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VIDEOCONFERENCING BEST PRACTICES: LEVERAGING THE VALUE OF A TOTAL SOLUTION

A Frost & Sullivan White Paper

"Partnering with clients to create innovative growth strategies"

TABLE OF CONTENTS

EXECUTIVE SUMMARY

As companies become more global and more virtual, executives are realizing the value of visual communications: Only by seeing the people they're working with can employees truly collaborate as though they are in the same room, even if they're continents apart. But as they deploy technology to allow employees to take advantage of video communications, IT managers must implement a total solution that will deliver the capabilities required by everyone in the enterprise. A solution-based approach is the only way to truly "future proof" investment: Companies can add new technologies or capabilities, easily and transparently, at any time, and with no disruption to the end-user experience, while maximizing ROI.

That requires a platform that enables management of the solution, network control and firewall traversal. A management solution is critical to ensure reliable, utility-like performance across geographies, infrastructure and endpoints; it includes scheduling, monitoring, automatic software updates and reporting—and when done right, it delivers true scalability, reliability, performance and easily quantifiable ROI. Network control is important for bandwidth management and authentication, as well as for enabling access and supporting features such as a unified dialing plan. And firewall traversal is crucial to enable video communications not only among remote employees, but also with customers, suppliers and partners located outside the organization.

Once they have this platform in place, companies can add the features and capabilities that their employees require at any time, including conferencing (using Multipoint Control Units, or MCUs) to connect multiple audio and video sites in one or more meetings; gateways for seamless voice and video connectivity between IP and ISDN networks, with complete feature transparency and performance; and recording and streaming, for easy content creation, distribution and compliance. With the right infrastructure, IT managers can then deploy the endpoints which best compliment the infrastructure and are best suited for specific applications, while ensuring interoperability from any vendor—an especially important consideration as employees spend more time collaborating with partners and customers from different organizations, whose technology they don't control.

Just as companies wouldn't initially focus on telephone handsets before deploying the platform and networks to support them, they shouldn't initially focus on video conferencing endpoints when it comes to evaluating or implementing video conferencing technology. Instead, they should deploy a total solution that lays down a foundational platform for management, control and performance. That, in turn, will support whatever features and endpoints they, and their end users, need—today, and in the future.

This whitepaper will examine the value of a total video conferencing solution, one that is built on a scalable, secure platform that supports all needed features and endpoints.

Management, control and firewall traversal are all critical for delivering high-performance video conferencing that works every time, across regions, networks and organizations. The paper also highlights two case studies to illustrate how deploying a total solution can lead to a successful video conferencing implementation.

VIDEO CONFERENCING: FINDING THE TOTAL SOLUTION

Video conferencing is seeing significant growth in the enterprise, and for good reason: It's the only real-time communications technology that allows people to see one another and interact as though they are in the same room, without actually having to be so. That's increasingly important in today's business environment, in which employees are dispersed across regions, nations and international borders, and yet still need to collaborate on a regular and productive basis.

As companies deploy video conferencing to suit their needs today and protect their investment for the future, they should consider implementing a total solution that delivers management and network control, firewall traversal and enablement of any and all endpoint devices.

Platform for Success

A total solution is one based on business needs, and which can seamlessly integrate into existing infrastructure, business tools and networks. Having such a platform in place is the only way companies can ensure their video conferencing solutions will serve all their enterprise users today, and into the future. Furthermore, a total solution must fit into existing investments, including VoIP, Microsoft Exchange and Office Communications Server and Lotus Notes and Sametime, as well as any other unified communications deployments companies may undertake.

As companies deploy more and different video conferencing solutions, they need to guarantee the technology works seamlessly with all endpoints, new and old, inside and outside the firewall. They need to make sure end users across the enterprise have access to all video conferencing systems, as needed, and that their experience is consistent, regardless of what type of endpoint they're using. They need to support both scheduled and ad hoc meetings. And all the while, they need to keep operating and support costs as low as possible, for maximum ROI.

