CDW PEOPLE WHO GET IT

SPECIAL DELIVERY: UC COLLABORATION IN THE CLOUD

How cloud-based collaboration technologies help optimize performance in today's knowledge-centric world

Executive Summary

Organizations once depended primarily on material resources, internal workers and physical distribution to accomplish their goals. Today, success has become contingent on knowledge-based innovation, social networks and digital channels.

To ensure the timely, effective exchange of ideas and insights, enterprises must facilitate anytime, anywhere collaboration within and beyond their physical walls. Essential enabling technologies include instant messaging, "follow me" telephony, on-demand web conferencing and more.

Organizations also must be smart about how they implement these technologies. Conventional in-house deployments are less attractive to enterprises that have limited capital budgets to invest in new IT solutions and limited staff resources available for managing and maintaining those solutions over time.

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Fortunately, the cloud offers a highly compelling alternative for deployment. With cloud-based unified communications (UC) and collaboration tools, such as Microsoft Office 365 and Lync Online, IBM SmartCloud, Google Apps, and CDW Cloud Collaboration, organizations can quickly implement the capabilities they need while avoiding large capital expenditures.

They also can offload the headaches of ongoing technology management and maintenance to a service provider of their choosing. Just as important, cloud-based solutions make it much easier to securely and adaptively extend collaboration to an ever-changing cast of outside contractors and partners.

Simply put, cloud-based collaboration offers many powerful and unique ways to significantly improve both processes and outcomes with minimal cost, effort and disruption.

Decision-makers at all levels must therefore determine how to best leverage available cloud-based collaboration to optimize their organization's performance in a world of fast-paced innovation, rapid market change and relentlessly escalating customer expectations.

Why Collaboration? Why In the Cloud?

Studies show that effective collaboration has a significant positive effect on multiple aspects of organizational performance. These aspects include:

- **Productivity:** When people don't waste their time playing phone tag or waiting for answers from others, they can be much more productive. Effective collaboration also ensures that employees and contractors have more reliable and timely access to accurate, up-to-date and complete information. This improved access enables them to more consistently get things done right the first time.
- **Customer experience:** Customers don't like to get different stories from different people in an organization. They also don't like to have to explain their situation again every time they talk to someone new. And they don't like waiting on hold when all they need is a simple email or chat exchange. By streamlining communications between workers and customers, effective collaboration helps eliminate these common frustrating experiences.
- **Risk:** Organizations are constantly exposed to regulatory, legal, financial and reputational risks because people act without the right information or the right approvals. Good cross-organizational collaboration substantially mitigates these risks by making it easier for employees and contractors to validate their actions before taking them — and for managers to give their staff and contractors appropriate direction on an as-needed basis.

For these reasons and others, every organization should take full advantage of the latest advances in collaboration technology as part of its overall strategy to optimize performance.

Cloud Clout

The next questions decision-makers need to consider are how to best acquire and implement the collaboration and communications tools their organizations need. Here is where cloud-based technology offers an extremely compelling value proposition. What follows are common benefits that, depending on the situation, an organization might expect to gain from a cloud-deployed collaboration solution.

Little or no capital expenditure: Cloud providers enable organizations to implement new, highly useful collaboration technologies without having to make large upfront capital expenditures for software licenses, new hardware and the labor it requires to install and configure them.

Instead, enterprises can leverage a service provider's existing infrastructure and pay for solutions on a subscription basis as an operating expense. Expenses tied to upgrades also disappear, as providers automatically upgrade their offerings to clients at no expense to them.

Rapid time-to-benefit: Conventional deployments can take weeks or months before new collaboration tools are properly installed and configured. Cloud-based solutions, on the other hand, can be ready to use within hours. This rapid deployability also means that cloud solutions more readily lend themselves to efficient proof-of-concept pilots that allow decision-makers to fully verify the value of a new collaboration tool before green-lighting a rollout across the entire organization.

Offloaded management and maintenance: Under the cloud model, all ongoing management, maintenance and upgrading of software, servers, storage and other solution components is offloaded to the service provider. This allows organizations to augment their technology portfolios without having to hire new staff. It also allows their IT staff to stay focused on high-value tasks, rather than routine technology upkeep.

