



(From right)

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MAKING THE CALL

CDW EMBARKS ON AN AMBITIOUS UNIFIED COMMUNICATIONS OVERHAUL DESIGNED FOR ADDED RESILIENCY, DISASTER RECOVERY, AND A RICHER SET OF FEATURES AND CAPABILITIES.

TO SERVE CUSTOMERS BETTER WHILE INCREASING productivity and reducing costs, scores of companies are moving past Voice over IP (VoIP) and chat to the concept of unified communications (UC). Here, application suites seamlessly integrate voice, e-mail, presence, instant messaging (IM) and video, along with mobility, to enhance communication and speed the flow of every business activity.

This type of intelligent communication and customer service may sound complicated and virtually impossible. However, it's a reality today at CDW, thanks in large part to a comprehensive unified communications system based on Cisco technology.

"The goal is much more than an upgraded call-routing system," explains CDW CIO Jon Stevens. "It's about empowering our coworkers with a best-in-class unified communications strategy that brings voice, customer information and our sales portals together into a combined tool.

"That way, when one of our account managers answers a call, they already know why the customer is calling, what they have previously bought from us, what they are trying to achieve and what they might need. The goal is being a truly informed sales force, customer service group and services team."

With its highly defined unified communications strategy, CDW is well on its way to achieving that vision. CDW's internal team, led by Stevens, has spent the past two years working with Cisco engineers and its internal services team to determine and implement what it would take to make the vision a reality.

Communication Foundation

Unified communications consists of an assortment of real-time communication capabilities. Instead of one solution, it's made up of a set of products geared to offer a consistent user interface and experience across multiple communication channels and devices. Because of its modular nature, UC is often implemented gradually. Such was the case at CDW.

CDW is a leading provider of technology solutions for business, government, education and healthcare. Based in the Chicagoland area with 25 offices in the U.S. and Canada, the firm features dedicated account managers who help customers choose the right technology products and services to best meet their unique needs – thereby making a strong case for highly effective communication systems.

The company began laying the UC groundwork about seven years ago, when it first implemented VoIP, providing “find-me, follow-me” technology for its workers. The system worked well but was limited in scope, and upgrades required engineers to fly to each CDW location to perform the necessary work.

A few years later, the firm added to its nascent communications infrastructure by implementing Cisco Unity. The enterprise-ready unified messaging solution allowed staff to access e-mail, voice and fax messages from a single inbox.

But attaining the type of ubiquitous presence and responsiveness CDW IT chiefs envisioned required much more than just VoIP and unified messaging. The existing VoIP system, for example, didn't take advantage of newer technologies like SIP trunking, which could provide numerous benefits,

including business continuity and disaster recovery enhancements.

Making major changes meant overhauling the entire communication infrastructure with state-of-the-art technology that not only would create unified communications, but would position CDW well for the future. The timing turned out to be fortuitous; although the firm's existing communications platform had served well for many years, it was rapidly reaching end of life, and the vendor would no longer support it.

Unifying Communications

The UC process began with a discussion of how best to achieve CDW's goals. The core decision-making team ultimately chose to engage CDW's Advanced Technology Services (ATS) team – the same team that provides full lifecycle technology services and IT consulting to CDW customers.

“Our customers don't make these types of infrastructure investments every year and neither do we,” Stevens says. “So it was a given that we work with our internal Advanced Technology

UC: THE GIFT THAT KEEPS ON GIVING

When deployed intelligently, unified communications (UC) can make a significant difference in productivity and customer satisfaction. By integrating all communication tools under one umbrella, UC can remove much of the latency created by human delay, improving customer service as well as collaboration.

However, achieving those benefits requires more than just technology. The success or failure of a UC initiative depends as much on the processes surrounding the technology as it does on the technology itself.

“Much of the value of unified communications comes from the company evaluating processes and figuring out where the communication lags exist,” says Zeus Kerravala, principal analyst at ZK Research. “After they do that, they will better understand whether to build the tools directly into the application or augment processes with the tools, and they will know how to train and promote them to employees.”

As the technology continues to mature, Kerravala says companies will gain even more benefit from unified communications. While voice, presence, chat, unified messaging plus audio and web conferencing are the basic building blocks of a UC system today, other functions are maturing rapidly.

One area of rapid growth is social media. Kerravala says the possibilities are vast, both in terms of collaboration and presence.

