



REFERENCE PAPER

Multipoint Video Conferencing: Is There a Smarter Approach to Growth?



LifeSize® Bridge™
The Foundation for Your Intelligent Video Network

REFERENCE PAPER

Multipoint Video Conferencing: Is There a Smarter Approach to Growth?

Economic Uncertainties Require New Options

In today's economic environment, organizations are tightening budgets and streamlining wherever possible. Despite financial constraints, IT executives must continually seek out innovative, cost-effective technologies to improve business-critical communications, collaboration and productivity. One such solution is high definition multipoint video conferencing. As an alternative to expensive and time-consuming travel and audio conferencing, HD video conferencing has gained widespread usage. In delivering video technology to a broad user base, IT management takes the lead in strategically building infrastructure, capacity and access for an entire organization—a monumental task that requires a smart, creative approach. When an organization is ready to allocate dollars to video conferencing, the question has become not when, but how?

Companies that deploy multi-party video conferencing often predetermine port capacity to meet forecasted demand; however, how to best scale to that demand isn't always clear. When following a traditional method, most organizations pay for multipoint user port capacity upfront, assuming future growth and demand. The industry terms this the **inside-out** (or vertical) approach: investing in infrastructure first and allowing demand to catch up later.

Another option is the **outside-in** (or horizontal) approach. If resources are scarce and a large, upfront investment into the unknown isn't practical, as is frequently the case, the alternative outside-in approach scales horizontally as an organization's needs grow. It means investing modularly—spending on immediate requirements without guessing or overspending on what may or may not be needed at a future time or place.

This paper will examine and compare both approaches, addressing costs, technical capabilities, quality, ease of use and management. It will highlight organizational challenges and present foundational solutions to expand and improve delivery of HD quality multi-party video conferencing.

LifeSize offers IT an intelligent solution with the ability to do more with existing budgets. Organizations can conserve resources by paying only for what is needed today while providing greater, widespread access to HD quality video.

The Traditional Multipoint Approach

Inside Out: Buy Now, Use Later

With the traditional vertical approach to multipoint video conferencing, IT buyers predetermine an organization's current and future HD video conferencing needs. This method of forecasting involves a considerable amount of guesswork and risk. Based on estimated demand, companies invest significant dollars in expensive infrastructure systems. This upfront investment can monopolize much of the budget and leave fewer dollars to dedicate to HD video endpoints. In this scenario, the user experience can suffer and the technology that devoured so much upfront capital may not be utilized as expected. ***Although the end result gives users HD video conferencing capability, the high cost may limit the technology to few in the organization. The inside-out methodology can sacrifice quality and underutilize infrastructure.***

CASE STUDY

Traditional Approach

Company

Medium-sized organization with 20 locations and weekly engineering, sales and marketing meetings.

Challenge

Currently, only senior executives have access to Full HD conferencing, but more employees are requesting access. In addition, tightened budgets require a reduction in travel. Despite company-wide demand, the buyer is unsure of how many people will use HD and how much to purchase. Recession has slowed growth, but expansion is expected next year.

Return on Investment Scenario

IT administrators meet with business managers across the organization to determine current and future multi-party video conferencing needs. Current demand is for 16 ports, but video conferencing vendor warns to prepare for future capacity. Forecasted HD requirements are potentially up to 20 additional ports. IT allocates \$500,000 in capital expenses for hardware, installation and support of a 40-port chassis. IT managers struggle to find space in data center and staff to maintain systems. Budget is completely drained. Maximum usage is required to justify ROI to CIO. Any future upgrades will require heavy planning, budgeting and further justification of expenses.

Overshooting Needs Leads to Overspending

The traditional approach poses another challenge—the heavy burdened cost associated with the multipoint control unit (MCU) hardware itself. In order to offer a full portfolio of capacity options, manufacturers spend heavily in R&D for large port capacity machines and then remove ports from the larger system rather than design additional, smaller chassis. The upfront costs for the larger chassis are passed on to the purchaser of the smaller unit. Customers are often discouraged by the high price per port for a smaller chassis and are thus encouraged to overinvest in the larger platforms, causing them to worry about future needs and scaling before demand is realized. Unfortunately, once buyers are heavily invested in the technology, they risk owning a system that might become outdated before ROI is achieved. In essence, they are locked in to expensive technology for years to come, despite potential technological advancements.

With the inside-out approach, users often overinvest and justification can be challenging.

Another challenge for administrators to overcome is the fallacy that extremely high port capacity MCUs are needed in certain meetings or broadcasts on an infrequent basis. This makes upfront access to maximum levels of capacity appealing. For example, a CEO may want to address the entire company using video once a quarter. Often this application is merely a broadcast video message, and interactive video communications are not needed. It is often up to the IT administrator to identify this situation and determine whether the high capacity and expensive inside-out infrastructure for this type of meeting is a risk for overinvestment. ***Instead, there are less expensive, more efficient options for one-to-many video communications, such as live streaming and recording appliances that connect to HD video conferencing solutions.***

Shared Encoders and Variable Capacity

From a technical standpoint, there are many legacy multipoint architectures. The oldest technologies use a rather costly shared encoder architecture where all users share the same view. In this case, the conference call is hosted at the quality level of the least capable participant. Therefore, if even one person has standard definition (SD) capacity, then all of the attendees, even those with Full HD, are forced to view video at the lesser resolution.