Adaptive alignment of cost and capacity: With in-house implementations, enterprises can't easily keep their costs and capacity aligned with their current needs. Either they overspend on excess licenses and infrastructure to ensure their ability to accommodate possible growth in demand, or they wind up unable to meet that increased demand when it occurs.

This conundrum disappears with the cloud because organizations can simply add or subtract from their subscriptions as necessary to keep their costs and capacity tightly aligned with their needs over time.

Easier, more secure extension of collaboration tools: To extend conventional, internally deployed collaboration systems to mobile users, home-based workers and external contractors, IT departments have to do a number of things that cost money, take time and potentially expose an enterprise's core systems to new vulnerabilities. Cloud-based systems present none of those difficulties, because anyone logging in from anywhere is authenticated and given access to collaboration resources in the same secure manner.

Better service levels: Internally deployed collaboration systems are among the many diverse technologies for which internal IT staff members are responsible. These diverse responsibilities limit the speed and skill with which IT staff members can respond to any issues that arise with an organization's collaboration environment.

What Is the Cloud?

Cloud is a catch-all term that refers to a variety of increasingly popular ways to implement software and technology services. The cloud metaphor has its roots in the image that engineers have historically used to depict data networks. That metaphor has been adapted to describe solutions that are accessed via a network rather than being tied to specific physical servers.

Generally speaking, organizations can make use of three types of cloud implementations: public, private and hybrid.

Public: Public-cloud solutions are managed by service providers who deliver them to customers via a secure Internet connection. Many public-cloud services are multitenant, meaning the provider runs the solution in a shared environment, partitioning each customer's data to ensure security. Others are single tenant, which means that customers have their own dedicated instance of the solution. Some experts don't consider single-tenant services to be part of the cloud at all and instead refer to them as simply "hosted."

Private: Enterprises can build private clouds within their own data centers by running applications on virtual servers that may reside on any number of available physical machines. This allows them to quickly add or reduce the physical capacity allocated to any given application based on demand and performance requirements. Some experts consider an environment to be a true private cloud only if this dynamic allocation of physical capacity is done automatically.

Hybrid: With hybrid clouds, organizations mix and match public- and private-cloud resources based on technical and business requirements. For example, an organization may run an application primarily in its private cloud, but tap into public-cloud resources during periods of peak demand. Or it may run an application primarily in a public-cloud environment while keeping some data relating to that application in its private cloud for compliance reasons.

Cloud service providers are in a very different position. Their technical staffs are highly specialized in the technology solutions they offer. Plus, their business depends on subscription renewals — which, in turn, depend on keeping their clients happy. Cloud service providers are therefore better able and more motivated to deliver a higher level of service.

The bottom line is that cloud-based collaboration offers an exceptionally fast, simple and cost-effective way to acquire practical communication capabilities that have already transformed both individual and organizational performance. Rarely are technology decision-makers presented with such a compelling opportunity to achieve substantial benefits with such minimal investment, effort and risk.

Cloud Collaboration Tools

Organizations can choose from a broad range of collaboration tools available under the cloud model, building their own collaboration portfolios based on their particular objectives and priorities. The following section briefly describes these tools and organizes them into three main categories: collaboration, telephony and conferencing.

Collaboration

Presence: This is a foundational technology for collaboration. It detects the status of participating individuals and communicates that status to authorized users.

With presence awareness, people can quickly see if someone they are trying to reach is available now, temporarily busy, in "do not disturb" mode or off the network altogether. This awareness allows people to find others who can answer their questions immediately — and avoid waiting needlessly for a response from someone who is not likely to reply in a timely manner.

Chat/instant messaging: Chat enables people to quickly communicate with others via typed text from desktop PCs and mobile devices. In an organizational context, chat/IM is enhanced with presence awareness and appropriate security. Chat tools can also make it easy to exchange files and resource links as part of a real-time chat conversation.