“If I was to tweet or post on Facebook that I was headed to lunch, UC solutions should be able to recognize that screen and route all calls to my mobile phone and click my presence status to unavailable,” he says. “There is no reason why that can't be done today; it just needs to be integrated.”

Another area where UC systems are still maturing is video. Kerravala says video is too difficult to use today, and it won't take off until it's better integrated and easier to use.

That will happen over time, he says, with more interoperable video, and as companies begin to understand how to better insert video into business processes. For example, in addition to the click-to-call capabilities available today, click-to-video will also be available.

/// THE COMPREHENSIVE CDW UC SYSTEM IS BASED ON CISCO TECHNOLOGY. ///

Services team – a group that does these types of telephony build outs on a regular basis – day in and day out.”

The CDW UC migration began in earnest during August of 2010. “With every engagement, we go through a design phase that helps us solidify and understand what technical capabilities are available,” explains Senior Engineer Manny Chanthasene, who works in CDW’s ATS division. “Then, we can close the gaps with what is required to meet expectations.”

After understanding organizational needs and requirements, CDW’s internal IT team, its ATS division and Cisco recommended Cisco’s Unified Communications Manager or UCM. Formerly known as Cisco Unified CallManager, the solution offers a single unified communications and

call control platform for voice, video, mobility and presence services.

Also recommended was Cisco Unified Contact Center Enterprise (UCCE), designed to deliver skills-based contact routing, voice self-service, computer telephony integration (CTI) and multichannel contact management. Both solutions were selected largely because of Cisco’s reputation and its plan to continue investing in the platform over time.

CDW’s internal IT team first worked with Cisco to develop the framework. Once completed, CDW’s ATS team was tapped to do the implementation. Cisco, along with CDW’s ATS team and internal IT team, worked together to finalize the design, bill of materials, business analysis, process flows and proposed implementation plan – assuring the final project would meet identified expectations.

Involving CDW’s ATS team at such an early stage proved to be a good decision.

“Telephony is a cornerstone of unified communications, and the Cisco telephony solution relies on other services like Active Directory and Microsoft Exchange,” explains CDW Senior Manager of IT Infrastructure and IT Operations, Nick Schmidt. “Each of these pieces had to be included in the workflow for this project. But

each was a separate activity requiring engagements from engineers from various teams to ensure that all of the pieces worked well together.”

Once the architecture was completed, the team then went to work upgrading the network to make sure it could handle the demands that would be placed on it. Because voice traffic would now run across the network, bandwidth was a particular concern, especially in remote offices. That required not only increasing bandwidth, but making sure it was redundant.

In addition to bandwidth, the team upgraded some circuits and switches. To enable SIP trunking, several OC3 lines were added to allow for the number of phone lines CDW expected to need at a given time.

Once the network upgrades were complete, the team decided to upgrade each individual CDW office building to the new infrastructure in a single weekend. Although it would undoubtedly be a busy weekend, it was the only way to ensure that our ability to route calls and manage contact centers wouldn’t be unduly affected, notes Mike Pflieger, CDW senior director of IT operations.

The team started with the CDW office building located in Toronto. This was followed by the four buildings in Illinois and so on down the line. The final office building was completed in March 2012.

Reaping the Benefits

Today, CDW’s Cisco UC infrastructure is adding resiliency, disaster recovery capabilities and a richer set of features. In addition to the capabilities, management is much easier, due in part to integration into the network stack.

“Before, we had call managers linked to each office, so we had a big stack infrastructure in each location that had to be managed – mostly remotely,” Pflieger explains. “To implement upgrades or patches, we had to send IT staff into the field. Now it’s all centrally managed with added resiliency to the telephony infrastructure.”



It's also partly due to the addition of SIP trunking, which allows the company to consolidate groups of phone lines and reroute them to different data centers if problems occur. It also allows for more portability, both of phones and employees, and provides resiliency in the cloud.

"That's important because our business is very time-sensitive," Stevens says. "One hour of phone downtime can translate into millions of dollars in lost sales."

The new features also have made a big difference in how responsive sales managers can be to their customers. Garth Huckabay, CDW sales account manager, says that the ability of the new phone system to stack calls means he doesn't have to miss out on a potentially lucrative opportunity.

"I can take three or four calls simultaneously and manage how I want to handle the calls," he says. "That means I don't miss calls anymore. In our line of work, if you miss a call, you may have missed an opportunity."

