WAINHOUSE RESEARCH **WHITE PAPER**

Integrating Microsoft OCS/Lync Video with Group and Telepresence Video Systems

It's Anything but Turnkey. How an Experienced vMSP can Help You Stay Out of Trouble by Avoiding the Pitfalls.

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Executive Summary

Mass video adoption in the enterprise will be achieved through unified communications clients like Microsoft Lync and Microsoft Office Communicator. At the same time, high definition group video and telepresence usage is growing tremendously. Trying to integrate desktop video through a UC client with group or telepresence video is no small task, particularly if there is a global UC client deployment and a similar global deployment of both group and telepresence video systems.

ACT has encountered numerous pitfalls while integrating 100,000+ OCS and Lync video endpoints with group and telepresence systems including the following:

• MCU ports locking up with OCS	• Pinholes required in the internal firewall
• Call admission control and bandwidth management issues	• Cisco Tandberg OCS/Lync gateway licensing issues
• Overcoming the lack of AES encryption in OCS/Lync	• Auto launching OCS/Lync to accept an incoming call
• CX5000 (Roundtable) endpoints failing to connect	• OCS/Lync answer with audio only by default

Organizations that try to integrate video from OCS or Lync with group or telepresence systems often run into unexpected “gotchas”. These may range from licensing idiosyncrasies in infrastructure components, to bridge ports locking up, to calls failing to tear down automatically. Regardless of the reason, integrating video from Lync or OCS with group systems in a scalable fashion is anything but turnkey.

Large organizations requiring or desiring OCS/Lync integration with group/telepresence systems in a scalable fashion will likely have more success relying on an experienced video managed service provider. In this white paper we explain some of the common pitfalls found when trying to integrate OCS/Lync with group/telepresence systems. We describe five measurable ways a video managed service provider can impact a video deployment, and we conclude with a description of a video managed service provider that has integrated over 100,000 OCS/Lync video endpoints with over 2,000 group/telepresence systems.

Getting Personal with Mass Video

The enterprise video market is in the process of bifurcating into two diverging branches: group/telepresence and personal. The group and telepresence branch is targeted primarily for conference rooms or specially designed telepresence suites in which individual participants are full or actual size and the video experience provides high definition images accompanied by wide band audio.

Enterprise personal video, on the other hand, comes in a number of form factors including 1) dedicated personal video units for executive desktops often costing thousands of dollars, 2) video phones in which a video screen has been mounted on or integrated with a telephone, 3) desktop software in which video is a feature an application, and 4) tablet and smart phone devices.

Where people once asked, “when will video come to the masses?” the resounding response is that it has arrived! In fact, Wainhouse Research believes the overall direction of the market is toward large deployments of personal conferencing solutions complemented by small deployments of group and telepresence systems. Ratios between personal video solutions and these group/telepresence systems may be 100 to 1 or even as high as 1000 to 1.

A Changing Video Market

The overall direction of the market will be towards large deployments of personal conferencing solutions complemented by small deployments of room systems. Unified communications (UC) will be the platform by which personal videoconferencing will gain mainstream acceptance. Software-based UC solutions are bringing video into the enterprise workflow.