Social media: Facebook, Twitter and LinkedIn can be used by organizations to connect with customers, build brand recognition and recruit new talent. However, it is important to put appropriate controls in place so that workers only use these media in ways that conform to organizational policies.

Enterprise social software: Enterprises often find it useful to deploy social software–like tools within their closed, secure networks. These tools include:

- Blogs, which make it easy to communicate new developments to internal teams and selected external partners

- Wikis, which effectively aggregate and publish the subject-matter expertise of multiple authorized contributors
- Facebook-like "walls," which allow ongoing discussions and information-sharing about specific topics
- Social search/tagging, which lets people add keywords, descriptors and ratings to documents and other content so that the best information resources in the organization also become the easiest to find

Group calendars: Collaborative calendaring has become an essential tool for scheduling meetings, coordinating travel and otherwise ensuring that people have sufficient visibility into the activities of anyone they need to work with.

Telephony

Mobile voice access: Mobile voice access enables employees to use their mobile phones in the same way they use their desk phones. This allows them to move an active call between their mobile and desk phones without interruption. It also enables them to transfer someone with whom they are speaking on their mobile phone to a colleague's office extension.

In addition, calls can be routed from users' mobile phones over the organization's IP network — which, depending on the reach of that network, can be very economical for long-distance, out-of-network and overseas calls.

Single number reach: SNR combines mobile voice access and presence to route calls to whichever phone a user prefers at any given time. This eliminates the need to call one phone number, leave a voicemail and then call a second number in an attempt to reach someone.

Unified inbox: A unified inbox eliminates the need for workers to constantly check multiple locations for their latest messages. Instead, they can find all their voicemails, emails and missed chat messages in a single, well-organized repository. This saves time and reduces the chances of missing a critical message. It also makes it easier for users to retrieve important information from the past, since many people save important information from others in their inboxes.

Digital integration: Organizations gain many benefits from the integration of their voice telephony with the rest of their collaboration environment. For example, with this integration, workers typing to each other in a chat session can initiate a voice call with a single mouse-click. They can also click on a user's name in a document or wiki article to quickly call that person on the phone.

Conferencing

Audio conferencing: Key attributes for effective audio conferencing include ease of use (including a simple, intuitive way to select and invite participants), good voice quality, and complete call management functions such as muting, secure authentication and record/archive/playback controls.

Video conferencing: This technology greatly enhances team communication and collaboration by adding the significant meaning of facial expressions, hand gestures and other visual cues to the conversation. The types of video conferencing available today range from simple desktop tools to high-end telepresence systems that allow participants to feel as

Top Cloud Collaboration Solutions

Fully developed collaboration suites are available from a number of top vendors.

Microsoft Office 365: This is a cloud-based version of the very popular personal productivity suite, which includes Word, Excel, PowerPoint and OneNote, that users can access from up to five different devices. Because files are stored in the cloud, users can easily work with and share documents wherever they are. Microsoft Office 365 also provides features, such as secure project-specific websites, that make it easy for teams to collaborate on documents, coordinate schedules and assign tasks.

Microsoft Lync Online: This is a cloud-based service that provides essential UC capabilities such as presence, instant messaging and multimedia conferencing through a consistent, intuitive user interface. Users can make voice calls through Lync to anyone who uses either Lync or Skype. Lync also provides productivity-enhancing capabilities such as whiteboards and screen-sharing.

IBM SmartCloud: This is an enterprise-class collaboration platform that includes email, calendaring and web meeting capabilities. It also delivers powerful social business functions that allow organizations to create secure internal Facebook-like "walls" for keeping workers up to date on important information about their projects, teams, departments and customers — as well as organizationwide news.

Box: This is a simple, scalable and affordable solution that lets enterprises manage content, share documents and sync files on the desktop. It lets users collaboratively organize files in a familiar folder structure, turning those folders into online workspaces where users can collaborate with others inside or outside the organization. Its intuitive interface makes it easy for users to find content, edit and post comments on documents, track file versions, and manage tasks, such as reviewing and approving files.

