Alcatel·Lucent

STRATEGIC WHITE PAPER

Improving Business Operations with Unified Video Communications

Medium and large enterprises are finding new opportunities to reduce costs and improve team collaboration and customer service by deploying the latest enterprise video solutions. This paper assesses the main challenges enterprises face when introducing enterprise video — silos, low quality of service, pace of transformation. It reviews the key benefits provided by fully unified enterprise video solutions. And, using an existing solution model, it describes the key attributes of unified video communications solutions that are designed to support enterprise business objectives.

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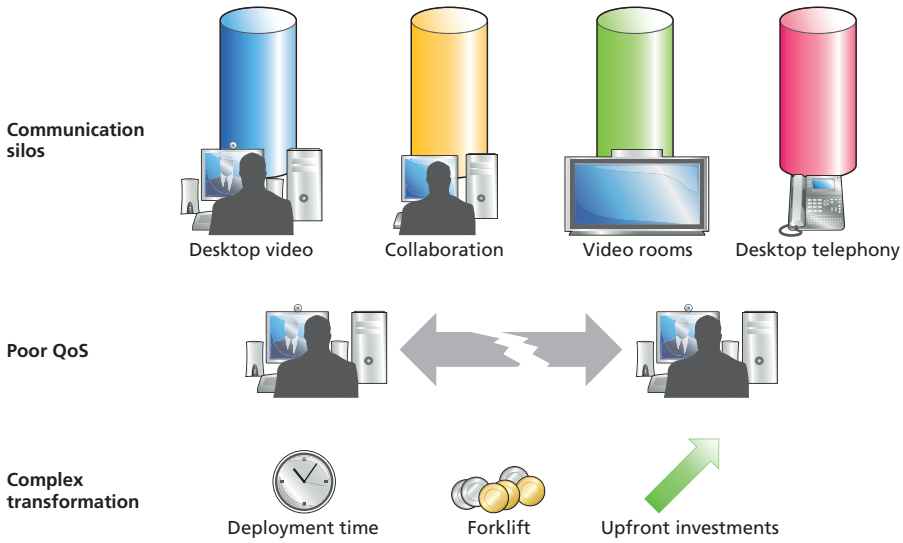
1. Addressing enterprise business challenges

Three of the most pressing business challenges faced by medium and large enterprises are reducing costs, improving team collaboration and providing better customer service. To address these challenges, some enterprises have turned to video communications solutions that enhance business operations. But not all video solutions can help enterprises achieve their business objectives.

Traditional video solutions for enterprises are mostly composed of standard definition video conferencing systems configured with dedicated monitors and video cameras. The newer generation of video has introduced major enhancements related to high definition (HD), as well as new hardware (immersive reality conferencing rooms, video desktop terminals) and software form factors (PC-based HD video). This new technology is now mature and is being deployed more frequently. Future technology improvements will target higher video resolutions and interactive video communications from enterprise smartphones. Until then, enterprises can leverage today's video solutions to address business objectives.

A properly deployed video communications solution can lower enterprise travel costs, improve team collaboration through richer interactions between geographically dispersed sites, and enhance customer service as a result of additional time spent with customers in video meetings. However, there are several challenges associated with deployment of video solutions in an enterprise (Figure 1).

Figure 1. Challenges faced when deploying enterprise video solutions



Some of the key challenges include:

- *Communication silos*, which can be created by employees using several different types of video solutions, such as conferencing rooms, video softphones or video options that are not integrated with enterprise communications solutions
- *Poor quality of service (QoS)*, which is usually the result of the network's inability to provide the quality required for HD video communications. Low quality slows the adoption of video solutions and may reflect badly on the enterprise if quality problems arise when employees are communicating with customers.
- *Complex transformation*, which increases deployment time and costs through extensive equipment replacement and introduction

The most effective video communications solutions will address these challenges by unifying enterprise video with enterprise-wide unified communications (UC) applications. Enterprises that make a smooth transition from existing communication networks to unified video communications solutions will achieve their business objectives, protect their investments and lower future upfront costs.