Management & Network Control

All IT systems require management and control to work effectively, and video conferencing is no different. Deploying management systems as part of a total solution ensures the systems will work perfectly for every user, every time. Network control is important for bandwidth management and authentication, as well as for enabling access and supporting features such as a unified dialing plan.

Simply put, network monitoring and performance management tools let IT managers get an overview of the status of the videoconferencing network. Web based interfaces give administrators a central place from which to view and manage performance and availability, uncover the root cause of any performance issues, forewarn of potential problems, and troubleshoot any issues which may arise in real-time. Tools include fault discovery; diagnostics; fault management; and reports on network behavior, utilization, performance, and response times for all the components of a video network, including endpoints, bridges, gateways and other network components.

Included policy management features help managers set and enforce corporate policies for network and application access and for bandwidth privileges, to determine who or what gets priority, when. Best of all, network management tools can be used to help network managers better manage performance and capacity planning in a more cost-effective manner.

In today's global, 24/7 world, IT performance is critical to business success. Being able to manage and control video conferencing with centralized device management and provisioning, diagnostics and repair, and reporting capabilities is key to success.

Call processing and control must also be enabled to support a unified dialing plan and ensure call completion; intelligent processing to ensure the most cost-effective routing; bandwidth allocation to ensure all calls are supported in the most efficient way possible; and centralized management and permissioning, which is increasingly important in the age of unified communications.

Finally, a complete management solution must include scheduling capabilities, both on the user end (so that systems and rooms can be booked and invites sent) and on the back end (so that infrastructure resources are reserved, calls are automatically set up and can run long as needed, and so on).

Firewall Traversal

Now more than ever, companies must make it easy and cost effective for their employees to communicate and collaborate regardless of where they're located, or what network they're on. What's more, employees must be able to interact with people outside the organization, including partners, suppliers and customers.

Firewall traversal allows end users to hold visual meetings with suppliers, customers and each other over multiple networks—regardless of the technology deployed at each meeting site, and maintaining all the features and functionality the participants require. Indeed, when considering firewall traversal as part of a complete solution, companies must ensure that all meeting participants can leverage the features they're used to having as part of their visual communications experiences—regardless of who they're interacting with, and from where.

Of course, open communications carries risk, which no company can afford to take. Therefore, a solution that works within the framework of your security policies is a requirement for any firewall traversal solution.

Future Proofing

Communications are changing at a remarkable rate, and we expect that trend to continue. As companies deploy Voice over IP and other IP-based communications technologies such as SIP, as well as Web conferencing, unified communications and a variety of video conferencing endpoints, they need to know that whatever technology they decide to implement in the future will integrate seamlessly with the technology they're using today. As IPV6 continues to be adopted globally to address the shortage of public IP addresses and "future-proof" the IP network, any consideration must include this important emerging protocol. Only a total video conferencing solution ensures that companies will protect their current and past investments as they make new technology choices down the road.

ADD-ON CAPABILITIES TO SUIT SPECIFIC NEEDS

Once they have a secure, scalable platform in place, companies can add on features and capabilities that meet their employee's particular needs. Such add-ons include conferencing (using Multipoint Control Units, or MCUs) to connect multiple audio and video sites; gateways for seamless voice and video connectivity between IP and ISDN networks; and recording and streaming, for easy content creation, distribution, and compliance.

With the right infrastructure, IT managers can also support endpoints at any remote location, from any vendor. This is especially important as employees spend more time collaborating with partners and customers from different organizations, whose technology they don't control. But it's also critical for companies that already have deployed video conferencing and want to build on that investment, and for those organizations that deploy new endpoints to more employees in the months and years to come. In all cases, companies need to know that the telepresence, room-based, executive desktop and PC-based systems they support can be integrated seamlessly into their environment.

Mobility

Today's employees are extremely mobile. Whether they're knowledge workers based in a remote office or regularly working from home, road warriors routinely on the go, or field employees working on site at production or retail locations, they all need to stay connected to co-workers, managers and direct reports. Video can help them do that, more effectively than other forms of communications. Organizations must therefore support mobile video communications, including wireless technologies where appropriate—and they need to do it on the same stable, secure platform that supports the rest of their video conferencing technologies.