Google Apps: Google offers a variety of affordable and easily accessible online tools for collaboration. Gmail, its flagship solution, includes chat and video, as well as other useful tools for tracking interactions with project teammates over time. Google Apps also includes tools for team calendars, shared document repositories and secure collaborative web workspaces. In addition, Google provides mobility tools such as Quickoffice, which enables users to perform tasks such as editing documents from their Android or Apple devices.

though they are actually in the same room as remote conference participants.

Web conferencing: Web conferencing allows users to share the display on their computer screens, including documents, presentations, web browsing sessions and active software programs. This makes it useful for everything from collaborative editing to online training.

Multimedia conferencing: Multimedia conferencing is the ability to mix and match the above conferencing types, along with streaming video. So a multimedia conference could, for example, include a streaming video in the middle of a slideshow presentation, followed by a live, interactive question-and-answer session.

Enterprises don't necessarily have to provide all these collaboration tools to every worker. SNR, for example, may be most appropriate for outside salespeople (or direct outreach staffers) and key executives. Social media capabilities, on the other hand, may be more important for marketers and product designers.

Integration between these tools, however, is important. As noted earlier, launching a voice call from within other collaboration tools can be very useful. It is also helpful to be able to, for example, select the participants from a meeting in a shared calendar and invite them to a multimedia conference session.

Most important, collaboration tools must be easy to implement, easy to use and cost-effective to operate. These qualities help ensure that an organization gets maximum value from its investment in collaboration technology.

Optimizing Collaboration Deployments

While a cloud deployment has some obvious benefits, it is not for every situation. Keep in mind that there are two basic options in deploying collaboration tools: on-premises and the cloud. This is not an all-or-nothing choice. Some tools can be deployed in the cloud, while others might be better deployed on-premises. Some tools may even be deployed under hybrid models that combine elements of on-premises and cloud deployment. Understanding the differences between these two options is the key to choosing the right deployment option for each tool.

On-premises

Under an on-premises model, a tool is installed on an enterprise's own IT infrastructure. The organization is then responsible for all aspects of the tool's deployment and ongoing operation, although these responsibilities can be offloaded to a service provider capable of executing the initial installation and supporting the on-premises environment over time.

Requirements associated with an on-premises deployment include:

- Capital costs for software licenses and all supporting hardware, including servers and storage
- Operating costs for managing and maintaining the supporting hardware, monitoring and troubleshooting performance, securing access to the tools and associated content, performing software upgrades and more
- Provisioning additional capacity required to meet growth
- Provisioning backup/failover systems to ensure that normal operations can continue even in the event of an IT infrastructure failure, power outage, natural disaster or other potentially disruptive event
- Maintenance of appropriate skills and expertise in-house (except to the extent that support is provided by a qualified outside IT contractor)

Cloud

Under a cloud-based model, organizations access a tool running on a service provider's existing IT infrastructure via a secure Internet connection. This eliminates the capital costs, time, effort and skills associated with on-premises deployment.

The cloud service provider also manages the tools and their supporting infrastructure on an ongoing basis, relieving the organization of all operational burdens. The enterprise simply pays a subscription fee for access to the tool on a monthly basis, with the subscription cost determined by predefined parameters such as the number of users, volume and activated features.

CDW Cloud Collaboration

CDW offers a complete cloud collaboration solution that includes desktop and smartphone softphone functionality, basic or advanced call control capabilities, presence, instant messaging, video conferencing, single number reach and more.

CDW Cloud Collaboration leverages Cisco's popular technology foundation and runs in CDW's state-of-the-art data center, which is the eighth-largest facility of its kind in the world.

Security is maintained with dual-factor authentication — and unmatched support delivers the level of service organizations require. CDW can also manage collaboration resources implemented by an enterprise in-house if a hybrid-cloud solution is needed.

Cloud service providers can support their tools very cost-effectively because of economies of scale and because they typically specialize in a specific set of technologies — as opposed to internal IT staffs, which typically have to support the very diverse technologies that organizations accumulate over the years.

Economies of scale and tool specialization also enable cloud service providers to more efficiently provision processing capacity, storage, redundancy, failover and security for their collaboration tools. Plus, because all cloud users are remote users, a cloud service provider can offer secure access to any authorized person with equal ease, whether that person is an employee or an authorized contractor onsite, at another location or on the road.

