

WHITE PAPER

Five Key Factors for Success in Your Business Video Conferencing System

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Introduction

In the 1980s only one category of business video conferencing existed: hardware-based solutions for fixed-site installation. Over time, the use of video conferencing has expanded

with the reach of the Internet, HD webcams, and more product categories. Today millions of people use video conferencing without fixed-site systems for a long list of specialty applications such as video arraignment, telemedicine, and telepresence to name a few. While the scope of video conferencing has evolved, so have the key factors for success – today there is more to it than just video quality and cost.

Key Factors for Success

This white paper describes the five critical success factors for anyone, anytime, anywhere video conferencing while staying within the bounds of IT security policies. These apply to any multipoint video conferencing system. Regardless of your industry, if these requirements are met, the foundation exists for easy, high-quality video conferencing by anyone, anywhere in their work environment, thus maximizing adoption and increasing the likelihood of long-term success of your video conferencing investment.

EASE OF USE – Anything more difficult than dialing a telephone number or clicking on a Web link becomes an obstacle to success. Web-based video conferencing online services have solved this problem via standard URLs and Web links that everyone can use.

Traditional, installed-site systems have a long history of being more difficult to use than a telephone. If you happen to connect to the same locations with enough frequency that you add them to your directory, then it becomes a bit easier. However, connecting for the first time requires the IP address or SIP name of the remote location. In a majority of cases an IT professional is required to establish a connection.

SECURE ACCESSABILITY – Video conferencing must be widely accessible, yet stay within the bounds of IT security policies. While this is a simple concept, it is becoming more difficult as multipoint systems come online, collaboration is added, and reach is extended to desktops and other devices.

To experience a high-quality video conference, companies have typically needed access to a properly equipped room. In a large enterprise, this may be a short walk down the hall. But for the small to medium sized business, access to a video conferencing facility requires a very costly rental fee or is completely impossible.

In addition, traditional video conferencing systems utilize the UDP protocol for the transmission of video conferencing data. It is common practice for IT departments managing perimeter security to limit the use of protocols, such as UDP, as a security measure against network intruders. As a consequence, most installed-site systems are outside the firewall to allow direct video interchange with other like systems, while all desktops are necessarily behind the firewall. The result is that video conferencing rooms can reach other rooms, desktops can reach other desktops, but rooms and desktops cannot mix, and connections to external desktops behind their own firewalls most often fail.

To encourage widespread adoption, companies must make video conferencing widely accessible, that is, make it easy to accomplish from desktops, laptops, and conference rooms. Secure access also requires the ability to include external participants such as customers and business partners behind their own firewalls and proxies in a video conference. The tools exist today, such as with online services, to meet this requirement.

INTEGRATED COLLABORATION TOOLS – Once a video conference is established, the next requirement is the sharing of data. Easy-to-use, seamlessly integrated live sharing tools are a requirement for adoption by line employees, sales staff, training managers and others who accomplish productive work and knowledge transfer during their video conferencing sessions.

With traditional video conferencing, the sharing of data and other presentation materials was conducted through the H.239 protocol standard which essentially provided for a computer screen to be captured and sent as video data, with a token passing mechanism so only one endpoint at a time was presenting. This meant that multiple presenters needed to take turns.

Today, live collaboration involves multiple parties who can annotate, share the keyboard, and otherwise interact with the content being shared. More sophisticated sharing and collaboration tools require additional peripherals and software, once again requiring the services of an IT professional.

HD VIDEO QUALITY – Business-grade video conferencing requires medium and high-quality video and the ability to automatically adjust video quality among all the endpoints in real-time. A good video conferencing system adapts video quality and bandwidth consumption in real-time on a per connection basis.

Fortunately, there are established display standards and some industry norms that can be helpful in categorizing video quality:

Poor – Any video with less than 320x240 resolution, 6 fps, or poor image quality.

Low – One-quarter CIF (320x240) at 6-12 fps.

Medium – Standard definition video (CIF/VGA, 640x480) at 12 to 30 fps.

High – HD 720p at 12-30 fps for desktops; and HD 1080p at 30 fps or better for rooms.

Latency, jitter and inferior picture quality are visual measurements that any consumer will use to judge the video conferencing experience. Web conferencing online services with video support generally fall below standard definition video quality, but are low in cost (under \$70/user/month). Video quality often suffers further as more video participants or active desktop sharing or other compute-intensive tasks are added. This is particularly pronounced in Flash-based or single-threaded scripted solutions.