2. Key benefits of unified video communications

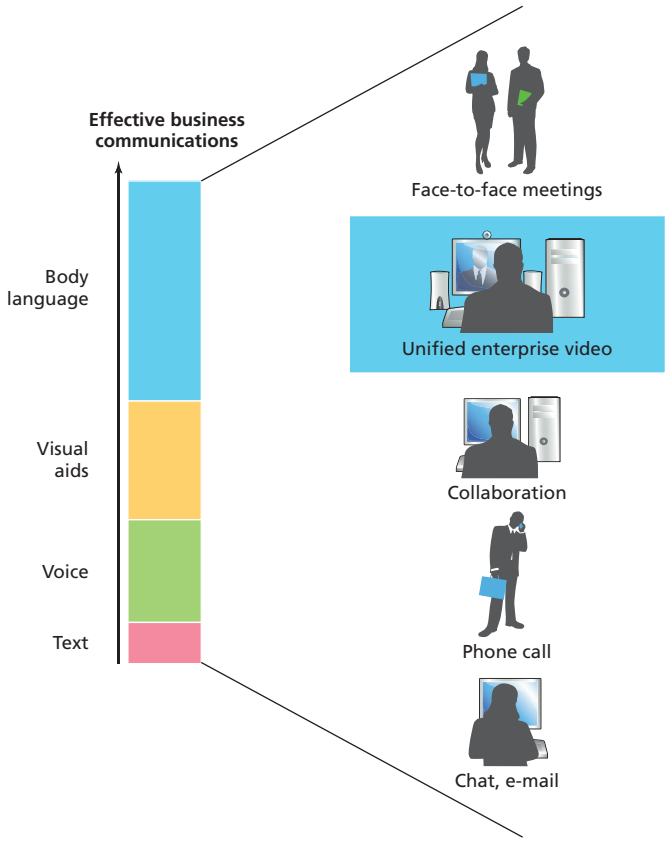
Unified video communications solutions bring UC and video collaboration together. They combine an easy-to-use, ubiquitous communication technology with body language — the most effective interpersonal communication medium — to deliver a number of key benefits to medium and large enterprises.

2.1 Build trust

Businesses need trust. Trust between teams in an enterprise and between business partners is the key to a smooth and effective working relationship. High-quality video communication is the next best option to a face-to-face meeting when it comes to building trust (Figure 2).

However, making this an acceptable option beyond a few adopters in an enterprise can only be accomplished if many employees can benefit from high-quality video communications when they need them. Therefore, video communications should be available not only in conference rooms and in telepresence facilities, but also at every user's desktop.

Figure 2. Effectiveness of media in business communications



A truly unified video communications solution puts all video interactions only one click away. By integrating video within a rich, presence-based collaboration platform, enterprise Chief Information Officers (CIOs) can help employees decide when video is the most appropriate interaction medium for a given situation. In this way, a unified video communications solution can help the enterprise build trust between employees, as well as with third-party partners and suppliers.