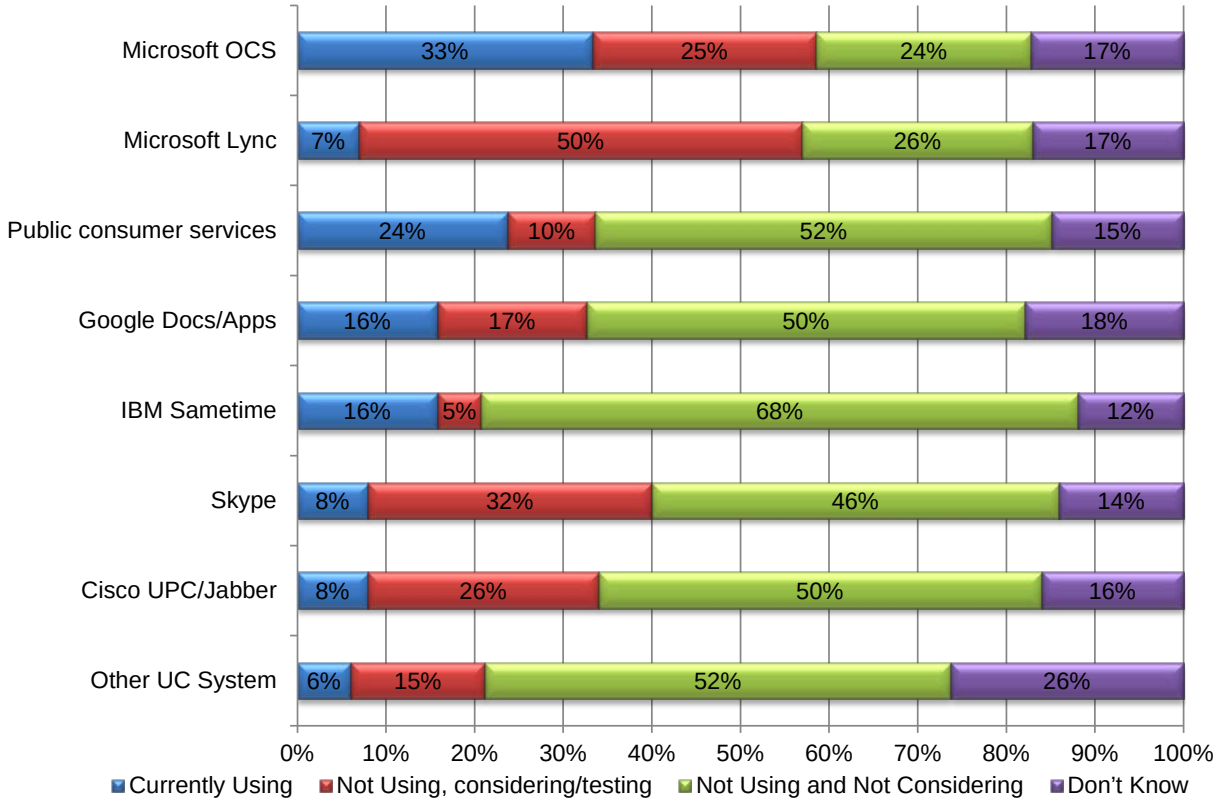
Because many personal videoconferencing solutions are not sold as videoconferencing products per se, but rather are based on pads, tablets, mobile handsets, and personal computers for which video conferencing is merely one of many functions they can do, these software-centric devices are totally outside of our market forecast. Yet, they are becoming an important cog in the overall enterprise videoconferencing machinery, and we expect them to become increasingly important due to their sheer volume as unified communications offerings from Microsoft, Cisco, IBM, Avaya, and a host of others enable video on the preferred devices for hundreds of millions of enterprise users.

Multiple individual contributors using any of these personal video devices today regularly require admittance to meetings involving group and telepresence solutions. And with the arrival of "social business" people will need to interact using video with people both within and outside their organization. Consequently, carriers, networking companies, and video managed service providers are strengthening their market reach and capabilities by enabling excellent personal with group video experiences along with video exchanges for business-to-business (B2B) video calling.

Microsoft Lync/OCS is the Desktop Solution of Choice

Over the past 5 years, Wainhouse Research has surveyed a large number of end users about their plans for unified communications and the deployment of unified communications environments. Every year, more enterprises deploying or considering deploying unified communications solutions are planning to deploy Microsoft's OCS or Lync on their desktop computers.

Figure 1. Enterprise preferences toward particular UC solutions. Respondents were asked, "What is your organization's current disposition with respect to each of the following UC environments?"



Source: Wainhouse Research End User UC Survey, July 2011

Our most recent survey data from July 2011 shows that over half the respondents surveyed indicated that they either have deployed or will deploy OCS or Lync. As a consequence, enterprises need to be thinking about how they will integrate desktop video from OCS and Lync users with point-to-point and multipoint meetings involving those using group and telepresence systems.

