

The Power of Centralized Video Communications Management

*Providing Improved User Services
and Return on Investment*



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TANDBERG

Table of Contents

Why Deploy a Video Communications Management System?	1
Management Systems Defined	1
Business and Technology Drivers for VCMS Deployment	2
Management Systems Provide Real-World Benefits	4
Centralization of Information	4
Centralized Scheduling.....	5
Information Categorization	6
User Permissioning and Access Control	6
Improving Reliability	7
Management of Multi-Vendor Environments	8
Alarm Tracking and Problem Management	8
Detailed Reporting.....	9
Supporting Company Procedures and Existing Solutions	9
Real-World Examples.....	10
Conclusion	13
About Wainhouse Research	14
About the Authors	14
About TANDBERG	14

List of Figures

Figure 1: Impact of Increasing Usage Volume on Service Level	2
Figure 2: Impact of Increasing Usage on Total Cost of Ownership.....	2
Figure 3: System Summary Screen from TANDBERG TMS Solution.....	5
Figure 4: TMS Video Rooms View	6
Figure 5: Example of System Access / Permission Levels	7
Figure 6: Example of User Access Level Assignments	7
Figure 7: Screenshot of TMS Critical Error / Alarm View.....	8

Why Deploy a Video Communications Management System?

Video communications is now an accepted method for conducting meetings, product development, customer support, recruiting, distance education, and healthcare, along with many other applications. Once considered just an alternative to travel, videoconferencing has now become a core, mission-critical business tool for both large and small enterprises. Its deployment is rapidly growing, and in fact, Wainhouse Research reported that more than 420,000 units (group and executive / personal desktop videoconferencing clients) were shipped to enterprises in 2005,¹ joining the several million two-way video systems already in use. These video systems were placed in ISDN, IP, or mixed network topologies where their various capabilities are put to the test daily to support mission-critical applications.

Management Systems Defined

The increasingly rapid deployment of videoconferencing within the enterprise is the result of improved reliability and quality, lower equipment and bandwidth costs, and the migration to IP networks. Another major contributing element to this growth is the arrival of centralized management and scheduling tools, a highly specialized and comprehensive set of solutions which have introduced a never-before achievable level of reliability and consistency within the videoconferencing environment.

Wainhouse Research uses *video communications management systems (VCMS)* as an umbrella term to describe three major areas of video communications support: 1) videoconference network and device monitoring and management, 2) meeting, device, and people scheduling, and 3) call processing and control (call launching, call transfer, etc.). Specific capabilities offered by many VCMS solutions include:

- Network and Device Monitoring and Management
 - Centralized device (MCU, gateway, gatekeeper) management and configuration
 - Video endpoint management and control
 - En masse device provisioning via templates and software updates
 - Remote device monitoring and problem diagnostics and notification
 - Performance monitoring & trouble ticket tracking
 - System statistics, call detail records, and usage reports
 - Network and scheduled call views

- Meeting and Device Scheduling
 - Scheduling meetings, reserving rooms and resources (equipment, support staff, participants)
 - Extending calls beyond pre-scheduled time

- Call Processing and Control
 - In-meeting controls, e.g. mute audio, or change video layouts
 - Intelligent dialing, least cost routing, and bandwidth allocation
 - Centralized address book and list management features (search, replace, import)

¹ [SpotCheck](#): Videoconferencing Endpoints, Q4-2005 & Year 2005

- Asset management
- Security permissioning
- Scheduling and meeting invitations, via browser and/or MS Outlook or Lotus Notes

Most comprehensive VCMS products today contain all or most of the above features and when deployed can result in enhanced utilization, increased uptime, and improved return on investment (ROI). This white paper is intended to provide insight and guidance concerning the impact of – and benefits that can be derived from – the deployment of a video communications management system.

Business and Technology Drivers for VCMS Deployment

There are a number of reasons why an organization should consider the deployment of a video communications management system. The primary reason is the need to manage an ever increasingly complex video communications environment *without* decreasing the level of service or significantly increasing associated support costs. A VCMS makes growth possible that – lacking a VCMS – would not be sustainable.

As shown in the following diagrams, a VCMS deployment typically boosts the enterprise service level and provides a degree of cost control which can be maintained as usage volume increases.

