

***Extending Visual
Communications to the
Enterprise Desktop and
Remote Office***



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Introduction

For the past twenty years, enterprise videoconferencing solutions have been confined largely to the corporate meeting room (or education classroom) where relatively small numbers of endpoints operate in carefully configured, scheduled, and reserved environments. Today, increasing numbers of line managers and business executives are looking for ways to make their communications processes more efficient, easier to use, and broader in reach. Rich media communication solutions that integrate voice, video, and data collaboration are now recognized as key elements to help reduce the “human latency” that slows many enterprise decision making processes. Extending conferencing and collaboration solutions beyond the conference room to the desktop and to the remote/mobile/home worker has become a consideration for many enterprise deployment plans.

Voice, video, and data collaboration solutions for the desktop have evolved from their proprietary roots to modern, web-based solutions. But enterprise conferencing managers still face many challenges. These include insuring connectivity across network boundaries, delivering a scalable and manageable system friendly to end users and IT managers alike, and providing an environment that supports video and data collaboration between desktop and room systems.

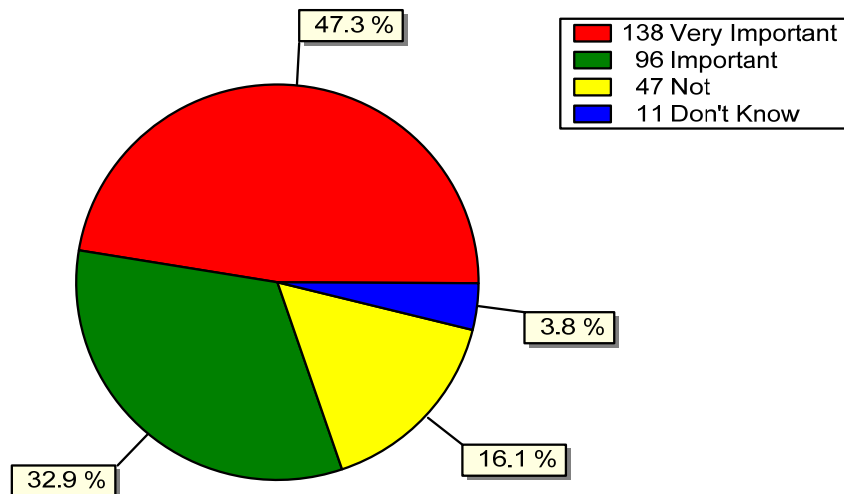


Figure 1: Importance of desktop to room video connectivity.

Over 80% of respondents said it was “Very Important” or “Important” to have these two forms of visual communications be able to connect.

Source: Wainhouse Research videometrics survey 2006 taken of readers of WRB newsletter

The Limits of Traditional Collaboration Solutions

The challenges that many organizations face in extending visual communications to the enterprise desktop and remote office fall into three general categories.

Connectivity and Accessibility: The goal here is to bring together conference rooms and LAN-connected desktops with remote employees and external partners no matter where they are located. In looking at voice, video, and web communications futures, many enterprises are migrating to an IP network for communications. One network offers many advantages – more efficient to manage and deploy, capable of handling all types of traffic – and a single IP network forms the foundation for unified communications and enhanced services in the future. But one of the lingering disadvantages of today's IP network implementations is that for users outside the corporate firewall – whether they are employees on the road working from hotel rooms, workers located in home offices, or colleagues from partner companies – the firewall typically blocks IP-based voice and video communications.

Another aspect of connectivity and accessibility is extensibility. In many business (and education) situations there exists a need to extend the conferencing or presentation environment and to be able to deliver information to large numbers of PC desktops. When the size of the audience becomes large, interactivity is less important, and streaming/webcasting becomes a preferred alternative. Having a smooth interface between the videoconferencing and streaming worlds makes it possible to deliver two-way, interactive sessions in a one-way broadcast mode (both live and archived) that is convenient, bandwidth efficient, and low-cost as well as compatible with many types of endpoint devices.

Interoperability and Consistency: No enterprise wants to deploy islands of communications. Instead, users want to be able to use room and personal systems interchangeably and connect between the two types of devices seamlessly with full support for audio, video, and data as appropriate. One approach used in the past is to provide users with personal video appliances. These appliances (also called executive video systems) provide a high level of interoperability with room video systems, as well as a common user experience since they generally support a common set of audio, video, and data collaboration protocols. However, these devices are expensive (generally \$3-8K each), generally too large, heavy, and fragile for mobile users, and suffer the same NAT-firewall traversal challenges of any H.323 or SIP-based system.

