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*50 Years of Growth, Innovation and Leadership*

# Overcoming the Challenges of Mobile Video Conferencing

A Frost & Sullivan  
White Paper

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## EXECUTIVE SUMMARY

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The value of video conferencing is well understood: a recent Frost & Sullivan survey of more than 200 C-level executives shows that the technology is in use in 51 percent of organizations, and is personally used by 41 percent of respondents. The primary driver is cost reduction, although video conferencing is also valued for its ability to improve productivity and collaboration across geographically dispersed teams, and for improving customer service.

Video conferencing also meets or exceeds more than 90 percent of users' expectations, which explains why almost half of them plan to expand their usage in the next 12 months. Frost & Sullivan believes that much of that expansion will come in the form of mobile video solutions, which enable usage across an organization, opening up the technology to every employee who needs it, regardless of where he is located or what type of network or device he is using.

But as valuable as mobile video conferencing can be, companies must pay close attention to how they implement the technology for maximum effectiveness and return on investment. The growth of individual endpoints means greater demand for multipoint conferences. Traditional models employ a hardware MCU to integrate one video system with another and allow for multi-point conferencing. But the hardware MCU has its drawbacks:

- It's not scalable, technically or economically.
- It doesn't perform well over the lossy wireless networks associated with mobile devices.
- It can't integrate personal devices with group systems without performance degradation.

Instead, IT managers should consider a mobile video conferencing solution that replaces a hardware MCU with a software-based, client-server architecture. That allows for a scalable solution that is more cost-effective, since it can leverage commodity hardware and software, and enable virtualization for better management and performance. Coupled with adaptive video technologies, it also significantly boosts reliability across non-QoS enhanced networks. And it ensures video conferencing can be extended to all employees, regardless of the device they happen to be using.

This paper will examine the move toward mobile video conferencing, discuss the limitations of traditional video conferencing technology when it comes to supporting mobile users, highlight the issues IT managers must consider as they look to deploy a new system, and present one vendor's solution to the challenges, enabling better performance and a much higher ROI.

### *Why MCU-Based Solutions Don't Work*

- *Poor Scalability*
- *High Cost*
- *Unreliable Wireless Performance over Variable Networks*
- *Difficult Integration with Desktop, Room-Based and Immersive Telepresence Systems*

## **THE VALUE OF MOBILE VIDEO COLLABORATION**

Two of the biggest trends in business are converging to make mobile video conferencing a key component of any employee's technology toolset: BYOD ("bring-your-own-device," otherwise known as the "consumerization of IT"), in which employees find, buy and use their own technology at work; and collaboration, by which employees who are based in disparate locations use technology to work together, virtually, with colleagues, partners, suppliers and even customers.

### **Extended Reach and Accessibility**

As more people use their personal smart phones and tablets at work—complementing the notebook PCs they already have from IT—they are looking for video conferencing solutions that let them meet face to face, without the high cost of travel. Mobile video conferencing lets employees communicate and collaborate from anywhere, ideally on any device. This ensures usage, since increasingly, people always have their mobile devices with them, whether they're traveling for business, commuting to and from the office, or working from home or a remote site.

Ubiquitous wireless networks also ensure that everyone will have access to virtual collaboration solutions whenever they need them. Today, it is possible to get connected from just about anywhere—be it the coffee shop down the street, an airport gate area, a hotel room, or a commuter train.

### **Simplicity**

The key for mobile video conferencing success is to keep it simple. If users are comfortable with their devices, and the applications that run on them, the result is much greater adoption. To enable this, companies should provide support for multiple modalities from the same device.

But they should also support other types of mobile video communications, including docked systems like a desktop video phone and HDMI-connected displays, to allow for ad hoc huddling around room-based systems.

In all cases, the goal is to let employees communicate and collaborate untethered, giving them video conferencing wherever they are and whenever they are on the go.

### **Greater Workflow Integration**

Video collaboration that works where you do supports in-the-field applications across a wide range of industries and job roles. Such face-to-face communications allow for the parsing of subtle communications clues, including facial expressions and body language, that allow participants to make the best possible decisions, in real time, even under stressful or dramatic conditions. And since cameras can also be used to capture live events, they make it easy for users to send photos or video of specific issues, problems and events during a meeting.

- *Military:* With mobile video conferencing, soldiers in the field can collaborate with officers based state-side or on other battlefields, making decisions in real time based on the most current information, and ensuring that strategic, often difficult decisions are made under the most ideal circumstances—i.e., face to face. Participants can also share content, such as maps, images of targets or troop movements, live photos of battlefields and so on, which are all critical for successful operations.
- *Education:* Mobile video lets schools expand their offerings to a wide range of students, including K-12, college, and post-graduate level learning. By letting students watch and participate in classroom lectures and small-group collaboration sessions from anywhere and on any device, schools make it easier for non-traditional learners—including home-schooled or sick children, and working adults—to take advantage of a range of educational opportunities, easily and cost-effectively. Video also expands the total addressable market of students than an institution can serve, representing an increased revenue opportunity for tuition-based programs.
- *Emergency medicine:* By using mobile video communications in the ER, doctors can easily collaborate on difficult cases with a patient's primary care physician or with specialists located in different parts of the world. This improves patient outcomes and boosts the hospital's bottom line.
- *Construction:* With mobile video conferencing, construction crews can collaborate with subs and suppliers without even leaving the job site. Mobile communications make it easy to show partners and clients what's happening in the field, allowing them to efficiently provide the right materials and weigh in on solutions.
- *Manufacturing:* So much of manufacturing is done around the world, with suppliers located in one region, designers and engineers in another, and production in yet a third—with company executives based at headquarters or somewhere else entirely. Video conferencing can help bring all the disparate players together, and since it is a visual medium, it makes it easy for suppliers, designers and producers to see what they're talking about as they collaborate on the process. That can dramatically reduce cycle times and improve outcomes—and it saves companies money when they don't have to fly participants around the globe for every new stage of a project. And with a rear camera that delivers “see what I see” capabilities on mobile devices, it's easy for, say, a manufacturing engineer to show a remote design engineer manufacturability issues for new design transfers.

