

# BUYER'S GUIDE TO VIDEO CONFERENCING



The current geo-political climate, a focus on increasing productivity and cost reduction, and a general reluctance to travel have all contributed to a heightened awareness regarding the use of video conferencing and other conferencing and collaboration technologies. Corporations, state and local governments, universities and health care providers are using this technology today for many applications including training, telemedicine, product development, customer service, board meetings, managing mergers and acquisitions, and interviewing to name a few. When properly implemented, video conferencing does indeed provide value to these businesses. This document will provide the first time user a non-technical guide on how to acquire the best video conferencing system for their respective organization.

There are two main factors to consider when acquiring a video conferencing system, the type of system, and the network over which the system will operate. The following questions should be asked to help determine the best system for your organization:

1. How many people will participate at each site during a video conference?
2. Is it important to share PC-based information (ie: PowerPoint presentation) during a video call?
3. Do you have a need to call to multiple sites at one time (This is referred to as a multipoint call)?
4. Will you be conducting calls with clients or partners outside of your organization?
5. If known, what type of network would you like to operate over? Or, do you already have a network in place?
6. Can you explain the types of meetings you will hold, or the types of people which will participate in a video conference? Executives, sales people, engineering, etc.?

Once you have answered these basic questions, you should be able to determine the best system from the choices below:

System Type*	Description	Application	Cost
<b>Desktop</b>	Webcam with software codec, operates on a PC. IP network only	Webcam with software codec, operates on a PC. IP network only	\$300
<b>Desktop</b>	Executive System - flat panel LCD with video conferencing technology integrated	Executive who wants a stand-alone appliance in his office or home office	\$4,000–\$5,000
<b>Set-top appliance</b>	Integrated system with camera and codec that sits on top of a monitor	Small to mid-size conference room with up to ten participants	\$5,000–\$10,000
<b>Integrator's codec</b>	System comes in separate components for integration into to a high-end conference room	High end multi-media presentation room used for audio/video conferencing and local presentations	\$12,000–\$20,000**

\*Most of these systems do not include a monitor or display device. Options include a TV monitor, XGA monitor, plasma, LCD display, or a projection system.

\*\*Includes video conferencing codec only. Actual room can cost up to \$100,000 depending on level of integration.

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The next decision is the type of network you choose to operate over. This is critical as it will play a key role in the overall reliability and quality of the solution you choose to implement. A great system will perform poorly if you have it running on an unreliable network. Network requirements for video conferencing can be best explained by a comparison to e-mail. When you send an e-mail from point A to B, that e-mail can be broken up into different packets, which can arrive at the recipient's mailbox at different times and in different order, without using a great deal of bandwidth on the network at any one time. Once it arrives at the recipient's mailbox, it is buffered and eventually the packets re-assembled and delivered. Unlike e-mail, video conferencing is a real time application and requires that the video and audio packets arrive at the same time. IP-based video conferencing can operate over the same network as e-mail (IP network). However, a 384 kbps video call with 25% IP headers requires bandwidth of nearly 480 kbps of symmetrical data, and will not tolerate much packet loss, delays in packet delivery, or packets being delivered out of sequence.

There are two general network types to choose from: an ISDN or circuit switched network, and an IP network. ISDN has been around since the early 1990s. It is very similar to your telephone line as it is a circuit-switched network. So, when you place a call over an ISDN network, that circuit is locked up for your application. ISDN can be very costly as you pay a fixed fee per month for each ISDN line, and a per minute usage charge. The usage cost of a coast-to-coast call at 384 kbps is about \$60/hour.