Although it may seem simple conceptually to integrate OCS and Lync video with group or telepresence systems, the fact is that it is never turnkey. Various vendors have developed devices or methods to enable video integration between their endpoints and Microsoft Lync as Wainhouse Research has pointed out in the article titled, "Options for Integrating Third-Party Video Solutions with Microsoft Lync[1]". However, there are still many, often undocumented, "gotchas" enterprises may encounter when attempting to link OCS/Lync video with a group or telepresence system.

Pitfalls with OCS/Lync Video Integration

Service providers and practitioners have reported numerous challenges with respect to OCS and Lync video integration. We list several generally known issues below, as well as some that are generally not known.

Pitfalls Abound and Experience is Vital

A vMSP experienced in installing, debugging, and delivering conferencing services can significantly shorten the "time-to-benefits" for many enterprises. This may be doubly true if the enterprise is integrating group and telepresence video communications solutions with an enterprise unified communications deployment.

1. Quality of Service – When Office Communications Server was released, Microsoft was aware that it had no call admission control or bandwidth limitation mechanisms. Rather, Microsoft suggested that its audio and video codecs would adjust automatically to consume lower and lower bandwidth should network congestion become a problem. Also, the company claimed that its codecs could withstand high network jitter. When Lync, OCS's successor, became generally available, Microsoft incorporated a bandwidth limitation mechanism.

   The problem for many large organizations is that migrating from OCS to Lync, while on their roadmaps, is not trivial. Consequently, they still use OCS, and they need to integrate it with other solutions. Thus, the organization needs to find a mechanism for controlling bandwidth lest video usage overwhelm the network.
2. Many organizations have found only by trial and error that OCS and Lync require pin holes to be created in internal firewalls so that video will properly traverse the firewall.
3. OCS does not always respond properly to call control messages. Some companies report that MCU ports freeze up with OCS calls, and when the call is reinitiated, additional ports are consumed without the previous port being cleared, thus tying up expensive MCU ports that are not really in a call.
4. When a user or conference tries to call an OCS user by video and OCS is not launched, then the call does not complete. One service provider with significant OCS deployment experience has found a workaround through trial and error.

[1] Davis, Andrew and E. Brent Kelly, "Options for Integrating Third-Party Video Solutions with Microsoft Lync", http://www.nojitter.com/post/229500735/options-for-integrating-thirdparty-video-solutions-with-microsoft-lync.

5. Some companies using Cisco Tandberg VCS gateways have reported licensing idiosyncrasies when multiple VCS gateways are clustered, which results in traversal and non-traversal[2] licenses not being distributed correctly. There are workarounds, but finding them may be trial and error. Cisco is aware of the issue and is attempting to patch the problem while avoiding the introduction of software defects.
6. OCS and Lync do not support AES encryption, which is a standard function on most group and telepresence systems. Consequently, organizations requiring AES encryption need to find a way to enable it in an OCS/Lync video call.
7. When calling out to an OCS or Lync system, OCS's/Lync's default behavior is to answer with audio only. Consequently, users need to be trained on how to escalate the call to video by clicking on the camera button on the user interface. In some actual deployments, the help desk has been called because users did not know how to escalate the call to video. A workaround is to set OCS/Lync to auto answer with video, but this requires changing a setting manually on every workstation for which audio answering with video is preferred.
8. End users who have used HD group and telepresence video solutions are often surprised at the low quality when an individual Lync or OCS participant joins a call. Hence the user experience is significantly different, and end users must be trained to have the proper expectations.
9. One organization using CX5000 endpoints (the "RoundTable" devices) reported that in their environment these devices failed for nearly 1/3 of the users between 25% and 40% of the time. The service provider worked with Microsoft, and Microsoft found that a "Global Policy Object" had to be changed. In addition, a group video system's "presence status" may not always be displayed correctly in the Office Communicator/Lync client interface due to a bug which was found in the VCS software; a software revision will be required to fix this software defect.

Enterprises considering using OCS/Lync for videoconferencing should consider how they will overcome these obstacles plus myriad other little "gotchas" that they will encounter. Wainhouse Research believes that one way to do this would be to rely on a video managed service provider (vMSP) experienced in installing, debugging, and delivering video conferencing services involving OCS/Lync and group/telepresence video systems.