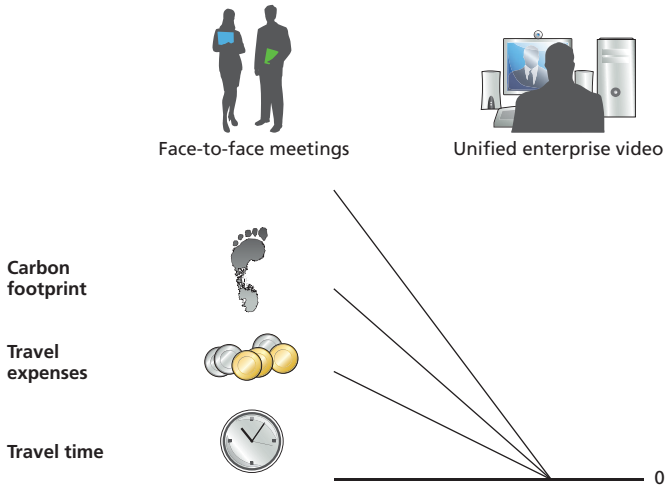
2.2 Reduce costs

Replacing face-to-face meetings with unified video communications can reduce travel costs drastically. In addition to reducing the need for travel to meet with colleagues and customers, a unified video communications solution can also help employees be more efficient by re-allocating the time they would spend in airplanes, cars or trains to other business tasks (Figure 3).

Video interactions also make communications with home workers more effective by allowing isolated employees to maintain direct contact with their colleagues. And enterprises that leverage home workers can benefit from savings in real estate and facility costs by reducing the need for office space.

Video interactions at each employee's desktop can easily be enabled by inexpensive consumer-grade webcams. The return on investment is immediate because one night in a hotel room will cost much more than a webcam.

Figure 3. Face-to-face meetings vs. unified video communications

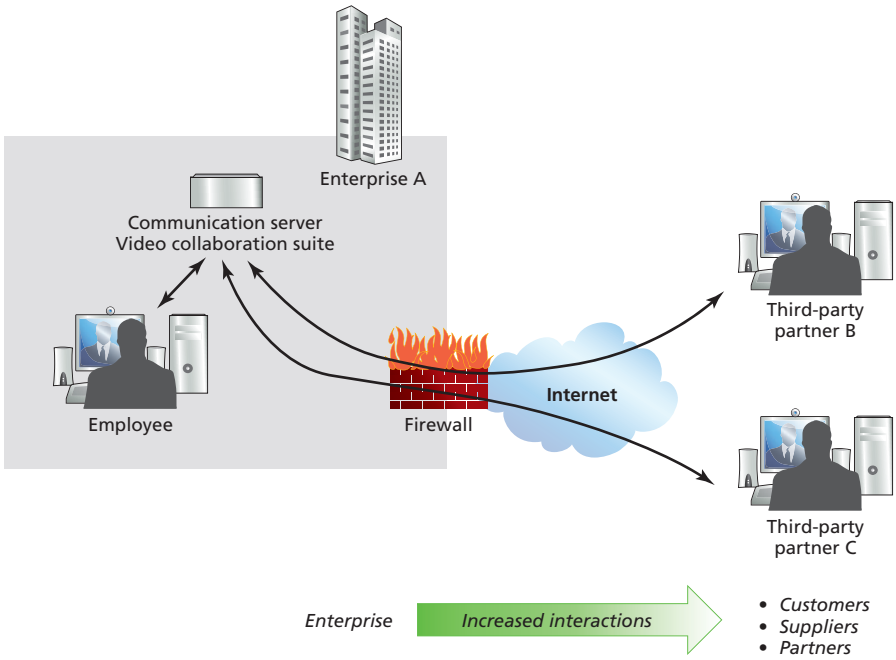


However, these savings must not be compromised by a highly increased total cost of ownership (TCO) and massive forklift upgrades of other equipment. Therefore, unified video communications solutions must leverage legacy conferencing systems and easily integrate with other communication and network management systems. Effective integration with enterprise communication servers will also make it easier to deploy the video solution to a larger number of business profiles (executives, remote workers, experts, inter-site team workers). It will also reduce the effort required to roll out full, high-quality video for a larger number of employees when the network has been upgraded to meet bandwidth requirements.

2.3 Spend more time with customers

Unified video communications solutions that are based on open web technology can safely and easily be made accessible to third-party partners via the Internet (Figure 4). With this approach, the travel time that is saved can be better spent with customers or business partners through weekly video interactions instead of monthly site visits. This is a very effective way to demonstrate both innovation and a strong commitment to a customer.