Decision Factors

Given these two alternatives, organizations should weigh a variety of factors when deciding whether to deploy their collaboration tools in-house or in the cloud. These factors include the following:

Capital resources: Enterprises with limited capital resources or with other projects requiring intensive capital investment may choose to avoid capital spending by adopting a cloud-based collaboration solution.

Staff resources: Organizations may opt for a cloud solution in order to avoid burdening their limited internal IT staffs with additional responsibilities.

Variable or unpredictable demand: Enterprises that may have to support occasional spikes in demand or that cannot accurately predict future demand may opt for a cloud solution in order to ensure ready access to additional capacity if and when required.

Compliance mandates: Organizations may be constrained by regulatory mandates to keep certain types of information within their on-premises data centers. On the other hand, some organizations (such as federal agencies) may be mandated to move some of their systems to the cloud.

Cost visibility: Enterprises that require their collaboration tool costs to be highly visible and predictable may choose the cloud's subscription model over an on-premises implementation, which can make the true cost of service delivery difficult to calculate.

Location independence: Organizations that need to support users over a broad geographic area, that need to be able to set up new locations quickly (for instance, construction and retail), or that need to be able to rapidly restore operations at another location in the event of a disaster may find the cloud's location independence particularly appealing.

Migration Steps

The migration path to advanced collaboration will vary depending on both an enterprise's current state and its target objectives. Organizations that have lagged on the trailing edge of technology over the years have further to go than those that have kept pace. And those seeking to achieve true state-of-the-art collaboration capabilities will have to do things that those with more modest ambitions do not.

Nonetheless, all enterprises must consider certain steps as they plan their collaboration technology roadmap.

Championing, Leadership and User Acceptance

One foundational step in any successful migration to advanced collaboration isn't technical but organizational. Collaboration tools affect the way workers do their work every day, and many people instinctively resist change. So a successful collaboration initiative will address these organizational and human factors from the outset in several ways, including the following:

Executive-level championing: To ensure the success of a collaboration initiative, executives have to do more than just approve some technology spending. They also have to be willing to put their authority and influence behind the effort — and to endorse it as a strategic priority.

Strong project leadership: Because collaboration requires effective orchestration of multiple "moving parts" (including software, telephony, networks, cloud vendors and users themselves), it is important for leaders of this kind of initiative to have strong project management skills, in addition to a good understanding of the underlying technologies. Leaders of collaboration initiatives often find project management tools helpful in ensuring they hit project milestones and appropriately prioritize critical-path tasks.

User acceptance: User acceptance of collaboration requires more than just an initial memo from the executive champion. It also requires ongoing communication with employees about what is being done and why. Ultimately, it also requires the initial training and support necessary to get users over any learning curve they might experience, no matter how small.

Robust, Converged Network Infrastructure

For users to seamlessly collaborate across multiple communication media (including data, voice and video), an organization must have a robust, converged network. In a converged network, all those communication media are carried over the same set of wires and devices. A robust network has the capacity and performance to ensure the quality of those media.

For example, an enterprise's network may deliver adequate performance for common data applications such as email and Microsoft SharePoint. These applications, however, are not sensitive to relatively slight variations in network performance.

Voice, in marked contrast, is very sensitive. In fact, variations in the speed with which a network delivers the digital packets carrying the sound of a human voice from one endpoint to the other (known as "jitter") can result in an unsatisfactory user experience. Dropped packets, another common condition that most data applications can tolerate and correct for, can also adversely affect the sound of the human voice over the network.

Video can pose challenges to a network too. Like voice, it requires packets to be delivered from endpoint to endpoint consistently in real time. On top of that, video traffic can also consume considerably more network bandwidth than either data or voice communications.