A Reference Architecture for OCS/Lync Video Integration with Group/Telepresence Systems

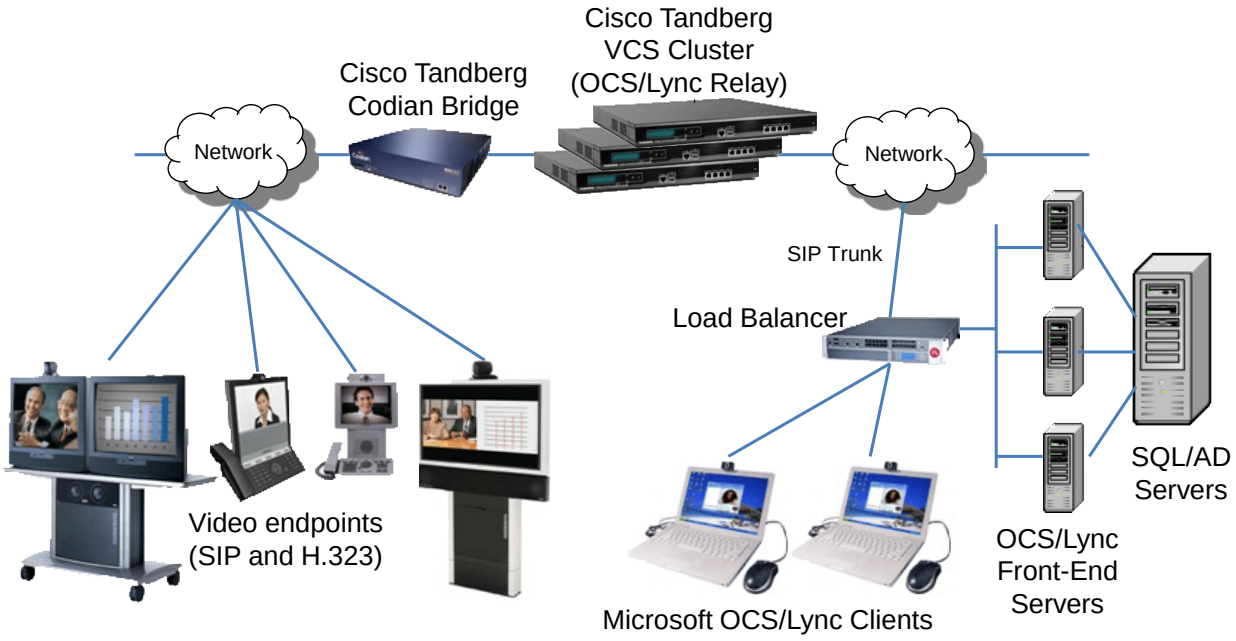
As referenced in the Wainhouse Research article published on NoJitter.com, there are a number of ways to integrate OCS and Lync with video endpoints, but enterprises need a standard way that will allow OCS and Lync to exchange video with any SIP, H.323, and H.320 endpoint the enterprise wishes to use. One such mechanism is illustrated in the figure below.

In this architecture, multiple Cisco Tandberg VCS clusters provide the gateway functionality between OCS/Lync and the rest of the video network. These VCS clusters provide a clear demarcation point between what the enterprise runs and what the video network service provider (vNSP) manages: enterprise IT people manage and maintain the individual OCS/Lync workstations and the internal network while the vNSP manages the VCS clusters, the video bridges, and all group and telepresence endpoints.

[2] Cisco Tandberg VCS devices have two types of licenses: traversal and non-traversal. When an organization buys the VCS, they get 10 licenses for SIP to SIP calls or 100 licenses for SIP to 323 calls. If a call is SIP to SIP, then a non-traversal license is used. If a call is SIP to H.323, a traversal license is used. Thus, non-traversal SIP-SIP licenses are 10 times more expensive than SIP-H.323 licenses, so it may be in a customer's interest to have its group endpoints configured in H.323 mode versus SIP mode to take better advantage of the VCS hardware.

With this architecture, any group/telepresence video device can call any Lync/OCS PC and any Lync/OCS PC can call into any group or telepresence unit or multipoint meeting on the entire network.