Figure 4. Unified video communications interactions across the Internet



2.4 Increase the efficiency of virtual teams

Unified video communications support and enable virtual teamwork initiatives for organizations with personnel in multiple sites or teams of teleworkers.

Virtual teamwork is increasing as teleworking is on the rise and distributed, cross-functional work teams are becoming the norm. With just audio and web conferencing tools at their disposal, virtual teams can be at a disadvantage. They may feel disconnected. They may find it difficult to get to know one another. And they miss the all important visual cues offered by body language. Video is, therefore, an important tool for creating highly effective virtual teams. It enables a virtual team environment to thrive because it replicates the quality of interaction available in face-to-face meetings.

In addition, video connects teleworkers and road warriors, who may otherwise feel completely disconnected from the company, to the larger organization. Video communications bridge the gap and create the connection that helps maintain a corporate culture and loyalty among a dispersed workforce.

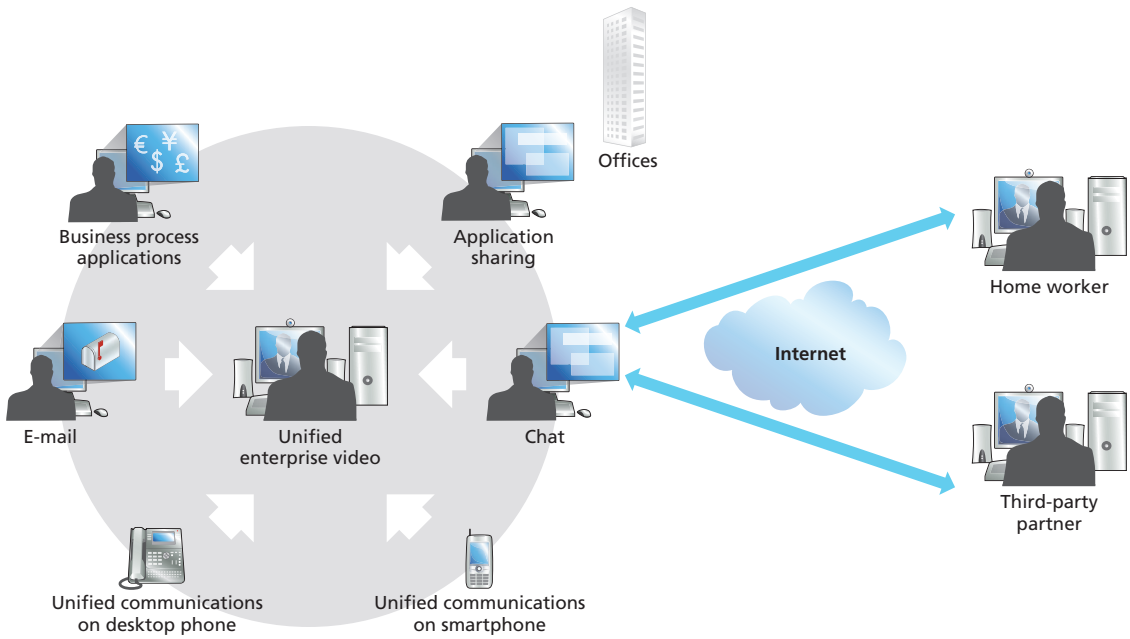
3. Key requirements for unified video communications

Unified video communications can bring immediate business benefits provided that some key requirements are met.

3.1 Ease of use

First, enterprise video is much more effective if people can use it on demand, either at their desk or on the move. Using enterprise video must be as easy as placing a call or setting up a collaboration session. It must be one of the tools employees are trained to use for voice or collaboration sessions. Therefore, full integration at the desktop with presence, control of the desktop phone and a collaboration application is critical (Figure 5).