LOW FINANCIAL RISK – Traditional video conferencing systems typically require a substantial capital equipment expense and dedicated network bandwidth in the form of virtual private circuits. While the quality of service for this type of system is typically very good, the cost is prohibitive for most small to medium sized organizations, thus raising another obstacle.

Desktop video conferencing solutions utilize webcams and typical Internet connections, but most are unable to connect to a conference room or utilize HD. This landscape was defined largely by the fixed bitrate encoders of early room-based systems. Today, variable bitrate, scalable and other dynamic encoding technologies allow high-quality (HD) video anywhere bandwidth permits. The old notion that high quality is the exclusive domain of room-based systems is no longer the case. Dynamic encoding technologies enable high quality at online service prices and far more reasonable price/performance trade-offs.

Consider the costs of installation or activation, maintenance and expansion. Scenarios that require video routers or other hardware infrastructure should consider the additional project costs for any potential expansion. IT managers need not concern themselves with owning, maintaining and upgrading any particular piece of infrastructure hardware. With cloud computing, it's a license expansion and plugging in a few more peripherals resulting in a lower cost of ownership and lowered financial risk

Moving Forward

Telepresence and installed-site systems with dedicated bandwidth deliver high quality for a high price, but recent technology, including HD webcams, variable bitrate encoders, multicore desktop processors, and cloud computing, enable a select few online services such as Nefsis to deliver the same high quality at a much lower price point.

In adopting a video conferencing strategy, it's important to consider picture quality and the total cost to deliver ALL the key factors for success: ease of use, secure accessibility, HD video quality, integrated collaboration tools and low financial risk.

The Nefsis Solution: How Nefsis Meets These Requirements

Anyone, anytime, anywhere video conferencing

Nefsis is a cloud-based video conferencing online service. Cloud computing is a new approach to video conferencing, one that treats the endpoint and video capture as a function of the video peripheral and delivers everything else as an easy-on network service, effortlessly addressing the five critical success factors to ensure the long-term success of your video conferencing investment.

Nefsis is easy to use, with a browser-like layout and Web URLs instantly familiar to anyone who can surf the Web. Illustrated tool buttons and point-and-click simplicity make it easy for even first-time users.

Using industry standard SSL/TLS security using PKI and a certificate signed by VeriSign, Nefsis is secure and widely accessible within most IT security policies. The cloud is accessible via a Web browser from virtually any business desktop or conference room worldwide. Its cloud computing and Web-based architecture solves the firewall and proxy traversal issues described above, so there is no reason to rely exclusively on rooms that may or may not be available when needed.

Nefsis produces high-quality video. The cloud and multicore processing software deliver multipoint HD at 1080p with full frame rates – the highest quality available used in

telepresence studios – for customers with adequate bandwidth, and automatically adjusts for poor, moderate, or highly variable bandwidth for remote conference participants.

Most important, Nefsis delivers multipoint HD to desktops and rooms with fully integrated collaboration tools at an exceptional value. Nefsis is peripheral agnostic, allowing the use of inexpensive webcams and off-the-shelf audio/video peripherals including desktop webcams, HD webcams and SD/HD pan-tilt-zoom conference room cameras. The Nefsis cloud manages everything else – there is absolutely no requirement for MCUs, video routers, or other infrastructure components and their associated maintenance contracts. Indeed, that is the point of virtualizing video conferencing for businesses and moving it to the cloud: less up-front expense, no major capital expenditures (CAPEX), and automated maintenance with fail-over, load-balancing, and scalability to boot. Nefsis is the best value on the market today. With cloud-based switching, routing and mixing, there are no infrastructure hardware or related maintenance requirements.

Advanced Technology Accelerates Multipoint HD and Live Sharing

Nefsis uses variable bitrate encoding, allowing for a wide variety of connections speeds in the same conference and improves performance by selecting the best nearby virtual conference server (VCS). Nefsis further accelerates performance through its parallel processing architecture, leveraging multicore processors and MMX/SSE coprocessor extensions at the desktop and all points in between. This performance is unmatched by Java Script, Flash and other scripted, emulated, and single-threaded solutions.

Nefsis Product Summary

- Cloud-based online service
 - Low/No major capital expense
 - Easy to activate
 - No infrastructure hardware required, very easy to expand
- Multipoint HD video to desktops and rooms
- Advanced collaboration tools built-in

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