## REQUIREMENTS FOR ACHIEVING MOBILE VIDEO CONFERENCING

To enable mobile visual collaboration among their employees, partners and customers, some companies make do with consumer services like Skype and Facetime. But as any IT manager knows, such services do not offer the security and control of an enterprise-grade solution. That makes them risky options for most organizations. Frost & Sullivan recommends that companies deploy a business-grade mobile video solution that offers the following benefits:

### *Step-by-Step Implementation Guide*

- *Assess use cases and demand for mobile video conferencing in your organization.*
  - *Get the core client/server video infrastructure in place, with the ability to connect to your existing video endpoints.*
- *Assess bandwidth growth needs based upon demand analysis, including public wireless access plans, and address needs.*
- *Roll out mobile and desktop soft clients with end-user training for product knowledge and application awareness, and best practices.*
- *Over time, replace fixed-room legacy endpoints that are compatible with more advanced standards to eliminate need for transcoding.*

- Highly scalable and distributed multi-point infrastructure. As the number of personal endpoints grows, the demand for multi-point grows with it. Selecting a solution that scales cost-effectively with demand is essential for a successful mobile video strategy. This will ensure all employees who need it have access to mobile video conferencing, and that they can connect to their colleagues from anywhere and on any device.
- Consistent high performance over lossy, non-QoS enhanced networks. Data shows that employees simply will not use a new technology if it doesn't deliver a quality experience every time. But with more people connecting into conferences over the reliably unreliable public Internet or jittery cellular networks, only a mobile video service designed for lossy networks will ensure that users get a high-performance experience every time they use it.
- Integration with fixed location systems without performance degradation. While the trend may be toward mobile video communications, many organizations have already invested in room-based and telepresence systems—and they may continue to do so for key strategic needs. It is absolutely critical that any mobile solution integrate with other video conferencing endpoints, so that all employees can participate in virtual meetings from anywhere—even the office.
- Soft clients for mixed mobile device environment. With more and more employees bringing their own devices into the workplace, it is no longer possible for IT to know exactly what endpoints any given employee may need to use to connect to mobile video conferencing. A soft client that supports a range of devices is the only way to ensure all users will have access to the technology—on a device they are comfortable with and will use productively all the time.

### **HOW ONE VENDOR HANDLES THE CHALLENGES OF A MOBILE VIDEO SOLUTION: SPOTLIGHT ON VIDYO**

1. Replaces the hardware MCU with a distributed, software-based client/server architecture.
  - Lowers costs by using commodity hardware and software
  - Creates a distributed multipoint fabric for WAN optimization.
  - Lets companies use a virtualized infrastructure for higher availability and reliability.
2. Routing, not transcoding, allows for capacity on demand and agility in deployment.
  - Eliminates the latency and performance impact of transcoding for multi-point conferences and cascading.
  - Reduces the processing requirement, so infrastructure can be virtualized.

3. Offers a Codec built for lossy networks.
  - SVC vs.AVC for superior network-error resilience.
  - Lets conferences operate over commodity, general-purpose IP networks.
4. Adds adaptive video technology at the core of the network for individually optimized experiences.
  - Superior performance can be achieved over any wireless network (3G, 4G, Wi-Fi).
  - Addresses rate and resolution matching for seamless integration with room-based and telepresence systems.
  - Manages bandwidth by consuming only what is required at a given endpoint.
5. Enables use of mobile computing platforms with varying capabilities.
6. Lets employees use the devices they already have, are comfortable with, and carry everywhere.

## CONCLUSION

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As more employees work in a virtual environment—far from their colleagues, partners and customers—they are looking for ways to communicate and collaborate using mobile devices. Often, these devices are their own—purchased by them and brought in from home. This gives them the advantage of familiarity and comfort, which leads to greater use.

Companies that want to take advantage of this new way of working should offer their employees a mobile video conferencing solution that works on any device and across any network; that relies on a software-based system for connecting multiple parties, even on lossy networks without QoS enhancement; and that delivers a high-quality experience regardless of the user's device or network limitations. This alone will lead to better performance, higher ROI, and a positive impact on the bottom line.

**Silicon Valley**

331 E. Evelyn Ave. Suite 100  
Mountain View, CA 94041  
Tel 650.475.4500  
Fax 650.475.1570

**San Antonio**

7550 West Interstate 10, Suite 400,  
San Antonio, Texas 78229-5616  
Tel 210.348.1000  
Fax 210.348.1003

**London**

4, Grosvenor Gardens,  
London SW1W 0DH, UK  
Tel 44(0)20 7730 3438  
Fax 44(0)20 7730 3343

877.GoFrost • [myfrost@frost.com](mailto:myfrost@frost.com)  
<http://www.frost.com>

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For information regarding permission, write:

Frost & Sullivan  
331 E. Evelyn Ave. Suite 100  
Mountain View, CA 94041

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