Another approach is to provide a software-based desktop videoconferencing client. This solution is very mobile when deployed on a laptop, and allows communication with other standards-based systems, but generally fails in remote environments because of the NAT-firewall challenge. A third approach is to give up on visual communications and ask partners or remote participants to attend an audio conference and use a simultaneous Web conference (or email the slides) for the data collaboration portion of the meeting. If a videoconferencing session is also part of the meeting, the total conferencing environment could consist of separate audio, video, and web sessions – a scheduling nightmare and a confusing user experience.

Furthermore, even when systems are deemed interoperable and can actually connect, they often fail to provide a consistent environment for data and video. Users want to experience video (and audio) and data no matter which type of system they or any of the other meeting participants are using at the time.

Manageability: When IT executives shift their thinking from video-enabled room systems to desktop-enabled collaboration systems, they need to shift their plans from deploying and managing dozens of systems to the issues associated with supporting thousands of systems. As deployments grow to large sizes, new concerns arise including how to effectively manage new system installations and software upgrades – ideally with minimal human intervention. One element that is gaining in popularity, primarily because it simplifies management and support overhead is the web-based user interface – no installation is required for at least some level of interactivity.

In the past, some collaboration managers have been confused by different licensing plans. The challenge is to provide an expansive licensing environment without requiring management to assume their future needs or pay heavily up front. Typically, PC-based desktop videoconferencing systems are purchased on an individual client-license-fee basis. Each individual who wishes to join a conference - including suppliers, partners, mobile colleagues, etc. - must first purchase and install software. Other desktop collaboration applications are based on client-server architectures and a “concurrent user” licensing scheme. With this approach, an enterprise might purchase 100 concurrent (simultaneous use) licenses to support 400-1000 users with the understanding that not all users will be active at the same time. Typically, concurrent-user client software downloads are free and can support ad-hoc meetings through just-in-time downloads of clients or web-browser plug-ins.

A New Approach to the Challenge

During the past decade many companies have introduced personal collaboration solutions that have addressed some of the challenges identified above. In mid-2007, RADVISION introduced a new software-based solution that combines the company’s traditional video infrastructure technology with the utility and ease-of-use provided by its Click to Meet desktop collaboration application. RADVISION’s new product, dubbed [SCOPIA Desktop](#), is server-based software that works with the company’s SCOPIA MCU (Multipoint Control Unit). SCOPIA Desktop addresses all of the challenges described above, thereby enabling room video systems and personal conferencing systems (and ordinary mobile phones) to connect - whether inside or outside the firewall. The basic elements of SCOPIA desktop include:

- Integrated video and Web-based data collaboration. SCOPIA Desktop bridges between PC-based systems and room appliances and between H.239-compatible and non-H.239 compatible endpoints. The integration provides a common experience for users of room systems and of desktop/remote clients.
- An automatic, downloadable, free Web plug-in for simple, ad-hoc client installation.
- Built-in firewall and NAT traversal capabilities that make the solution suitable for remote workers, customers, suppliers, and large and small partners alike.
- Built-in conference broadcast capabilities (via streaming) for addressing large audiences.
- Support for the latest audio and video codecs for high quality conferencing.

SCOPIA™ Desktop: Meeting Next-Generation User Needs

Connectivity and Accessibility

SCOPIA Desktop includes embedded firewall traversal technology that allows organizations to maintain existing security mechanisms but support voice and video communications at the same time. SCOPIA Desktop provides the ability for voice and video to traverse both the local and remote firewall to ensure connectivity. The SCOPIA technology includes automatic detection of the optimal media path via UDP, TCP, or tunneled TCP. The end result is the ability of remote users to connect from anywhere, even in complex security environments, without having to reconfigure their systems. SCOPIA Desktop's firewall traversal solution provides an added benefit for network managers – they do not have to deploy and manage yet another application (firewall traversal) or train users on how to use a separate firewall traversal application.

SCOPIA Desktop also includes an embedded streaming capability that automatically syncs audio, video, and presentation data. SCOPIA's streaming solution can extend the reach and scalability of existing videoconferencing deployments to thousands of PC- and mobile device-based users. At the same time, the streaming capability can provide a way for conferencing administrators to monitor conferences in a non-disruptive fashion.