### Disadvantages of ISDN Networks include the following:

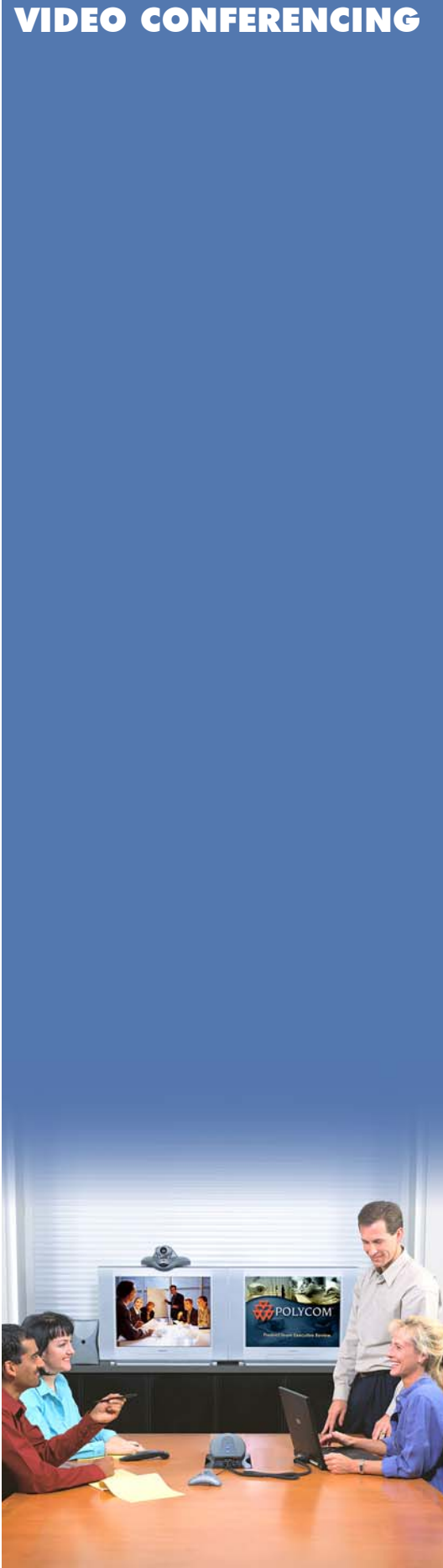
- ▶ **Difficult to deploy** - requires the ordering and installation of three different circuits.
- ▶ **Mediocre reliability** - as indicated above, business quality video conferencing usually requires (3) ISDN lines. The use of three separate lines leads to more opportunity for failure.
- ▶ **Difficult to manage and troubleshoot** - as a dial-up service, ISDN lines are not in use until one system places a call. This lack of a continuous connection makes it difficult to proactively manage an ISDN network. When there are problems, multiple points of failure can be the cause of the problem, local wiring, the local telecommunications carrier, or the long distance telecommunications carrier. This makes it difficult to determine the exact cause of the problem.

Most video conferencing systems purchased today include an IP interface with ISDN as a separate option. If properly implemented, an IP network can offer numerous benefits. There are three different types of IP Networks:

1. Internal IP or Data Network
2. The Public Internet
3. An IP Overlay Network (IVCi's IntelliNet)

### Internal IP or Data Network

Using your internal IP network offers many benefits as indicated below. The challenge is ensuring that your internal IP or data network can support the high bandwidth and quality of service required for video conferencing. Your organization also needs to commit resources to manage the use of video conferencing over your internal IP network and to interface with your end users. IVCi provides several services to support deployment of video conferencing over internal corporate data networks. These services include IP consulting to help you optimize your network for video conferencing, and outsourced staffing to manage the day-to-day support activities for large installations. Implementing video conferencing over your internal network has the following benefits:



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- ▶ **Lower cost end points** - no need to order separate ISDN network interfaces.
- ▶ **Low or non-existent usage fees** - There are typically no per minute usage fees associated with IP networks.
- ▶ **Improved reliability** - IP calls run over a single connection versus multiple ISDN lines.
- ▶ **Ad-hoc convenience** - the ability to deploy video at the desktop, and not have to rely on reserving a conference room.
- ▶ **Centralized management** - because IP-based systems are connected to your corporate LAN/WAN, they can often be managed or controlled by centralized management systems. This allows corporations to be more pro-active in managing the use of video conferencing and also gives them the ability to gather statistics on overall usage.

## Public Internet Video Calls

It is important to distinguish between conducting a video conference over an organization's internal IP network versus placing calls over the public internet. Unlike one's own corporate LAN/WAN, when you place a call over the public internet, you cannot control how that call is routed and how much bandwidth can be allocated for that call. Therefore, there is no guarantee that your call will be successful or of high quality. Basically, you are subject to the whims of the public internet. Although this may be a free call, the inconsistent performance may prove to be unacceptable to many organizations.

## IP Overlay Network (IVCi's IntelliNet)

The third alternative for organizations looking to implement video over IP is an overlay network such as IVCi's IntelliNet Managed Conferencing Service. This service is ideal for companies that have a strong need for video conferencing, but do not have the resources or the network topology to deploy it on their own IP network. IntelliNet is a turnkey solution as it includes all the components necessary to deploy video conferencing without your having to become an expert in this technology. The chart below highlights some of the features and benefits of this service:

## IntelliNet Video Service Benefits

- ▶ **Unlimited Video Calls** - Place your calls anytime—24 hours/day, 365 days/year. You save money by paying one price, even with unlimited daily usage.
- ▶ **Web-based Scheduling** - Schedule all types of meetings and requirements including video conferencing, room only, A/V, catering, support staff and portable equipment.
- ▶ **Automatic Call Launching** - Includes automatic call launching and termination for point-to-point, multipoint and even gateway video calls.
- ▶ **Multipoint Bridging and Gateway Services** - Full bridging and gateway services without the need for you to make a major capital investment.
- ▶ **Intelligent Management** - Proactive (every 90 seconds) endpoint and network management system with automatic trouble ticket and notification system.
- ▶ **Global Reach** - Massive network with more than 400 access points in 45 countries.

In summary, video conferencing has been proven to provide value to many organizations across a variety of different industries. The availability of lower cost, high quality systems, and the ability to run over IP networks will continue to drive the acceptance of this technology. As its use increases, and more ubiquity in deployment is achieved, organizations will have many more opportunities to utilize this technology. ■



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