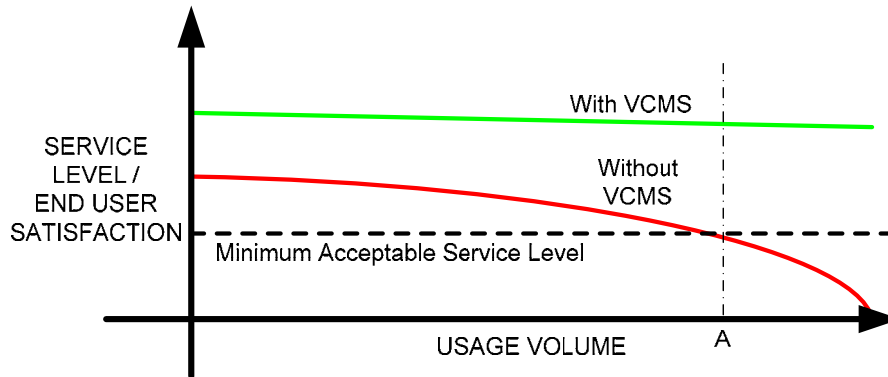


Figure 1: Impact of Increasing Usage Volume on Service Level

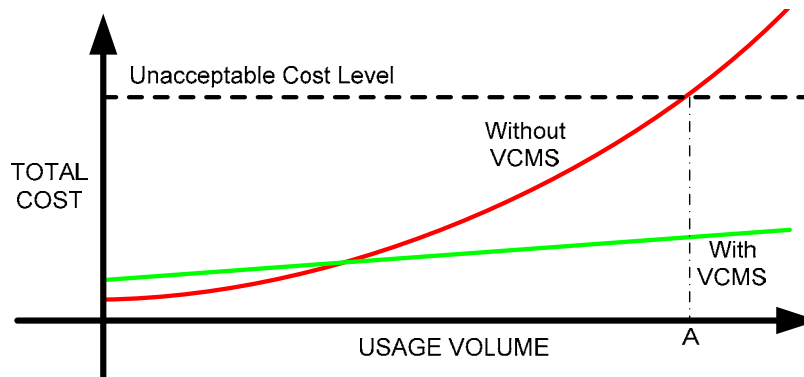


Figure 2: Impact of Increasing Usage on Total Cost of Ownership

Other key requirements driving the need for VCMS solutions include:

- The need to improve end user access to videoconferencing resources (and thus increase utilization of videoconferencing rooms and systems)
- The need to improve the performance of and consistency within the videoconferencing environment
- The need for improved presentation of data (in an easy-to-access, dashboard-type format) to support better management, faster problem identification, and administration.
- The need to extend beyond the scheduled and into the ad hoc meeting paradigm without sacrificing monitoring, manageability, and automation capabilities
- The need to decrease costs by more effectively leveraging support resources – including support staff and enterprise directory systems
- The need to decrease the burden on local support resources by centralizing global support efforts
- The need to implement redundancy and fail over
- The need to manage multi-vendor environments
- The need to track and report on the true cost and ROI of videoconferencing investments

Quite simply, in non-VCMS enabled environments, video systems remain islands unto themselves, making it impossible for the enterprise to enjoy economies of scale as more endpoints and infrastructure items are deployed. Video communication management systems allow organizations to proactively and easily monitor and manage video devices deployed around the world, from multiple vendors, in bulk fashion. VCMS is the tool that enables an organization to consolidate its videoconferencing resources into a reliable enterprise service.

Management Systems Provide Real-World Benefits

A centralized VCMS provides host organizations with a wide range of benefits that improve efficiency, enhance ROI, and allow the organization to focus its energy on its core business instead of conferencing management. The recipients of the benefits can be divided into three major stakeholder categories: 1) end users, 2) IT administrators, and 3) CIOs, VP's, and other C-level executives.