Figure 2. A global video network using Cisco Tandberg VCS clusters and Codian bridges. VCS clusters and Codian bridges are located in each regional video data center.



Measurable Benefits a Video Managed Service Provider Delivers

"A videoconferencing managed service provider (vMSP) is a company that provides a support service including a videoconferencing-savvy help desk combined with remote monitoring and management of videoconferencing endpoints and infrastructure[3]." Because integrating Lync or OCS with group and telepresence solutions has many "gotchas" and hidden complexities, organizations considering such a solution would do well to consider using a vMSP to help with this integration.

A vMSP may or may not deliver short term savings to its clients, and Wainhouse Research does not believe cost savings should be the primary driver when considering a vMSP[4]. Rather, vMSPs provide organizations with five measurable benefits, including:

1. **Increased asset utilization**: OCS/Lync and the group/telepresence videoconferencing investments provide a return only when they are used. Thus, a major goal of deploying these solutions should be to drive additional utilization. A vMSP can support this goal in two ways. The first is to ensure a reliable, consistent, and high quality videoconferencing experience. Good video experiences will not only allow people to host productive sessions, but it will also motivate them to have additional video meetings. The second effort to drive utilization is to create and manage a "driving adoption" program. This usually involves a variety of marketing tasks such as creating "frequent flyer" type programs, delivering promotional materials at departmental meetings, and making training sessions available for managers and administrative support staff. vMSPs will work closely with corporate travel and HR departments, for example, to make sure

[3] Davis, Andrew W. and Ira Weinstein, "Video Conferencing Managed Services: A Market Overview", Wainhouse Research, February, 2010.
[4] vMSPs can provide short term savings if a client uses the vMSP's bridging infrastructure versus buying bridging infrastructure.

that their internal “clients” know about videoconferencing resources and how these tools can help people do their jobs better, smarter, and faster.

2. **24 x 7 support and protection from staff turn-over**: Clients with worldwide videoconferencing operations need 24 x 7 support services. However, providing internal staff with conferencing expertise to meet “follow the sun” operations can be very challenging. A vMSP, however, can do this in a relatively cost-effective manner because providing such support is the vMSP’s core business. Another benefit of vMSP support is that the vMSP isolates the client from a variety of everyday staffing issues such as covering vacations, local holidays, sick leaves, job changes, promotions etc.
3. **Faster and more complete deployments**: The time delay between making a decision to implement videoconferencing and actually delivering conferencing services can be very long with some clients. A vMSP experienced in installing, debugging, and delivering conferencing services can significantly shorten the “time-to-benefits” for most customers. This is particularly true when using Lync/OCS with group/telepresence systems: an experienced vMSP who knows the issues and how to mitigate them will provide users with solutions faster and will give them a consistently good experience.
4. **Improved budgeting and cost control**: A comprehensive vMSP program will provide an organization with a clear understanding of what its costs will be, and how these costs may or may not change over the life of the contract. Many vMSP customers are able to negotiate fixed monthly cost contracts and thereby gain a very high level of cost control. A vMSP may be able to provide other budgeting and cost benefits to the client as well – such as leasing programs, equipment buy backs, and the conversion of CAPEX to OPEX where such a conversion is desired. For most organizations running OCS or Lync, the company buys the OCS/Lync licenses from Microsoft and the PC’s to run them on while the vMSP can provide OPEX arrangements on the endpoints, bridging and gateway infrastructure, and the managed service.
5. **Improved management of conferencing resources and processes**: When considering a vMSP, it is important to include clear service level agreements, detailed usage and performance reports, and a single point of accountability. The result for organizations using a vMSP should be a stronger degree of control over the conferencing environment, and a significant decrease in the management burden.

ACT Conferencing is an Experienced OCS/Lync Video Managed Service Provider

ACT Conferencing has been a significant provider of audio and web conferencing services for many years. A little known fact is that ACT is also one of the most experienced video managed service providers when it comes to integrating OCS/Lync with group video systems.