Figure 5. Services that are embedded in unified video communications solutions



An additional benefit of an enterprise-wide unified video communications solution that is fully integrated with a UC solution is that the unified video can safely cross the enterprise boundaries through firewalls, or through network address translation (NAT) devices. This makes it easier for employees to use enterprise video on laptops wherever they are. Third-party partners can also be invited into a session by e-mail or by chat and can access enterprise video over the Internet in one click. In addition, integration with consumer multimedia chat networks enables video interactions between the enterprise and consumers.

By ensuring ease-of-use, unified video communications improve the overall productivity of employees and reinforce relationships with third-party partners who can seamlessly be involved in video collaboration sessions.

3.2 High quality of experience (QoE)

A high QoE is a key factor when video is used as a substitute for face-to-face meetings.

Enterprise video is now available in HD (720p30 True HD), which delivers a full-screen video session on a monitor or a high-end laptop for a HDTV-like experience. The next step for enterprise video resolution is the latest HDTV rendering (1080p Full HD). However, most users consider that the 4CIF resolution (4 times more pixels than in legacy CIF but lower than 720p30) provides a fair enough QoE on all laptops.

Whatever the resolution, a unified video communications solution that uses HD video enables full-screen peer-to-peer exchanges between users with laptops or PCs. It also supports screen options for conferencing with multiple participants, including video rooms.

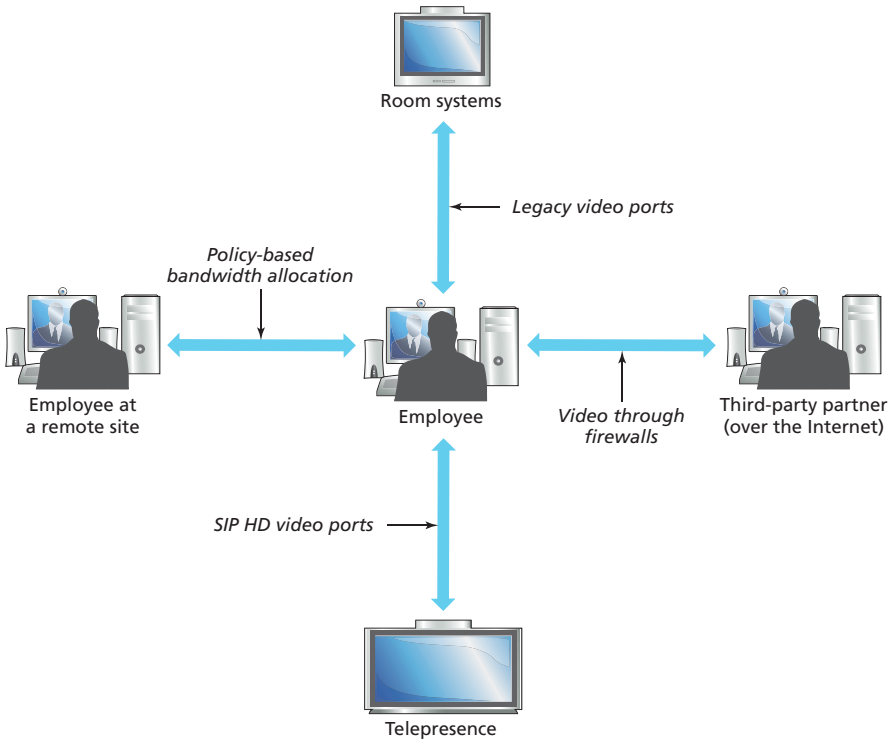
3.3 Smooth transformation to enterprise video

High-quality enterprise video requires bandwidth and QoS from the data network. For example, one 720p30 HD video throughput may reach 3 Mb/s. The bandwidth consumption may differ depending on the vendor's solution. Therefore, 4CIF resolution, which works fine at 384 kb/s, may be used by most users until enterprise laptops, PCs and network bandwidth can support True HD video or more.