For end users, VCMS provide:

- Easy and efficient scheduling through the use of existing business tools
- Consistent, reliable meeting experience
- Access to ad hoc conference control resulting from integration with standardized IM clients
- Improved access to a view of conference room availability

For system administrators, VCMS provide:

- Consolidated approach to information gathering and reporting
- Improved ability to service the internal end user customer base
- Support for a variety of browsers and platforms, resulting in greater flexibility of deployment
- Support for other network management platforms that may coexist within the administrator's area of responsibility, such as HP OpenView, Tivoli, and other SNMP-based network monitoring tools
- Integrated trouble ticketing systems

For C-level executives responsible for driving IT and communications initiatives, VCMS provide:

- The ability to measure and validate videoconferencing as a competitive advantage for the business
- The ability to treat videoconferencing in the same manner as other managed IT resources, resulting in greater peace of mind
- A way to drive productivity and improve collaboration throughout the organization by making video communications available to larger groups of users.

Centralization of Information

VCMS act as a central repository for all information related to the enterprise's global videoconferencing environment, greatly simplifying the collection and distribution of important information to support staff and end users. This eliminates the manually updated spreadsheets, local databases, and printed schedules posted on meeting room doors in many enterprises, giving global users easy access (usually in a standard web browser) to the information they need about the conferencing environment. Information maintained within the typical management system includes availability information (free / busy status), complete system information, system capabilities, configuration details, IP addresses (and E.164 aliases), and ISDN phone numbers, support contacts, usage details and more. All of this data is typically stored in a back-end database capable of scaling to support very large deployments.

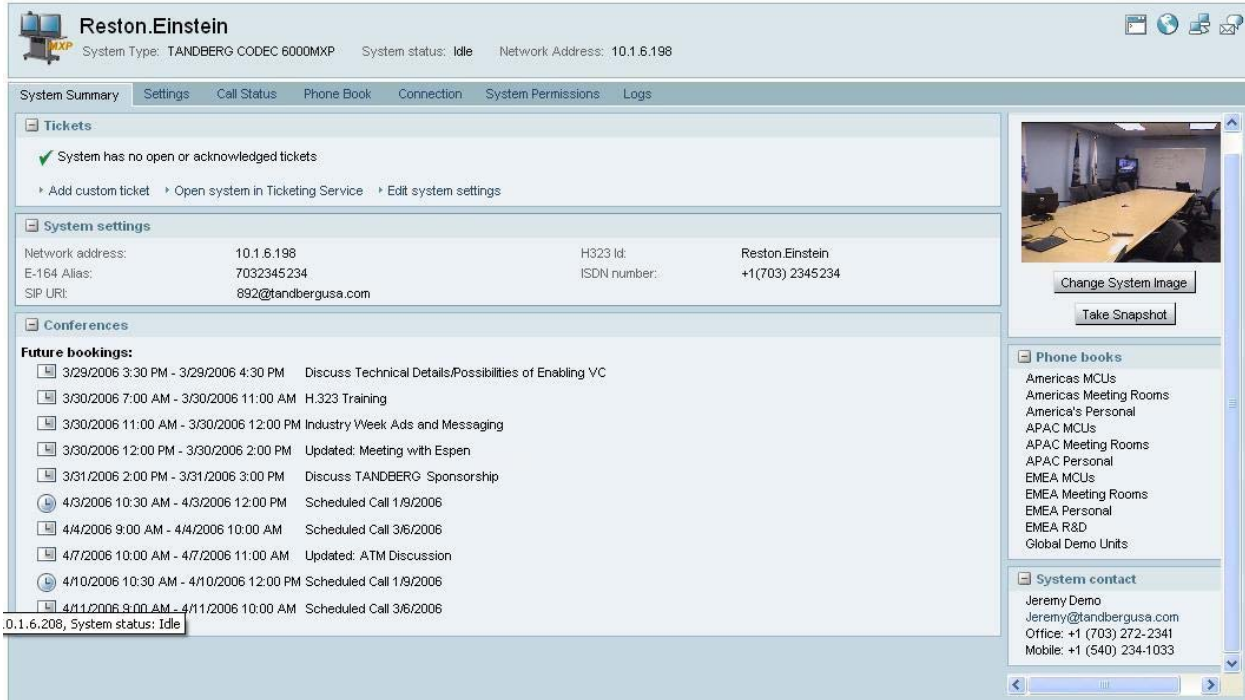


Figure 3: System Summary Screen from TANDBERG TMS Solution

The screen shot above illustrates some of the basic information contained within the TANDBERG Management Suite, available from the sponsor of this white paper.