ACT got into the business of working with Microsoft OCS for video communications in 2006. Through a partnership with a major carrier and its own direct sales organization, the company now has over 100,000 OCS/Lync endpoints under video management, and each endpoint is integrated with one or more of the 2,000+ group and telepresence video systems ACT manages. The company supports a rapidly growing number of multipoint video calls every month in which some individuals are using OCS/Lync while others are using group or telepresence endpoints from Cisco Tandberg, Polycom, and other video endpoint providers. Group video endpoints participating in these calls are a mix of SIP-based, H.323-based or legacy H.320 systems.

In a single global customer deployment – which we believe is one of the largest OCS/Lync deployments in the world – over 60,000 OCS/Lync endpoints are managed, each with video capability and the ability

to integrate with group and telepresence video units for multiparty videoconferencing meetings. To assure high service quality, ACT has dedicated team of people and resources to OCS/Lync video deployments. With VNOCs in the USA, UK, Hong Kong and the recent addition of a new VNOC in Malaysia, ACT provides 24x7 service to multinational organizations for which OCS/Lync video integration with group and telepresence is a critical business function.

As the videoconferencing market dichotomizes into group/telepresence and personal uses, it is likely that a significant portion of personal video usage in enterprises will be done on unified communications desktops running Microsoft OCS or Microsoft Lync. Because ACT Conferencing runs video meetings every day in which OCS and Lync are integrated with group and telepresence systems, the company has developed the unique experience required to provide a consistent, reliable managed video service for organizations deploying OCS or Lync that wish to use them as an integral part of their overall videoconferencing strategy.

An experienced video managed service provider will

1. Increase the utilization of both desktop and group/telepresence video assets by making them available and interoperable for anyone in the organization. Individuals can participate in video conferences using inexpensive OCS/Lync endpoints with groups using room or telepresence systems.
2. Provide 24x7 support to ensure consistent, high quality video meeting experiences for both desktop and group system users.
3. Accelerate video deployment throughout an organization so that everyone can reap the tangible and the intangible benefits video delivers.
4. Assure that any “gotchas” associated with desktop video integration will be properly handled and overcome in order to avoid user dissatisfaction.
5. Provide service at a fixed monthly price so that video costs are properly controlled and kept within budget.
6. Ease the management burden on the organization deploying video through strict service level agreements and pre-determined accountability boundaries.

Companies considering global scale for their video deployment in which desktop video systems will be integrated with group or telepresence systems, and in which legacy H.323 and H.320 systems are also to be used, will be well rewarded by partnering with a reliable, experienced video managed service provider.

About the Author

E. Brent Kelly is a Senior Analyst and Partner at Wainhouse Research specializing in unified communications applications and enabling infrastructure. Brent has authored numerous reports and articles on unified communications including mobile unified communications solutions, detailed reviews of Microsoft's UC strategy as embodied by Office Communications Server, IBM Lotus Sametime and IBM Lotus' UC^2 Strategy, and Telephony-Based Unified Communications, which is a thorough description of PBX vendor unified communications offerings. He has also written reports about migrating to IP communications, video network service providers, and the collaborative reseller channel. Dr. Kelly has authored articles for Business Communications Review Magazine, NoJitter.com, and he has taught workshops in North and South America, Europe, and Australia as well as at major industry events such as Enterprise Connect (formerly called VoiceCon). With over 21 years experience in developing and marketing highly technical products, Brent has served as an executive in a manufacturing firm where he developed and implemented a manufacturing, marketing, and channel strategy that helped land national accounts at major retailers. Previously, he was part of the team that built the devices Intel used to test their Pentium microprocessors. He has also led teams developing real-time data acquisition and control systems, and adaptive intelligent design systems for Schlumberger. Brent has worked for several other multinational companies including Conoco and Monsanto. Dr. Kelly has a Ph.D. in engineering from Texas A&M and a B.S. in engineering from Brigham Young University. He can be reached at bkelly@wainhouse.com.

About Wainhouse Research

Wainhouse Research, www.wainhouse.com, is an independent market research firm that focuses on critical issues in the Unified Communications and rich media conferencing fields. 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 a variety of reports that cover the all aspects of rich media conferencing, and the free newsletter, *The Wainhouse Research Bulletin*.