A major requirement for enterprise-wide unified video communications is, therefore, support for policy-based client-server technology that enables both peer-to-peer communications and multiparty video conferencing. With this feature, administrators can then define policies about maximum allowed bandwidth and conference sizes. This allows a phased roll-out of enterprise video without requiring an immediate forklift upgrade of the entire network infrastructure. Established policies can then be updated to HD when the transformation to Multiprotocol Label Switching (MPLS) HD video-capable networks takes place.

This phased transformation approach is also critical for video equipment investments. Past conference room investments, on-going deployments of peer-to-peer HD video communications, and future telepresence rooms must be taken into account when rolling out unified video communications solutions (Figure 6). Therefore, unified video communications solutions must support legacy video technology as well as the latest H.264 video and Session Initiation Protocol (SIP) open standards.

Figure 6. Success factors for a smooth transformation to enterprise-wide video



4. Unified video communications solution blueprint

A unified video communications solution blueprint includes elements that range from MPLS HD video-capable data networks to truly unified communications.

4.1 Truly unified solution

A software-based multimedia, multiparty business communications solution is the most effective form of enterprise video because people can use it on demand, either on their desktop or when on the move. A truly effective solution must comprise a presence-aware, easy-to-use interface that supports a full set of features, including meet-me, ad hoc, and scheduled meetings with click-to-conference, instant messaging and chat applications, as well as desktop sharing, document management, integrated HD video and more.

This type of video solution is also easy to use because it is fully integrated into a collaboration environment or into UC software at the desktop. To take advantage of this capability, a single-click interface is required. The interface must offer multiple ways to initiate actions so that end users are up and running in minutes. With no large software client to download and maintain, common use barriers are removed and workers quickly appreciate the anywhere, anytime access from their office, home office, airport, or wherever they may be. In addition, the presence-driven ad hoc video communication and click-to-conference capability with both internal and external contacts save transport time and expenses.

Alcatel-Lucent offers a truly unified video solution with the Alcatel-Lucent OmniTouch™ 8660 My Teamwork™ Conferencing and Collaboration, which can be deployed as a collaboration solution or embedded in the Alcatel-Lucent OmniTouch 8600 My Instant Communicator desktop and smartphone application (Figure 7).

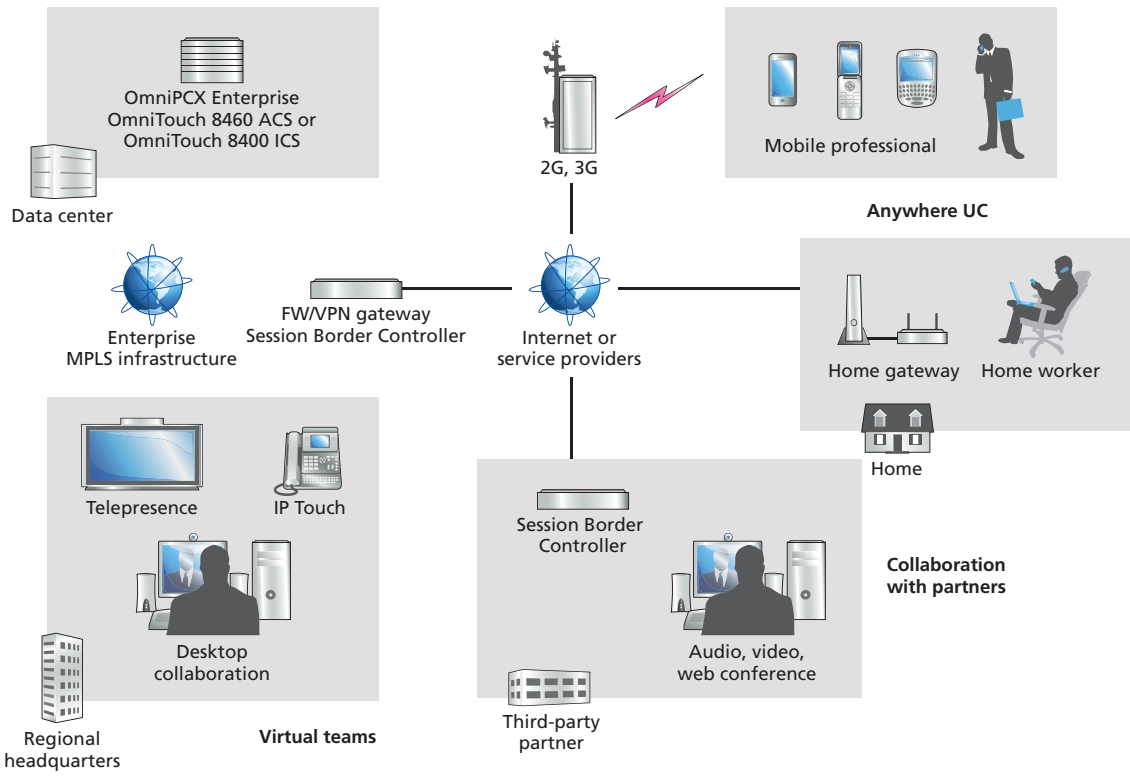
Figure 7. Graphical user experience provided by the OmniTouch 8660 My Teamwork