Centralized Scheduling

Most organizations employ a decentralized approach to meeting scheduling, making scheduling a stressful and time consuming task. In many cases scheduling a meeting requires sending several emails or placing multiple phone calls to support staff and meeting participants across the globe. If many locations are involved, the process becomes even more complicated and meeting confirmations may take hours or even days. Such delays are simply unacceptable. This scheduling tool now can allow you to use audio, video, web, and other media with ease.

By leveraging the centralized database described above, a VCMS deployment allows organizations to centralize their meeting and resource scheduling efforts. In many cases this enables end users to schedule and confirm meetings directly. And, depending upon the VCMS, the resource allocation and scheduling may include bandwidth management, bridge port allocations, and even verification of system functionality and suitability. An advanced VCMS should make it easier for users to bring together complementary technologies such as audio conferencing, videoconferencing, and web conferencing into a single event. The result is improved efficiency, faster meeting confirmations, and the ability for an organization to more effectively leverage its meeting assets and support staff.

Information Categorization

Video management solutions not only store important information, but also provide administrators with the means to categorize their global assets in a manner that suits their organizations. Many VCMS solutions simplify asset management by allowing the creation of resource groupings that are used to limit the scope of access given to system users. Based on WR's experience, many organizations categorize videoconferencing resources by location, type of asset, and ownership as follows:

Location –Location groupings are typically based on a multi-level hierarchy with levels such as company, region, country, city, campus, building, floor, and room.

Type of Asset – Many organizations categorize their assets and resources by type, with groups including standard meeting room, videoconference room, and A/V device. In some cases these groups are expanded to provide tighter asset control (i.e. A/V device is replaced by numerous sub-groups such as video projector, document camera, VCR, DVD player, etc.).

Asset Ownership – Some organizations track the “ownership” of enterprise assets to limit access to only authorized users. For example, a conference room owned by the HR department may only be accessible (for reservations purposes) to members of the HR department and perhaps upper-level executives.

The power of this methodology stems from the ability to combine the above categories to create specific groups of assets such as:

- A group containing all videoconferencing systems within North America.
- A group containing all videoconferencing systems dedicated to the Executive department within the corporate hubs of New York, London, and Hong Kong.
- A group containing all DVD players within San Francisco not owned by a specific department.

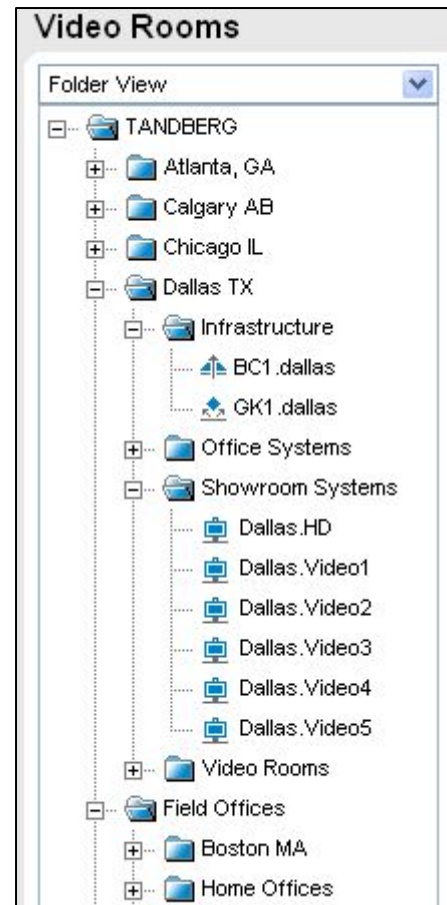


Figure 4: TMS Video Rooms View

User Permissioning and Access Control

Enterprise-class video management systems provide system administrators with total control over the rights given to users within the system. Ideally, to avoid the need for multiple logins, this control is based on the user's corporate network login. To simplify these tasks, many solutions administrators to create user types and access levels with associated rights and permissions as shown below:

Access Levels	System Admin.	Operations Manager	Meeting Scheduler	Support Technician	Floor Receptionist	End User
View room info	Y - By Scope	Y - By Scope	Y - By Scope	Y - By Scope	Y - By Scope	Y - By Scope
Schedule / Modify / Cancel Meeting	Y - By Scope	Y - By Scope	Y - By Scope	Y - By Scope	Y - By Scope	Y - By Scope
Create new rooms / edit room information	Y - By Scope	Y - By Scope	No	No	No	No
Create / View / Close Trouble Tickets	Y - By Scope	Y - By Scope	Y - Create & View Only	Y - Create, View & Edit	Y - View Only	No
Generate Usage Reports	Y - By Scope	Y - By Scope	No	No	Y - By Scope	No
Take Room Offline	Y - By Scope	Y - By Scope	No	Y - By Scope	No	No

Figure 5: Example of System Access / Permission Levels

The number of user types and access levels required depends upon the level of control required by the host organization. For example, some organizations create a user type called “Senior Technician” with rights to modify meeting reservations and a user type called “Junior Technician” with rights limited to viewing (but not altering) reservation details. Other enterprises create a user type called “Super User” with additional rights and privileges.

Once user groups and access levels have been defined, the final step is the assignment of individual user (or user group) permissions, which can be further enhanced through the use of scope (see information categorization section above). The table below includes several user permissioning examples:

User(s)	Access Level	Scope
Members of the HR department	End User	Location = Global Asset Type = All Ownership = Public
Members of the HR department	Super User	Location = Global Asset Type = Video Rooms Ownership = HR Department
The EMEA Operations Manager	Operations Manager	Location = EMEA Asset Type = All Ownership = All

Figure 6: Example of User Access Level Assignments

The key point is that superior management systems allow system administrators to create an asset categorization and user permissioning system that meets the specific needs of their organizations.

Improving Reliability

While the performance and reliability of videoconferencing endpoints, infrastructure devices, and network services continue to improve, issues do still arise. Proactive endpoint and network monitoring capabilities within the VCMS allow administrators to quickly (in some cases within only seconds) detect

problems or outages that may impact the user community. Furthermore, the system's centralized management features allow the support staff to quickly and remotely troubleshoot even complex issues and return affected systems to fully operational status.

In many cases, problems are discovered and resolved long before users become aware that a problem existed. The combination of proactive monitoring and expedited trouble discovery and resolution allows support staff to improve the performance and reliability of their videoconferencing services.

Management of Multi-Vendor Environments

A large percentage of enterprise videoconferencing deployments include video systems and/or infrastructure devices (MCUs, gateways, gatekeepers, etc.) from multiple vendors, which presents additional challenges for system managers. At the very least, support staff in multi-vendor environments must navigate different user interfaces, software revisions, system capabilities, and configuration details. Enterprise-grade video management systems include the ability to manage endpoints and devices from different manufacturers using a single management interface and platform, which decreases the burden on support staff and lowers the total cost of ownership for the video devices. For example, a true multi-vendor-capable management system would allow a system administrator to quickly and easily configure and manage large numbers of endpoints, regardless of manufacturer.

Alarm Tracking and Problem Management

A frequent problem with system logging and monitoring systems is the overabundance of information they provide. An enterprise-grade VCMS allows support staff to assign priority levels to specific types of problems, and to configure the management system to show only issues that exceed a certain threshold.

For example, system administrators may decide to classify any network outage as a high priority while tagging a low battery reading on a system remote as a low priority. The administrators can then configure the system to show only high priority items on the main screen and hide lower priority items until the higher priority issues have been resolved as shown below. This allows the support resources to focus their energies on the critical issues at hand.