The upgraded unified communications infrastructure also provides many benefits around business continuity. This is both in terms of redundancy – if systems go down – and for unplanned situations. Pflieger recalls one recent example:

"Our headquarters isn't far from Chicago. So when we discovered that the NATO, G8 2012 summits were going to be held in Chicago, we knew that many of our employees wouldn't be able to get to our downtown location," he says. "We made sure that all of the affected employees knew how to use the mobility feature to route their calls to wherever they were, so they could service their customers as usual."

Finally, the implementation of UCCE has streamlined the call center while improving operations.

"Before, we had a situation where everybody was considered a sales agent and could route calls to different people. As a result, calls bounced through the company," Stevens notes. "We addressed that issue prior to implementing this solution by creating an inbound team

UC CHECKLIST

Before diving into a unified communications project, keep these things in mind:

- ✓ Don't simply think about how a unified communications system will benefit your organization today. Instead, create a multiyear roadmap.
- ✓ A unified communications infrastructure can be complicated. Understand your strengths and weaknesses, and engage outside help in areas where you don't have enough expertise.
- ✓ Pinpoint your communication lags before choosing a solution.
- ✓ Spend as long as it takes up front to understand the impact the new system will have on existing processes, systems and network.
- ✓ Make sure to engage a partner with extensive expertise in both the technology and implementation of UC systems.
- ✓ Don't expect instant enthusiasm from employees; spend time explaining the benefits and training staff.

that takes those first calls. But now it's even more effective; we have less frustrated customers and more productive agents."

Moving Forward

Although CDW's unified communications solution is working well, the company is committed to pushing the envelope when it comes to customer service and productivity.

"We knew that implementing this infrastructure was only the first step on our roadmap," Stevens adds. "Now that we've achieved that goal, we can work on doing more around mobility, collaboration and other productivity-enhancing functions."

Next up may very well be enhanced video conferencing capabilities. CDW has already installed the Cisco TelePresence Video Communication Server (VCS), which integrates with its Unified Communications Manager, as well as VoIP and IP telephony networks. The next step will likely be to integrate video into the sales and contact-center functions.

"We are on our way to increasing our use of video so that from a desk, cell phone or telepresence room, staffers will be able to fully communicate using any medium that makes sense," Schmidt adds. "It's our goal to be able to use any medium to communicate. So I can start an instant message with someone, click a button to call, show them a document, see them face to face, and then find a third party using presence so we can have a three-way video call. It's not that far away at all." ■

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COLLABORATION: INTERACTIVE UPGRADE

DISCOVER THE ART OF CREATING EFFECTIVE SHARING ENVIRONMENTS.

ONCE UPON A TIME LIFE WAS SIMPLER AND MORE MODERATELY PACED.

Manufacturers obtained raw materials from a limited number of suppliers, workers performed repetitive tasks on assembly lines to mass-produce standardized products.

Government agencies provided a relatively fixed set of services to constituents whose expectations of these services were minimal. And educational institutions delivered curricula that were also relatively fixed to students who were pleased to attend the best school that would accept them.

Indeed, times have changed.

Today, companies dynamically reconfigure supply chains to minimize costs and ensure uninterrupted access to resources. They also have to respond adaptively to customers who might be across the globe or across town – and who expect products and services personalized to their individual requirements.

Government agencies are likewise asked to respond to constantly changing conditions and to satisfy constituents who expect services to mirror those experienced in the private sector. Educational institutions, meanwhile, must compete for students who have unprecedented choices of where and how they learn.

The result? The performance of

most organizations hinges increasingly on how rapidly people can share and act upon critical information.

Organizations that successfully facilitate the sharing of such information will consistently achieve better outcomes in a world dependent on fast, fact-based decision-making.

The set of functional capabilities necessary to rapidly share and act upon critical information can be collectively referred to as collaboration. Webster's Dictionary defines it as "the act of performing work or labor together."

In the context of IT, collaboration refers to technologies and practices that organizations can adopt to overcome impediments that limit the ability of people to work together effectively. Clearly, data, voice and video communications let people across and beyond an enterprise interact as necessary to make decisions, take actions, formulate plans and achieve goals.

Share and Share Alike

Several key attributes characterize effective organizational collaboration.

ACCELERATED INTERACTION:

Effective collaboration speeds teamwork and the sharing of information through a combination of real-time, near-real-time and non-real-time communications. Real-time communication occurs immediately among all parties. It might include

phone conversations, chat, text messaging and video conferences.

Non-real-time communication involves a delay between sender and recipient – as is the case with e-mail, voicemail and online resources such as wikis, blogs and document repositories. Some communications, such as chat and text messaging, occur in near-real time because users don't necessarily respond immediately to one another.