4.2 End-to-end infrastructure for high-quality user experience

Unified video communications solutions must be browser-based so that they are very easy to use in an enterprise communication environment or over the Internet. These solutions must use secure, web-based protocols such as SIP to go through policy-based firewalls and NAT devices. In addition, they must be fully tested with SIP Session Border Controllers (SBCs).

Unified video communications solutions must also support deployment in conjunction with enterprise IP telephony communication servers in an end-to-end SIP infrastructure. Employees can then seamlessly benefit from audio communications on their favorite desktop phones or wireless handsets and use HD video on the desktop PC, as required (Figure 8).

Figure 8. Example of an end-to-end video infrastructure



When migrating toward a generalized HD video experience, enterprises need to upgrade their HD video-capable data networks.

Therefore, an end-to-end video infrastructure requires a broad portfolio of IP networking products that support MPLS for the enterprise. This portfolio must include products that have characteristics that are suited for specific areas of the network, such as the core, data centers and edge networks. With MPLS, enterprises have the ability to converge multiple applications, such as voice, video and data, over the same IP/MPLS network. The ability of MPLS to apply QoS parameters to high-priority applications, such as enterprise video, ensures that business-critical data has guaranteed delivery over the network.

Alcatel-Lucent offers an end-to-end portfolio that includes everything enterprises need, from MPLS networks to unified video communications applications. This portfolio includes:

- An IP telephony server that enables communications for all business profiles (Alcatel-Lucent OmniPCX™ Enterprise Communication Server)
- Unified communications and collaboration applications that improve the communication efficiency of employees (OmniTouch 8660 My Teamwork)
- A complete communications suite for a unified experience on the desktop PC, desktop phone or smartphone (Alcatel-Lucent OmniTouch 8400 Instant Communications Suite for Enterprise)

The resulting converged solution supports the future ubiquitous deployment of enterprise video solutions. SBCs are also available.

4.3 Low TCO and smooth transformation

Unified video communications solutions that minimize upfront investments, that are very scalable, and that enable centralized deployments with easy-to-use web management reduce TCO and support a smooth transformation.

Upfront investments can be minimized in several ways. Unified video communications solutions must support HD video for high-quality peer-to-peer and conferencing sessions with multiple display modes, including full-screen video. The solutions must also support lower resolutions, which can be defined by the administrator should the data network be unable to transport HD video today.