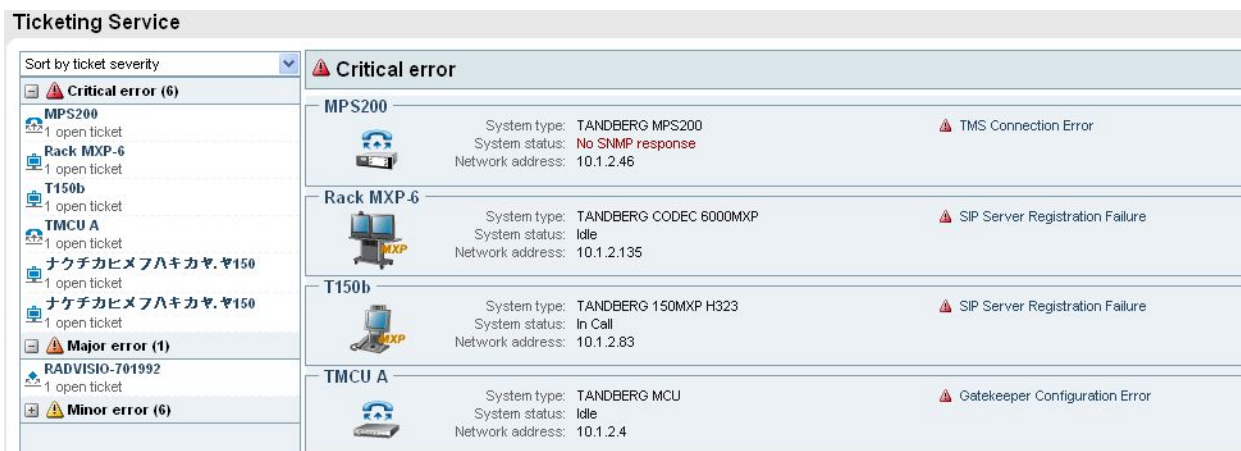


Figure 7: Screenshot of TMS Critical Error / Alarm View

Some video management systems also include a problem tracking engine that includes the creation (sometimes automatic) of trouble tickets, deployment of support resources, tracking of resolution activities, release of emails to affected users, and more.

Detailed Reporting

An important benefit of video management systems is the ability to generate detailed reports including:

- Room / asset lists – by location, asset type, ownership, etc.
- Usage reports – by data range, meeting type, location, system, user, department, etc.
- Cost / spending reports – by meeting, system, location, etc.
- Issue / trouble reports – by location, type of problem, time to resolution, status, etc.

This information enables the support staff to effectively track, monitor, and improve the performance of the conferencing service. Advanced VCMS not only gather raw information, but also present data in a way that allows for useful business interpretation. With this information in hand, conferencing managers can monitor usage, conduct capacity planning, highlight frequently occurring problems and pending issues, measure vendor conformance to service level agreements, and even generate detailed payback / ROI calculations for technology and support staff investments. In addition, usage data can be exported from the management system and subsequently imported into enterprise chargeback systems.

Supporting Company Procedures and Existing Solutions

Many video communication management systems integrate with enterprise groupware clients (Microsoft Outlook / Exchange, Lotus Notes, etc.) and/or corporate directory systems: a capability which further enhances the cost-effectiveness and efficiency of the conferencing environment by allowing an organization to leverage its existing infrastructure and support staff.

For example, assume that a new employee has been hired by the company. This requires the IT staff to create an account for this new user in the corporate directory system. In large organizations with thousands of employees worldwide, staff changes occur thousands of times each year. In a non-integrated environment, the conferencing staff would need to create a new user account within the management system in order to give this new user access; this is an obvious duplication of effort. A management system that interfaces with the corporate active directory system, however, would automatically “recognize” any user account changes, thus saving time, money and avoiding a potential security breach.

Video management systems that integrate with enterprise groupware clients allow end users to schedule meetings from an already familiar user interface, thus avoiding the learning curve associated with using a new scheduling system. Enterprise-grade management systems provide two-way communication between the management system and the groupware client, providing a variety of ways for users to see free/busy availability, schedule conferencing rooms, systems, and resources.

In addition, superior management system should support integration with enterprise instant messaging solutions (e.g. IBM Lotus Sametime / Microsoft Office Communicator) and allow users to launch ad hoc calls as easily and reliably as scheduled meetings from within those interfaces.

Real-World Examples

Example 1: Centralization of Information

A meeting coordinator for a Frankfurt, Germany-based multinational has been charged with coordinating a videoconference in two hours with a branch office in Buenos Aires. The goal of the meeting is to gauge the reaction of the managers in the Buenos Aires office to a few new product ideas. The task facing the coordinator sounds simple enough (after all, how hard can it be to coordinate a meeting between two locations), but because the organization does not maintain video system information on a regional or global basis, things are harder than they seem.