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Furthermore, as employees become more mobile, moving around a corporate campus or among a variety of remote locations, reaching the person becomes more difficult. Find me/follow me capabilities make it simple to connect with people, so that calls are affiliated with a person, rather than a room or device. This gives users the flexibility and freedom to be reached where they want, when they want. In addition, a given employee can participate in meetings from anywhere, since the system will find him or her at the right location, every time.

Conferencing

Many video applications require the ability to connect three or more locations into a single meeting. Some applications, such as town hall meetings or large team gatherings, require a large number of systems to be connected simultaneously. As the number of participants grows, the types of networks and capabilities of each system will likely differ.

Multipoint Control Units (MCUs), enable more than two sites to participate in a conference using a centralized device within the network. Conferencing capabilities are easily and transparently added to a solution-based approach. Endpoint-agnostic MCUs are critical to ensuring that participants from multiple locations can collaborate with one another, without worrying about their respective endpoints or networks. Support for high-definition video is another important capability to consider when evaluating MCUs, as high-definition endpoints have now become the norm rather than the exception.

Any multipoint solution should ensure that each participant always enjoys the best experience possible. The addition of a participant using a web cam or placing a call on a less than ideal network should not "drag down" the entire conference.

Continuous presence (the ability to display multiple sites on the screen at one time) has become an expected capability in multipoint bridging, in standard as well as high-definition conferencing. Optimally, each user should be able to select the continuous presence layout he or she prefers.

For applications or installations anticipating substantial future growth and requiring the utmost in reliability, an MCU with a fully redundant architecture is required. A chassis supporting redundant MCU blades, power supplies, and cooling fans address this requirement.

Gateways

Gateways ensure that companies can support video conferences between ISDN and IP networks. That's critical for organizations that already have video conferencing deployed on an ISDN network and which don't want to rip and replace that technology, or for geographic locations where broadband IP networks are not available or too expensive. Although we highly recommend that all new video conferencing deployments be done

over IP for cost and management effectiveness whenever possible, many companies will be delivering enterprise-wide video conferencing in a mixed ISDN/IP environment for years to come. If they can't enable meetings between the two, they are severely limiting the value of the ISDN technology, and their investment in IP.

Rather than pulling expensive ISDN lines to every endpoint to meet this requirement, a solutions based approach enables deploying shared gateways at strategic locations within the network. When there is a requirement for an ISDN call, it is routed over the IP network to the appropriate ISDN gateway, and the call is placed using this pooled resource.

What's more, companies cannot control what technology other organizations use, making gateways key to enabling collaboration among remote employees, partners, suppliers and customers. Gateways should offer seamless performance and feature translation, as well support for high definition systems, easier dialing, higher reliability, better call quality and better infrastructure utilization.

Recording and Streaming

As video conferencing becomes more common, companies must be able to easily create the content, distribute it across the enterprise and outside its boundaries, and archive it for future use and compliance purposes. It should be easy to record content, and have the system create a rich multi-media presentation; manage content, so that users can search the system for the information they need, then either view the content as a media stream, or download presentations in their preferred file format, in the office or on the road; and share content, so that users can incorporate video in presentations, e-mails, applications, web sites and more.

Recording and streaming capabilities should include on-demand and live content streaming, with support for scheduled and ad hoc calls.

Provisioning

As companies deploy video conferencing to more people within the enterprise, and allow more people outside the enterprise to collaborate with employees across firewalls, provisioning becomes increasingly important. Provisioning requires that companies set up access rights for users based on definable policies, and that they then enforce those policies by ensuring the equipment is configured properly. In short, provisioning ensures IT sets the right policies for network and application use

But provisioning also refers to the ways in which IT staffers manage the technology itself. This involves setting bandwidth privileges, to determine who or what gets priority at any given time, which is key in delivering high-performance, reliable video conferencing.