Given these considerations, organizations that are upgrading their collaboration capabilities should ensure that their network can adequately support all communication media. This kind of network upgrade typically entails:

- An assessment of the current network performance baseline, including a mean opinion score (MOS)
- Upgrades of networking gear as needed to achieve required service levels
- Implementation of appropriate network management and monitoring tools to safeguard network performance on an ongoing basis

VoIP Telephony

Once an enterprise has made any necessary enhancements to its network, it can then implement voice over that network. This is known as Voice over IP (VoIP), because most of today's data networks are primarily designed to run the Internet Protocol (IP).

Many organizations have already moved to VoIP. Those that have not are typically using older analog phones on workers' desks in conjunction with conventional public branch exchange (PBX) systems or central exchange (Centrex) services from a telecom carrier for call management functions. These organizations should switch to IP-based phones and digital PBXs as part of their move to more advanced collaboration.

The ability to better integrate voice communications with an enterprise's broader portfolio of IP-based communication media and software applications is just one benefit of the move to VoIP telephony. Such a move can also help organizations reduce their overall telecom costs by taking greater advantage of new IP-based service provider offerings and by routing calls over their own wide area networks.

Unified Communications

With the right network infrastructure and a well-designed VoIP system in place, an organization can complete its journey to advanced collaboration by implementing unified communications.

UC refers to various collaboration tools and, just as important, their integration with each other. The extent of this integration will vary, depending on the objectives of the enterprise. In the most basic scenario, these tools share a common directory so that the contact and presence information about any worker is identical for chat, phone, video conferencing and other communication media. A common directory also helps to ensure consistent security policies across all tools.

In more advanced scenarios, tools may be further customized and integrated with each other. For example, integration with an organization's human resources database may allow users' team, department and line-of-business directories to be automatically updated whenever there is a change in personnel. Similarly, UC tools may be integrated with an enterprise's contact center application to facilitate communication with specified subject-matter experts.

CASE STUDY

Read how some enterprises are reaping benefits from collaboration tools: **CDW.com/cloudcollabo1**

As organizations achieve their initial collaboration goals, they are best served by continuing to set new ones. The demands of customers, constituents, markets, stakeholders and partners are escalating relentlessly. Enterprises must respond by being just as relentless about continuing to improve the efficiency, quality, breadth and scale of their operations.

Collaboration can contribute significantly to these desired improvements, so even organizations that achieve comparatively advanced collaboration capabilities will want to build on those successes, rather than succumb to complacency.

Collaboration transforms enterprises in many positive and powerful ways, affecting the productivity of workers, the ability of people to make smarter decisions, the speed and frequency of innovation and the quality of the customer (or end user) experience.

With the advent of the cloud, these benefits are more accessible than ever. That's why every decision-maker charged with promoting organizational success should carefully evaluate the options now available for cloud-based collaboration, share the results of that evaluation with other key stakeholders and move quickly to put those findings into action.

CDW: The Right Partner

One of the best ways to ensure a successful move to cloud collaboration is to engage with an experienced, expert partner. The right partner enables an organization to:

- **Optimize outcomes** by leveraging technical and business knowledge gained from multiple previous projects
- **Accelerate time-to-benefit** by applying proven project management best practices and eliminating the need to "reinvent the wheel"
- **Reduce costs** by bringing appropriate discipline to scope, licensing, manageability and other key considerations

CDW is the ideal partner for any organization seeking to transform its performance with today's breakthrough cloud collaboration solutions. CDW has unmatched technical expertise in solutions from industry leaders such as Cisco, Microsoft, IBM, Google and Box — as well as experience in integrating these solutions with the technologies that organizations already have in place. CDW can also add significant value in the other aspects of migration, including needs analysis, network baselining, financing and support.

CDW's solution architects and advanced technology engineers have been designing, implementing and managing technology, communication and security solutions for growing businesses, leading universities, healthcare providers and all branches of the government for nearly 30 years.

For more information or to speak to an experienced cloud collaboration specialist, visit CDW.com or call 800.800.4239 today.

Flexibility, Agility, Efficiency

People need access to the best tools regardless of where they are or what device they are using. The Cisco Collaboration Cloud portfolio offers the flexibility, agility and efficiency benefits of cloud without compromising the rich experience and comprehensive portfolio of on-premises deployments.

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