Lacking a database of contact numbers and video site information, the coordinator struggles with how to proceed. The Buenos Aires site is not scheduled to open for another 90 minutes, yet his manager expects meeting confirmation in the next few minutes. In hopes of reaching someone, the coordinator calls the Buenos Aires IT help desk, only to learn that the IT department has no interaction with the conferencing department. Without knowing the availability or phone numbers / IP addresses of the Buenos Aires' video rooms, it is impossible for the coordinator to finalize the meeting. The coordinator has little choice but to leave a message for and send an email to the responsible videoconferencing manager in Buenos Aires (whose name he received from the IT help desk), inform his manager that the meeting is not confirmed, and suggest that the meeting be delayed a few hours if possible. In short, business no longer flows in real-time.

In a VCMS-empowered enterprise, things work quite differently and the coordinator would take the following steps:

- Open a new meeting request in Outlook or Lotus Notes
- Select the date and time for the meeting based upon the availability of the users to be invited to the session.
- Select an available videoconferencing room in Buenos Aires (based on tracked free / busy information)
- Automatically release an email invitation to all invited participants.

Meetings now are confirmed easily and immediately. Once the Buenos Aires staff arrives for the day, they simply enter the room and the call is already underway (automatically launched by the management system).

Example 2: Problem Diagnostics and Notification

A financial services firm holds multi-location morning meetings involving senior and mid-level managers timed to major market openings. Failure is not acceptable; the total hourly “overhead” rates of the attendees at a single meeting could approach the cost of management software itself. For the purposes of this example, let’s assume that one of the 20 video sites involved experiences a problem connecting to the enterprise video bridge due to a network connection issue that occurred the night before.

In a traditional (non-VCMS enabled) environment, the following events would likely occur:

- 1) Meeting administrators would report to each video room at least 30 minutes prior to the call to prepare the room.
- 2) Administrators would connect each video system to the video bridge (either by dialing into the bridge from the room or having the bridge operator dial out to the room).
- 3) Administrators would test all audio and video signals to verify a good connection

The administrator in the site experiencing the problem would complete the following additional steps:

- 4) Repeat the attempt to connect to the video bridge
- 5) Dispatch a support technician to the meeting room (and wait for the technician to arrive)
- 6) Start troubleshooting efforts and attempt to resolve the problem

Considering the short notice before the scheduled meeting start time, it is unlikely that the problem will be fully resolved without impacting the meeting participants.

This is clearly a labor-intensive approach that forces people to remain in “react” mode rather than work in “proactive” mode. Furthermore, it requires that meeting rooms be available for call set-up and testing prior to the meeting, which is not always the case for either boardrooms or staff meeting rooms, and may result in additional ISDN transport, long distance, and video bridging costs.

Had this same issue occurred in a VCMS-enabled environment, the path to problem solving would be as follows:

- 1) Schedule the recurring meeting using the management system’s scheduling capabilities
- 2) Managers receive an alarm the night before stating that the video system has lost its network connection
- 3) Remote support staff utilize the VCMS to initiate troubleshooting efforts
- 4) If necessary, technicians or local admin are dispatched to the meeting room to resolve the issue
- 5) Problem is resolved hours before the morning meeting is scheduled to start
- 6) All sites connect to the video bridge for the meeting at the specified time

Not only did the management system detect the problem before it impacted the user community, but the system’s automated call launching and monitoring capabilities allowed this enterprise to avoid having to dispatch meeting administrators to each room for connection and testing.

Example 3: Managing the End User Experience

A medium-sized law firm holds weekly client status meetings between partners in six locations. The meeting attendees are not technically savvy – nor do they want to be. Unfortunately, each time the attendees arrive in the meeting room, they have difficulty establishing the meeting for reasons including:

- Different meeting rooms are used each week
- Several different kinds of video systems are used within the organization
- Other staff members use the meeting rooms and save / modify entries in the address books
- Attendees are unaware of the proper problem reporting procedures and do not have access to current contact information for support staff

As a result, meetings are often delayed and support staff is often diverted to the meeting rooms to resolve rudimentary technical issues.