ENDPOINTS: SELECTING THE BEST FIT

Ultimately, the goal of a total video conferencing solution is to enable companies to deliver the right technologies to the right users at the right time. Companies must enable collaboration while giving users an intuitive and consistent interface, regardless of the device they're using. Selecting the "best fit" technology, whether that's a high-end telepresence solution or a PC desktop application, is critical to collaboration success.

From an end user perspective, home-based employees may regularly tap PC-based video conferencing, but when they travel to a corporate office, they want full access to personal video systems. Road warriors need to stay connected regardless of their location. The ability to connect to group video systems from their hotel room using broadband IP or mobile devices is key. And executives may rely on their desktop appliances for ad-hoc calls, but they'll want a dedicated, more immersive telepresence system for highly strategic board meetings. Regardless, users want tools that are robust and feature-rich, and which deliver the best performance based on available bandwidth.

From a management perspective, of course, the chosen endpoints must offer published and maintained APIs, and be fully standards compliant, not just standards-based, for full interoperability. (This is an important distinction; only endpoints that are fully standards compliant will interoperate with older legacy systems.) New systems should also natively be high definition, or be easily upgraded to HD, and they must support firewall traversal and other infrastructure choices.

PC-based video

Also known as desktop video, PC-based videoconferencing software allows users to participate in video calls right from their computers. As more companies deploy unified communications—which contain integrated presence, chat, voice and web collaboration capabilities, as well as video—the number of employees with access to PC video will increase.

Executive Desktops

Designed to sit on an executive's desktop, these units come as an integrated single unit with a built in high-end HD camera, speakers and a flat panel display that can double as a PC monitor. Executive desktop systems are one of the fastest growing segments in video communications.

Room-based systems

Room-based (or group) videoconferencing allows multiple participants in a single conference room to interact with participants in another room or rooms. Prices for room-based videoconferencing have been decreasing, even as quality and functionality

have improved and buyers have gained more choices in size and technology. Room-based video is generally divided into two categories: large and team. Large video conferences may extend to multiple sites and very large numbers of participants; they usually include only limited audience interaction. Team video conferences are typically used by small project teams and departments, and they're more collaborative, allowing participants to interact with the presenter and one another during the session. Team video conferences often include collaboration capabilities, so participants can share documents and applications as needed.

High Definition

High definition video delivers roughly twice the vertical & horizontal picture resolution and nearly 10 times the quality of traditional systems, given appropriate bandwidth. It offers a "sitting across the table" experience, allowing participants to focus on the meeting and its content, rather than the technology behind it. As prices for HD systems come down, we expect to see HD become the defacto standard for new video conferencing deployments in the enterprise.

Of course, as companies realize the quality and value delivered by high definition video and audio systems, they want to integrate this new technology with their existing standard definition systems.

Telepresence

Telepresence systems are totally immersive videoconferencing products that are designed to make participants feel as though they are physically in the same room as one another, even when they're continents apart. Integrating high bandwidth connections, high definition audio and video, specialized furniture and architectural details, telepresence represents the premium side of high-end videoconferencing systems.

In order to maximize the return on a telepresence investment, it is critical to ensure that the telepresence system can communicate with all elements of the total solution. Telepresence "islands" limit the possibilities of unifying the organization and prohibit inter-company communications.

CASE STUDIES

TECO Energy

TECO Energy is a distributed and multi-faceted company, with multiple sites in Kentucky, Florida and Guatemala, and roughly 4,500 employees. Although the organization has had videoconferencing in place for more than 20 years, the traditional large ISDN systems were so difficult to use, employees did so only a few times a year. But as the 21st century

approached—along with Y2K-related fears—the company deployed new videoconferencing endpoints in four key locations, in case operations went down. They didn't, of course, but neither did the videoconferencing rooms.