ANYONE TO ANYONE: Collaboration tools further remove "drag" from organizational processes by allowing anyone to communicate with anyone, as necessary. This means that everyone who needs access to phone, voicemail, e-mail and chat service (and the like) has it.

It also means that people have the ability to easily find other people in the organization with whom they may need to communicate at any given moment. Typically, some type of directory service provides the capability for people to find one another by name, department, job title, location or other attribute.

LOCATION INDEPENDENCE:

Such environments can overcome a growing problem for many organizations: the issue of geographic distance. People working for the same enterprise may be scattered across multiple locations, yet need to share information at any given time.

In fact, as organizations become increasingly virtualized (by making use

of outside contractors and other third parties to complement conventional in-house staff), effective collaboration with people at disparate locations becomes an operational necessity.

Demands on individual productivity, combined with the growing use of portable devices, means users are also increasingly mobile. They need (and want) to be able to collaborate whether they are at their desks, at another location or in transit.

SUPPORT FOR DIVERSE CONTENT:

Effective collaboration isn't just about putting people in touch with one another. It's about empowering them to exchange content they need to share. Sometimes that's merely a brief conversation. Other times, it could be a Word document or a PowerPoint presentation. In other instances, an organization's users may need to share within a context that requires the subtlety of human gestures and facial expressions.

EASE AND CONVENIENCE: Sharing, interaction and innovation, however, don't take place merely because certain technology tools exist. People are busy; they have their own work domains to worry about. So technology must make it as easy and convenient as possible to interact and share. The tools must be intuitive to use, provide features for communicating effectively and integrate well with one another.

Tools for Anytime, Anywhere

Although people can collaborate with all kinds of tools, the following three types of collaboration technologies are particularly important in anywhere, anytime environments.

PRESENCE: This technology automatically detects whether a specific individual is using a device on an organization's network. It may also detect other information about that person's availability status and let the individual post information about status manually.

• **Offline:** The user is not detected as present on any device anywhere on the network.

• **Offline with a specific status:** The user sets a status manually (for example, "on vacation" or "back Tuesday p.m.>").

• **Away or idle:** The user has only recently stopped actively using a device on the network.

• **Busy:** The user is on a device and actively using a communication feature such as voice or video conference.

• **Do not disturb:** The user is present but has manually set this status to avoid interruptions.

• **Online:** The user is detected as present and available.

• **Online with a specific status:** The user is detected at a specific location (for example, "at my desk" or "mobile in Atlanta") or sets a status manually (for example, "prepping for sales meeting" or "leaving at 2:30 today").

By making such information available to other users on the network, presence technology can facilitate effective interactions.

CHAT AND INSTANT MESSAGING:

Chat and IM let users exchange text messages in real time. Some people prefer to use the term "instant messaging" to refer to chat that is specifically enabled between known sets of users (also known as "buddy lists"). This differentiates IM from the kind of web-based chat found on Internet sites that supports open participation.

IM is extremely useful for rapidly exchanging small amounts of information and getting immediate acknowledgement from other parties. It can eliminate communication problems such as phone tag or the sending of a follow-up e-mail to confirm that a recipient received, read and is acting on an earlier message.

SOCIAL MEDIA: Social media platforms such as Facebook, LinkedIn and Twitter have dramatically demonstrated how communities of people can interact online to share ideas and manage actions collectively. Millions of users are now familiar with social media functions such as "liking" and "retweeting."

COLLABORATION SOLUTIONS OFFER MULTIPLE BENEFITS

- Reduce duplicate efforts
- Enable easy access to limited resources – anytime, anywhere
- Increase efficiency and effectiveness
- Reduce time to market and resolution of issues

Organizations can take advantage of these mainstream services in a variety of ways. This includes building relationships between internal groups and external constituencies, staying up to date or sharing information.

Internal Social Media

But these services are only one way to take advantage of social media for enhanced collaboration. Others include:

- **Blogs:** They can be especially useful for team leaders who want to regularly share guidance and insights with groups of internal or external "subscribers."
- **Microblogs:** They differ from blogs in that their content tends to be shorter and simpler – often just a sentence or two.
- **Wikis:** These informational websites allow multiple users to edit content from their web browsers. (Think Wikipedia.)
- **Social search and tagging:** They can also cultivate cooperation by adding a social component to the search and use of existing documents and information resources in digital formats. ■

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