Newer technologies, made available within the past five years, have addressed this compromise by utilizing pools of digital signal processors (DSPs) that enable unique layouts per participant and full transcoding. Each participant is treated as an individual, rather than allowing the lowest common denominator to bring everyone else down in terms of quality. Even the pooled DSP technology is still being refined, with many MCUs on the market delivering Full and True HD video asymmetrically. The asymmetrical, lower-quality video stream is emitted, and the image is then distorted/stretched to reach the desired higher image size/resolution; however, it is not the same high definition quality upon its return. Some MCUs have only recently begun to deliver 1080p30 symmetrically, where the endpoint transmits and receives 1080p30 or 720p60 video without image modification. Further, approximately 50 percent of the pooled DSP MCUs on the market still, to this day, fail to deliver 720p at 60 frames per second.

Multiple vendors have developed separate algorithms for pooling DSP resources. Some vendors concentrate on **variable capacity**, while others focus on **flat capacity**. Variable capacity complicates the setup of MCUs, requiring the administrator to continuously determine the proper settings for the company. Administrators must first establish the level of service they wish to provide. They then construct the bridge specifically to address bandwidth, resolution, encryption, frame rates and number of callers in order to determine the best mode of operation for their businesses. It can be complicated and confusing, not to mention time consuming, for IT staff. With variable capacity, it is easy to make configuration mistakes that lead to a poor-quality experience for the end users. As an example, users may find themselves in a degraded video quality conference, expecting HD but receiving a lower resolution conference designed for desktop participants. This can ultimately result in reduced utilization and lower end-user satisfaction rates.

With the complexity, guesswork and expense inherent in the traditional approach to building an infrastructure for multipoint video conferencing, organizations are moving toward more efficient, cost-containing solutions, such as those offered through LifeSize® Bridge™.

CHART 1 Price Performance: Horizontal Scale vs. Vertical Scale

	Advantages	Disadvantages	Effect on Customers
Vertical Scale	Easier to design Easier to manufacture	Expensive Single point of failure Burdened costs within design	Pass the cost on Force a decision today on long-term needs Scale now
Horizontal Scale	Less expensive No burdened costs Performance is locked	Harder to design Harder to manufacture	Lower cost Short-term decision today; long-term needs can be decided later Scale intelligently

A traditional vertical scale approach has some advantages, but they are primarily for the manufacturer and not the buyer. A horizontal scale approach is less expensive for organizations and does not take on burdened costs or force overinvesting.

The New Smart Growth Approach

Outside In: Buy as Needed, Use as Needed

Whereas the previous methodology allocated most, if not all, of the budget for infrastructure to support potential demand, the new smart growth approach delivers the highest-quality video communication in a modular fashion, scaling horizontally. With the same dollar-to-dollar budget, LifeSize Bridge gives more users access to Full HD 1080p30 or True HD 720p60 and 720p30, due to the lowest per-port cost on the market. With fewer dollars spent upfront on core infrastructure, organizations can stretch budgets further and invest only in the components they need now; thus simplifying planning and budgeting and shortening purchasing cycles. **Organizations purchase only what they need and pay as they grow. Resources are assigned specifically where needed, ensuring a stronger ROI by the elimination of forecasted guesswork.**

Unlike traditional MCUs that carry a heavy cost burden, the LifeSize Bridge units are purpose-built and designed specifically for customer needs. With the modular architecture, rather than relying on one unit to scale and paying for capacity that may not be used, flat capacity pricing for 16 ports is available at a third of the cost of others at Full HD 1080p30 or True HD 720p60. As a result, the same budget dollars go further to enable dramatically more users to have a high-quality HD video experience. This can encourage usage, increase productivity and improve company-wide efficiencies. ROI directly correlates to this improved usage and productivity. **The more people who use the technology, the greater the return and the easier it is to justify.**

NOTE In the scenario of a CEO needing to broadcast to employees once a quarter, the company could use a video streaming solution such as LifeSize® Video Center, which can be purchased at a fraction of the cost of an expensive interactive video conferencing system. This enables organizations to avoid overinvesting.

CHART 2 Competitive Pricing: Cost per Port View*

MSRP	LifeSize Bridge 2200 \$64,999	Competitor A \$108,000	Competitor B \$159,000	Competitor C \$85,000
Ports at 1080p30	16	7	12	7
Cost/Port	\$4,062	\$15,429	\$13,250	\$12,143
Ports at 720p60	16	7	0	0
Cost/Port	\$4,062	\$15,429	n/a	n/a
Ports at 720p30	16	15	12	15
Cost/Port	\$4,062	\$7,200	\$13,250	\$5,667

* Based on estimated MSRP and documented port configuration; cost in USD.