TECO Coal, a business unit based in Corbin, Kentucky, was the first to look for ways to leverage the new technology. The business had four sites throughout Kentucky, separated by mountainous roads that are often dangerous to travel. And yet, TECO Coal executives were routinely driving three hours each way for one-hour meetings. By replacing those in-person sessions with video conferences, TECO Energy has saved its employees time and improved their safety—a key value in the energy industry overall, and for this company in particular.

TECO Energy currently supports more than 30 endpoints on a TANDBERG platform that includes Gatekeepers, Border Controller, Content Server and the Management Suite. Bob Brumm, the senior systems programmer in charge of the company's video communications infrastructure and applications, says he's been surprised by how creative end users have become when it comes to leveraging the technology. He now sees the system supporting everything from legal depositions to training and company-wide fitness programs. Best of all, meetings that used to be held via audio conference are remarkably more productive, he says, because people can easily share documents and read body language, ensuring everyone is literally and figuratively on the same page.

Next Brumm hopes to deploy desktop video, as the company looks for a lower-cost solution that will deliver videoconferencing to all its users; and more endpoints as demand continues to increase. Because the initiative was driven from the bottom-up, management is very pleased with the ROI, which Brumm estimates at about five months. "When implementing a total solution, some people get sticker shock, so you need to emphasize the benefits," he says. "That is how I prepared the presentation of the technology to our management—there's a cost, but we're getting safety, our key corporate value, better productivity, reduced travel and a pretty impressive return on investment."

Dewey & LeBoeuf

Based in New York, Dewey & LeBoeuf is the fifth-largest law firm in the U.S., and the 16th-largest in the world. With 1,400 lawyers working in 27 offices in 13 countries, the firm needs to get its attorneys and principals face to face as quickly and efficiently as possible—without having a significant impact on their billable hours.

When Luis E. Vanderhorst, the firm's manager of technical support, joined the organization in 2003, they had one mobile videoconferencing unit; today, they have more than three dozen. The growth is due in large part to a $7 million remodeling effort that saw $1.3 million spent on audio-visual alone. With new room-based systems, executive desktop units and mobile units, attorneys use the system to hold weekly team meetings and

executive-level strategy sessions. Human resources has started using videoconferencing to deliver required training to attorneys on an annual basis. Partners are using it to interview potential new partners in what they call the "fishbowl"—the applicant spends the day in a local Dewey & LeBoeuf office, and other partners call in every 30 minutes to "meet" him or her, virtually.

But with the increased usage, the firm found itself in an awkward situation: IT had a growing number of costly ISDN lines, and yet couldn't connect more than three sites in a single conference without performance problems. So it turned to a bridging service to close the gap. "That worked for about a year and a half," says Vanderhorst. "But the cost was enormous, and we could only get 384K bandwidth."

After performing an ROI calculation that showed payback in less than 18 months, Vanderhorst convinced upper management to deploy an on-site TANDBERG bridge. The results, he says, have been fantastic. Now he's working to get all conferences running on a standard of 512K, which he considers "business quality" today. His advice for companies looking to follow in his footsteps is easy: "Talk to your user community, see what they need and make sure you're really helping them," he says. "Give them what they want, and they'll use it."

CONCLUSION

The business world is growing increasingly virtual, with employees scattered around the globe, yet still needing to collaborate with one another as well as with partners, suppliers and customers. Video conferencing can help bridge the gap and make employees more productive by allowing people to meet face to face, without having to travel or be physically based in the same place.

Companies are realizing the value of visual communications, and they're deploying the new technology at record rates. But as they do so, IT managers must consider a total solution that will deliver a complete set of capabilities to both end users and IT. It's the only way to "future proof" the investment, since a total solution will let companies add new endpoints or back-end features, seamlessly and easily, whenever they're ready. A total solution should start with a scalable management platform, network control and firewall traversal.

Once they have such a platform in place, companies can add those features and capabilities that their employees or applications require, including conferencing, gateways, and archiving and recording capabilities. With the right infrastructure, IT managers can also deploy those endpoints that support the features offered as part of a total solution. Only by deploying a total solution will companies leverage maximum value for their video conferencing infrastructure—today, and well into tomorrow.

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