Interoperability and Consistency

SCOPIA Desktop provides users seamless connectivity between room videoconferencing systems and PC-based collaboration solutions. Videoconferencing is extended to the desktop in such a way that users get the same conferencing capabilities – including continuous presence in a multipoint call, full data collaboration features, PIN protected meetings, and conference moderator functions - whether connected from a high end conference room system or from a remote laptop.



Figure 2: SCOPIA Desktop user interface
H.239 data collaboration in the main window and simultaneous continuous presence H.264 video.

The common-capabilities experience facilitates and encourages the use of time-saving and cost-saving videoconferencing and collaboration applications because users do not have to settle for a diminished feature set when in a “cross-platform” conference. SCOPIA desktop acts as an intelligent gateway between room appliances and PC desktops to provide each the video and data that is appropriate for its capabilities. This benefit is especially useful when the videoconferencing session includes data collaboration. A typical modern room system supports H.239 data conferencing (dual stream) capabilities. H.239 allows users to send live, high resolution PC screen captures or application windows at the same time as the full motion video scenes. With the SCOPIA Desktop solution, data shared from a room system is visible on all other room systems as well as on remote user’s desktops. Likewise, data shared from PC-based participants is visible on all other desktops and room systems.

SCOPIA Desktop supports state-of-the-art audio and video processing for each participant along with advanced codecs such as H.264 video, H.239 data, and wideband audio. Each participant gets a dedicated high quality audio visual experience optimized for his particular endpoint and network connection. Everyone benefits from more efficient use of network infrastructure, more cost-effective business quality video, and better access to participants with low bandwidth.



Figure 3: SCOPIA Desktop user interface

Showing continuous presence H.264 video in the main window and simultaneous H.239 data collaboration.

Manageability

Installing client software and maintaining current revision levels can be a huge headache for IT managers, particularly when the deployment is large and distributed. SCOPIA Desktop addresses this issue successfully since the application is a centrally managed and deployed browser plug-in downloaded from the server. The initial client installation requires only that the user click on a Web link. After the initial installation, the software automatically checks for software updates and performs the required additional downloads as appropriate. IT managers need only manage the application server. Another manageability advantage comes from ease-of-use and reduced

need for training. For example, users can invite anyone to a meeting by simply sending a Web link message (email or IM) to any business partner or colleague inside or outside the firewall. If required, the client software will load automatically when the invitee attempts to join the audio-video-data collaboration session. The automatic software download lightens any central administration load and makes it simple for anyone to join a meeting.

SCOPIA Desktop uses a licensing model based on concurrent users; there are no individual client license fees. This means that the client can be deployed to anyone inside or outside the organization at no additional cost. This licensing scheme is well-suited for ad-hoc invitations to students, customers, partners, suppliers, remote employees, casual users, and more.

Sample SCOPIA Desktop Deployment

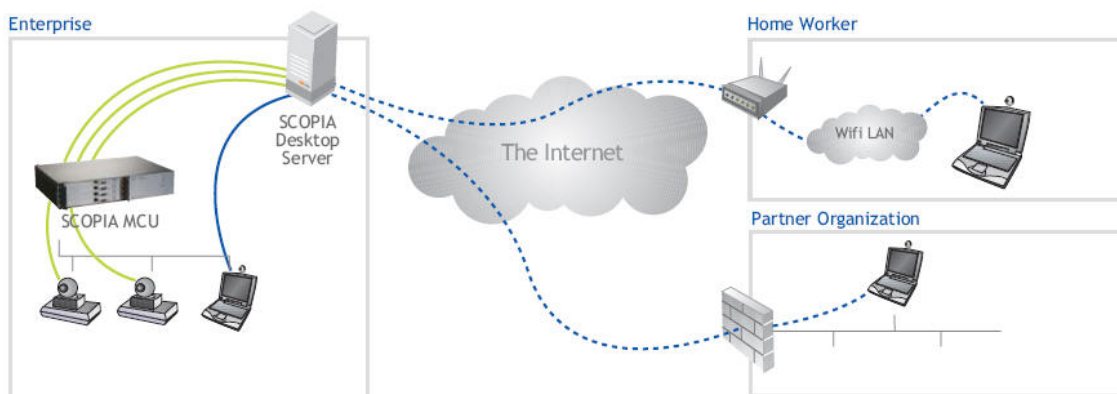




Figure 4: Sample SCOPIA Desktop deployment

Showing home worker connected via wireless and partner organization connected through firewall. Both access SCOPIA Desktop through the Internet.

