastructure, for deploying minor upgrades and patches, and for planning the transition to major new versions. These issues become someone else's responsibility, and the organization doesn't have to think about it. As long as

they remain in good standing on the billing side, the enterprise continues to receive the services they have paid for without having to plan a maintenance strategy.

**Changing focus of in-house IT staff:** When collaboration capabilities are purchased and deployed internally, there is a large staffing requirement that goes along with that. New coworkers may be needed with specialist IT skills in setting up, maintaining and troubleshooting the technology.

With cloud-based services, staff with these skills work for the cloud service provider. This means that organizations can refocus their recruitment efforts on people who, rather than building and maintaining the technology, can apply it to pressing operational problems.

## Ideal Cloud Scenarios

Cloud-based collaboration services have wide applicability for organizations. But there are certain situations or circumstances in which cloud-based services are particularly useful, such as the following.

### Initiatives involving cross-organizational collaboration:

Multiple organizations in a collaboration initiative together creates problems for using the in-house collaboration capabilities of any one organization. The IT, security and approval processes for giving external users access to internal IT systems is usually too complicated.

But with a cloud-based collaboration service, that issue becomes moot. Everyone gets an account on the service (which is owned by none of the organizations), and capabilities such as presence and instant messaging work easily without requiring directory and presence federation.

**Organizations undergoing rapid change:** In times of rapidly changing organizational boundaries and staffing numbers, cloud-based collaboration services are a great fit. It's simple to give access to new business units and employees, and it's equally simple to remove access from others.

There is no waiting for new infrastructure to be built. People can get on with their work immediately.

**Organizations with multiple small offices:** When most staff are centrally located in a single building or campus environment, on-premise collaboration technology probably makes the most sense. In-house IT experts can provide both the support and training required.

But when employees are widely distributed across office locations, geography and time zones, a cloud collaboration service might be best. As long as workers have sufficient Internet access capabilities, they can work effectively using the cloud-based service. Opening a new office doesn't require the installation of onsite collaboration technology.

## Cloud Collaboration Concerns

Acquiring collaboration capabilities from a cloud-based service provider is not without its challenges. Organizations need to ensure that these downsides are appropriately mitigated when placing high reliance on a cloud-based provider. Specific issues to analyze include the following.

**Security and data privacy:** Ensuring that organizational data is stored with appropriate security is paramount with cloud collaboration. Unauthorized access to corporate trade secrets, constituent data or student personal information can undermine an organization's initiatives and reputation.

**Reliability of Internet access:** Maintaining high availability of Internet access is critical when collaboration capabilities are sourced from a cloud-based provider. Without Internet access, people can't work with far-flung colleagues. Working with good telecom providers is a strategic necessity, and offering multiple or redundant access methods may become necessary if Internet access is regularly compromised.

**Exit strategy following a service provider failure:** When choosing a cloud-based collaboration provider, don't skimp on every penny. It's critical to identify a provider with sufficient resources for being a long-term partner, because a failure of their business could deal a significant blow to the organization. When cloud collaboration vendors fail – and many have already – organizations are often left in limbo without access to their repositories of knowledge, expertise and collaboration know-how.

Cloud collaboration is still developing, but its future looks bright. The advantages are significant, and as the downsides recede over the coming years, an increasing number of organizations will shift to sourcing their collaboration technology capabilities through the cloud.



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