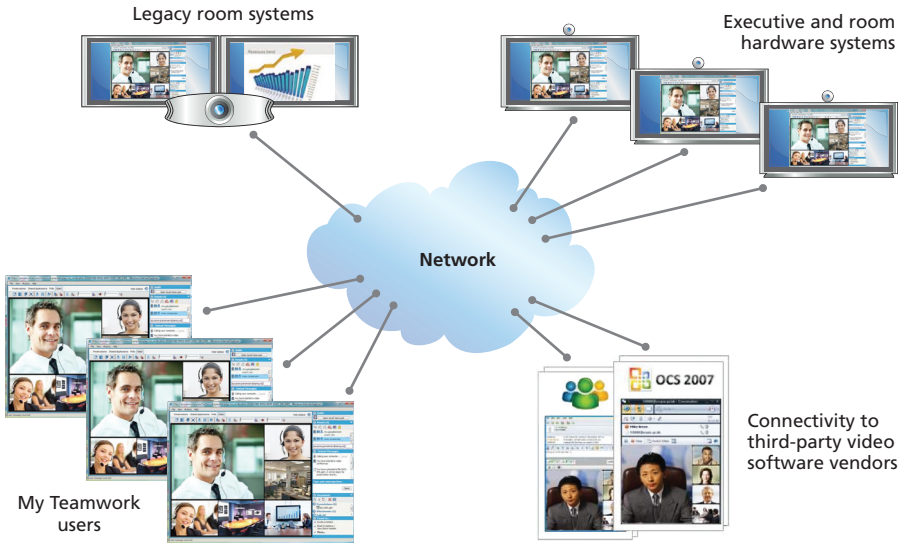
A smooth transformation requires the solutions to leverage past and current investments. Therefore, unified video communications solutions must support legacy video systems such as TDM or H.323 conference rooms, as well as connectivity to SIP telepresence rooms and to SIP high-end video endpoints (Figure 9). Legacy H.261 and state-of-the-art H.264 video coders must also be supported.

The Alcatel-Lucent OmniTouch 8660 My Teamwork, in conjunction with RADVISION for multiparty conferencing and connectivity to legacy video systems, fully meets these requirements.

The OmniTouch 8660 My Teamwork can also be configured to connect to third-party video chat applications such as Windows Live™ Messenger or Microsoft Office Communications Server® 2007 directly or via the RADVISION multiparty conferencing unit.

The Alcatel-Lucent solutions provide a smooth transformation to unified video communications while limiting upfront investments and TCO.

Figure 9. Example of unifying several types of video systems



5. Conclusion

The latest enterprise HD video solutions help medium and large enterprises reduce costs, improve team collaboration and provide better customer service. When enterprises deploy these solutions, they face several challenges related to the transformation of the communication network infrastructure: silos of video technology, insufficient QoS and abrupt transformation pace.

Enterprise video solutions that are integrated into UC suites enable employees and third-party partners to benefit from video interactions because a unified solution is very easy to deploy and use, even across enterprise firewalls. Thus, no silo remains between users.

The latest HD video resolutions improve the user experience. However, they require bandwidth and QoS. Enterprise video solutions that provide control of the requested bandwidth enable the deployment of video communications even if the network infrastructure is not yet capable of supporting HD.

Finally, enterprise video solutions that provide connectivity to legacy video systems and to telepresence rooms protect investments and provide a smooth transformation toward a full-fledged video service.

Alcatel-Lucent offers an end-to-end portfolio of products, from MPLS networks to unified video communications applications, which support a smooth transformation toward ubiquitous enterprise HD video.

6. Acronyms

4CIF	four times Common Intermediate Format with a 704x576 pixels resolution
720p30	True HD video format with 720 pixels of vertical resolution, progressive scan and 30 frames per second rate
1080p	Full HD video format with 1080 pixels of vertical resolution, progressive scan
CIO	Chief Information Officer
CIF	Common Intermediate Format with a 352x288 pixels resolution
HD	high definition
MPLS	Multiprotocol Label Switching
NAT	network address translation
QoE	quality of experience
QoS	quality of service
SBC	Session Border Controller
SIP	Session Initiation Protocol
TCO	total cost of ownership
TDM	Time Division Multiplexing
UC	unified communications

7. References

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