Conclusion

SCOPIA Desktop bridges between the rich environment of today's room videoconferencing systems and the needs of the PC-based worker, providing a common voice, video, and data collaboration environment to all users inside and outside the corporate firewall. SCOPIA Desktop is server-based and provides key scalability, manageability, simple licensing scheme, and ease-of-use capabilities that line managers and IT executives will appreciate as they plan, deploy, and manage their enterprise communications systems. For more detailed information, see www.radvision.com.

Solution Comparison

	 RADVISION Delivering the Visual Experience™	TANDBERG	 POLYCOM TOGETHER. GREAT THINGS HAPPEN.
Feature	SCOPIA Desktop	Tandberg Movi	Polycom PVX
Deployment			
Self-deploying and Auto-updating Client	✓	✓	No
Centrally Managed Client	✓	✓	No
Free Client Distribution	✓	✓	No
Web Browser Plug-In	✓	✓	No
Client Application Software	No	No	✓
Windows XP/Vista Compatible	Yes/Yes	Yes/Yes	Yes/Yes
Protocols Supported			
H.323	Via MCU	Via MCU	✓
SIP	Via MCU	✓	✓
Audio-Video Capabilities			
H.263 Video	✓	✓	✓
H.264 Video	✓	No	✓
CIF Video	✓	✓	✓
4CIF Video	Future	No	Data
720p Video	Future	No	Future
VGA Video (640 x 480)	Future	No	✓
7 kHz Audio	✓	✓	✓
14 kHz Audio	No	No	✓
Data Collaboration			
H.239 Support, Including Data-only	✓	No	✓
XGA (1024 x 768) Resolution	✓	No	✓
Dual Images (View Data & Meeting)	✓	No	✓
Share Entire Screen	✓	No	✓
Share Specific Applications	✓	No	No
T.120 Support	No	No	✓
Streaming Capabilities			
Built-in Streaming Support	✓	NA	NA
NAT-Firewall Traversal			
Embedded Firewall Traversal	✓	No	No
Traverses Local and Remote Firewalls	✓	No	No
NAT	✓	No	✓
Automatic Media Path Detection (UDP, TCP, Tunneled TCP)	✓	No	No
Meeting Creation and Invitation			
Outlook Scheduling	✓	With additional products	With additional products
Web-Based Scheduling	✓	✓	With additional products
Local Address Book	Future	No	✓
Ad-hoc Creation of Meeting by User	✓	✓	✓
Personal / Virtual Meeting Rooms via MCU	✓	✓	✓
Security			
H.235 Media Encryption - AES	✓	No	✓
Meeting Password (PIN) Protection	✓	✓	✓
Expulsion of Unauthorized Attendees	✓	✓	✓
Meeting Waiting Room	Future	No	No



About Wainhouse Research

Wainhouse Research (www.wainhouse.com) is an independent market research firm that focuses on critical issues in unified communications, videoconferencing, rich media conferencing and collaboration, as well as 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 and presentations. Wainhouse Research also publishes a variety of market segment reports, product overviews, and a free newsletter, *The Wainhouse Research Bulletin*, and hosts the PLATINUM (www.wrplatinum.com) content website.

About the Author

Andrew W. Davis, the Managing Partner at Wainhouse Research, has more than 15 years experience as a successful technology consultant and industry analyst. Prior to founding Wainhouse Research, Andrew held senior marketing positions with several large and small high-technology companies. He has published over 250 trade journal articles and opinion columns on multimedia communications, image and signal processing, videoconferencing, and corporate strategies. Andrew has authored numerous market research reports and is the principal editor of the conferencing industry's leading newsletter, *The Wainhouse Research Bulletin*. Andrew specializes in videoconferencing, rich media communications, strategy consulting, and new business development. A well-known industry guest speaker, Mr. Davis holds B.S. and M.S. degrees in engineering from Cornell University and a Masters of Business Administration from Harvard University.



About the Sponsor

RADVISION (NASDAQ: RVSN) is the industry's leading provider of market-proven products and technologies for unified visual communications over IP, 3G and IMS networks. With its complete set of standards-based video networking infrastructure and developer toolkits for voice, video, data and wireless communications, RADVISION is driving the unified communications evolution by combining the power of video, voice, data and wireless – for high definition video conferencing systems, innovative converged mobile services, and highly scalable video-enabled desktop platforms on IP, 3G and emerging next-generation IMS networks. For more information about RADVISION, visit www.radvision.com.