In a VCMS-enabled environment, all aspects of this recurring meeting are handled automatically by the scheduling and management system, allowing the meeting attendees to simply report to the appropriate meeting rooms and start their meeting. Meeting specifics including call connection rate, multipoint screen layouts, and meeting recording requirements are tracked within the meeting reservation and implemented automatically. Ultimately this streamlines the meeting process while giving users a consistent experience – regardless of the rooms or systems involved and without needing to involve the conferencing manager or IT department.

Conclusion

A VCMS can help organizations manage increasingly complex video communications environments *without* decreasing the level of service or increasing associated support costs. As a result, video networks can grow in ways never before possible, while offering an improved quality of experience for end users, system administrators, and C-level executives who wish to drive usage throughout the enterprise.

A VCMS delivers a number of real world benefits. By leveraging a centralized database, a VCMS deployment allows organizations to centralize their scheduling and asset management efforts.

For end users, a VCMS provides easier scheduling, immediate access to conference room availability, a more consistent and reliable meeting experience, and in some cases the ability to launch conferences “on the fly” from within instant messaging clients.

For system administrators, it acts as a central repository for all information related to the enterprise’s global videoconferencing environment, greatly simplifying the collection and distribution of important information to support staff and end users. Enterprise-class video management systems also provide system administrators with total control over the rights given to users within the system – and thus a means to implement corporate policy. The combination of proactive endpoint and network monitoring capabilities, remote endpoint and device management features, and integrated trouble ticketing allows administrators to quickly detect and resolve problems that may impact end users. Finally, a VCMS allows an enterprise to leverage the skill sets of globally dispersed resources and helps support staff cope with the disparities and complexities of multi-vendor videoconferencing environments.

For C-level executives, a VCMS provides the ability to quantify success in using videoconferencing as a key competitive advantage, the ability to treat videoconferencing in the same manner as other managed IT resources, and a way to drive productivity and improve collaboration throughout the organization.

The net result is that cost-effective, reliable, and high-performance video communications become available to ever larger groups of users within VCMS-equipped enterprises.

About Wainhouse Research

Wainhouse Research (<http://www.wainhouse.com>) is an independent market research firm that focuses on critical issues in rich media communications, videoconferencing, teleconferencing, and streaming media. The company conducts multi-client and custom research studies, consults with end users on key implementation issues, publishes white papers and market statistics, and delivers public and private seminars as well as speaker presentations at industry group meetings. Wainhouse Research publishes *Conferencing Markets & Strategies*, a three-volume study that details the current market trends and major vendor strategies in the multimedia networking infrastructure, endpoints, and services markets, as well as a variety of segment reports, the free newsletter, *The Wainhouse Research Bulletin*, and the PLATINUM (www.wrplatinum.com) content website.

About the Authors

Alan D. Greenberg is a Partner at Wainhouse Research. Alan has worked in the telecommunications, videoconferencing, software and services, and multimedia arenas for more than 20 years, holding marketing positions with VTEL, Texas Instruments, and several Austin, Texas-based startups, and consulting to many organizations. He has conducted research into dozens of management software and managed services deployments, and authored [Video Communications Management Systems 2004](#). Alan's current focus includes distance education and e-Learning, managed services, and 3G visual communications. Alan holds an M.A. from the University of Texas at Austin and a B.A. from Hampshire College. He can be reached at agreenberg@wainhouse.com.

Ira M. Weinstein is a Partner at Wainhouse Research, and a 15-year veteran of the conferencing, collaboration and audio-visual industries. Prior to joining Wainhouse Research, Ira was the VP of Marketing and Business Development at IVCi, managed a technology consulting company, and ran the global conferencing department for a Fortune 50 investment bank. Ira's current focus includes IP video conferencing, network service providers, global management systems, scheduling and automation platforms, ROI and technology justification programs, and audio-visual integration. Mr. Weinstein holds a B.S. in Engineering from Lehigh University and is currently pursuing an MBA in Management and Marketing. He can be reached at jweinstein@wainhouse.com.

About TANDBERG

TANDBERG is a leading global provider of visual communication products and services. The Company has dual headquarters in New York and Norway. TANDBERG designs, develops and markets systems and software for video, voice and data. The Company provides sales, support and value-added services in more than 90 countries worldwide. TANDBERG is publicly traded on the Oslo Stock Exchange under the ticker TAA.OL. Please visit www.tandberg.net for more information.