For Full HD 1080p30 and True HD 720p60, LifeSize is less than one-third the cost of alternative offerings. Some vendors fail to support 720p60.

CASE STUDY

Smart Growth Approach

Company

Medium-sized organization with 20 locations and weekly engineering, sales and marketing meetings.

Challenge

Currently, only senior executives have access to Full HD conferencing, but more employees are requesting access. In addition, tightened budgets require a reduction in travel. Despite company-wide demand, the buyer is unsure of how many people will use HD and how much to purchase. Recession has slowed growth, but expansion is expected next year.

Return on Investment Scenario

IT administrators meet with business managers across the organization to determine current multi-party video conferencing needs. Current demand requires 16 ports. IT allocates \$64,995 in capital expenses to purchase a 16-port system with Full HD. The company may consider purchasing another 16-port system next year if business units express a need for additional multi-party conferencing capability. Any remaining budget can be used to augment capacity or be used elsewhere. ROI is quickly justified and proven, and the organization can scale as it grows.

Uncompromised Quality and Ease of Use

With LifeSize Bridge, a flat capacity architecture empowers smart growth by increasing efficiency and easing management. This model requires minimal administrative oversight. It maintains its capacity in every configuration and provides a consistent level of service. There are no complicated algorithms to calculate the variable capacity of shared encoder bridges. All users can take advantage of the same high definition capacity.

LifeSize Bridge utilizes a symmetrical approach to video and transmits the same high-quality video stream that it receives. It offers a 16-port capacity regardless of the resolution. Users have access to ports at 1080p30 and 720p60 resolution, at less than a third of the cost per port of other manufacturers. The smart growth approach invests in the right sized bridge to enable the best user experience first, guaranteeing the highest-quality HD resolution per participant every time.

Beyond quality, ensuring that the technology is easy to use is vital to the success of the deployment. LifeSize Bridge, therefore, makes both scheduled and on-demand video conferencing simple for the administrator and user alike. Using the LifeSize Bridge scheduler, meetings can be reserved and guaranteed. With LifeSize® Control™ integration, meetings can be directly scheduled via Microsoft® Exchange or Google® Calendar.

To join a meeting, end users simply enter the conference ID and IP address into their video systems. With a simple dial-string, they are directly entered into the call without searching for the specific meeting or requiring administrative support.

Maximum Price/Performance and Usage

The new architecture for LifeSize Bridge makes HD video conferencing accessible to everyone in the organization, as well as more affordable. For the same money spent on a large, centralized multipoint control unit, LifeSize Bridge connects up to three times the number of users in Full HD. The incremental investments are smaller, and the price per port is lower. Therefore, the planning and purchasing cycles can be shortened, enabling administrators to offer a video service that can scale flexibly and grow modularly within the organization. In this way, companies are less likely to run out of capacity as they grow. Purchasers have the ability to gauge needs more often and buy more affordable 16-port units when additional capacity is needed. ***Users become more productive while saving organizations money by avoiding significant costs in travel, technology, and IT and administrative support.***

The Advantages of LifeSize Bridge

The traditional vertical approach to multipoint HD video conferencing has been outpaced by a more efficient, higher-quality option—LifeSize Bridge. This new bridging innovation delivers unmatched quality with groundbreaking price/performance for multi-party HD video calling that scales intelligently to an organization’s needs. Not only does the smart growth approach allow organizations to save valuable resources, but it gives employees broader access to the technology they need to stay connected. Investing modularly in the latest multipoint video communications technology now, without committing dollars to what may or may not be needed later, is simply smart investing.

CHART 3 Competitive Comparison Summary*

	LifeSize Bridge 2200 \$64,999	Competitor A \$108,000	Competitor B \$159,000	Competitor C \$85,000
1080p30 ports	16	7	12	7
720p60 ports	16	7	X	X
720p30 ports	16	15	12	15
Capacity Model	Flat	Variable	Flat	Variable
Internal Scheduler	✓	✓	✓	X
Supported Resolutions	>200	<10	<10	<10

*Competitive information as taken from publicly available information. Pricing shown in USD.

LifeSize Bridge is a flat capacity Multipoint Control Unit (MCU) and offers 16 full ports of connectivity, regardless of the resolution.

Build Your Intelligent Video Network Today.

About LifeSize

LifeSize, a division of Logitech, is a world leader in high definition video communications and telepresence. Founded by industry veterans in 2003, LifeSize pioneered high definition video communications to make communicating at a distance as natural and effective as being in the same room, for anyone, anywhere. LifeSize became a division of Logitech in December 2009, sharing a vision of everywhere there is voice, there should be video.

www.lifesize.com



Corporate Headquarters:
1601 S. MoPac Expressway
Suite 100
Austin, Texas 78746 USA

Phone: +1 512 347 9300
Fax: +1 512 347 9301
Email: info@lifesize.com
www.lifesize.com

EMEA:
LifeSize Communications
Toll-Free Europe
008000 999 09 799

APAC:
LifeSize Communications
Hong Kong
Phone: +852 3189 7062