

HOW SHALL WE MEET ONLINE? CHOOSING BETWEEN VIDEOCONFERENCING AND ONLINE MEETINGS

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ABSTRACT

Collaborating online can be accomplished with several tools, including e-mail, videoconferencing, online presentations, virtual offices, instant messaging, and bulletin boards or forums. Among their benefits are reducing travel time and expense, effectively organizing and disseminating knowledge, and increasing physician satisfaction by reducing required meeting time.

KEYWORDS

*Videoconferencing
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Internet
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Reducing Travel and Increasing Communication

Videoconferencing and online meetings can save travel time and money, while encouraging frequent communication among managers and clinicians. This article describes what videoconferencing and online meeting technologies are available now, and suggests criteria for selecting which one to use.

No attempt will be made to assert the superiority of videoconferencing and online meetings. Collaboration goes on over time, so both can be combined

with face-to-face meetings. It's not an either/or situation and, in fact, some personal contact may be necessary for effective collaboration.

The primary objective is to explain the alternatives. While the idea of videoconferencing is easily grasped (i.e., a camera focusing on an individual or group), online meeting systems will be less familiar. Online meeting systems allow participants to present slides and websites, and share documents and even applications. This article will discuss some of the considerations involved in selecting either tool and choosing between them.

Do Healthcare Organizations Need These Tools?

Healthcare organizations can use these tools to save time and money, and improve productivity:

- The Marquette General Health System in Michigan (www.mgh.org) uses Polycom videoconferencing equipment that was originally put in place for telehealth applications (www.mgh.org/telehealth/index.html). MGHS is part of the Upper Peninsula Health Care Network

(www.uphcn.org), and uses videoconferencing to allow managers to meet from across the region, saving hours of driving.

- The University of South Florida Health Sciences Center's 28 departments are dispersed throughout a 20-mile radius (www.hsc.usf.edu). HSC uses an IP-based videoconferencing system from VCON primarily for weekly staff meetings and medical research meetings. HSC operates a multipoint control unit to allow for multipoint video.¹
- The Iowa Foundation for Medical Care (www.ifmc.org) uses WebEx, an online meeting system, to meet with federal government managers and contractors as it develops software. IFMC uses WebEx to demonstrate the use of its software for training and to provide help desk support services. It uses WebEx to help the Centers for Medicare & Medicaid Services (CMS) in HHS meet with Quality Improvement Organizations, and to allow QIOs to meet with providers.
- Inland Northwest Health Services (www.inhs.org) uses Polycom teleconferencing equipment to allow physicians from hospitals in Spokane to attend weekly tumor board meetings and grand rounds, saving physicians the time otherwise required for travel. Its monthly calendar describes the meetings hosted by INHS for administrators and clinicians (www.nwtelehealth.org).
- The Sisters of Charity of Leavenworth Health System (www.sclhsc.org) substituted videoconferencing for live meetings of managers from its nine hospitals in Kansas, Colorado, California, and Montana. The savings equaled the cost of the videoconferencing equipment in 1.5 years.

The potential users in a healthcare organization include management teams, affiliated facilities and medical groups, vendors, and physicians.

Videoconferencing

"Do I have to drive two hours for a 30-minute meeting?"

Videoconferencing systems fall into three major categories:

- **Desktop systems** that use a computer primarily to connect individuals.
- **A group system** is installed in a separate room. It can be PC-based or rely on separate hardware. The camera

can include group pictures or focus on an individual.

- **Multipoint systems** broadcast the video from multiple group or desktop systems. Each location can see video from two or more other locations. This is an additional capability that can be added to group or desktop systems.

Desktop Systems. Desktop systems are designed to provide videoconferencing at a lower cost. They are used to connect individuals rather than groups. You can buy a camera for anywhere from \$50 to \$600 and use your existing desktop computer for videoconferencing. Vendors such as Intel, Logitech, and Creative offer low-cost cameras. Vendors of systems for group videoconferencing have begun to offer desktop and laptop systems. These include Polycom's ViaVideo and VCON's ViGO.

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You can use Microsoft's NetMeeting or First Virtual Communications' CUseeMe Pro to send video, voice, or instant messages. You can share applications, use a whiteboard, or transfer files during or after a call. If you prefer to operate a system on your own hardware, IBM offers its Lotus Sametime server.

The major limitation of desktop systems is the quality and size of the images produced. This is the result of the speed of the network and the camera used. The user has to make a trade-off between picture size, resolution, and synchronization between picture and speech. Increasing one can degrade the others. These systems were not designed

for groups. There are no controls for zooming in and out to focus on an individual and then a group.

Desktop systems can produce high-quality images. A major factor affecting picture quality is the network used. The speed of the connection is important. If the public Internet is used, a DSL or cable modem connection will allow for larger picture sizes, higher resolution, and better synchronization. Use of a private network offers both high speed and more reliability, since congestion on the public Internet can degrade image and audio quality. If higher speeds can be achieved, picture quality can be improved by purchasing a more expensive desktop camera, which can cost up to \$600.

Group Systems. Group systems from vendors such as Polycom, Tandberg, and VCON can be either PC-based or appliance-based, which means they use separate hardware to create, send, and receive images. They send and receive larger, higher quality images than desktop systems and require higher speed connection and bandwidth. For this reason, they often use dedicated ISDN or T-1 lines leased from telecommunications companies. They offer camera controls that allow for zooming and panning the camera to focus on individuals or the group. They allow for the transmission of images of documents placed on light box or sent by a computer.

Polycom has developed technology that allows for the simultaneous transmission of both high-resolution (SXGA) computer output and video. This allows the participants to see both people and the computer screen at the same time. Polycom's PC-based iPower system also allows for the high-resolution display of applications such as a word processor or spreadsheet.

Multipoint Systems. Multipoint videoconferencing is an additional capability of desktop and group systems. It provides each participating group or individual with the video from all other systems in the meeting. All of the locations can be seen on a single monitor, or on multiple monitors.

Polycom's iPower and ViewStation systems can create a multipoint video that includes up to three additional systems. Beyond that, a separate multipoint control unit is required. This can be maintained internally (as the University of South Florida Health Science Center

does) or by a service provider such as First Virtual Communications.

Online Meeting Systems

"The four of them will spend a total of eight hours in a car to hear my 40-minute presentation."

You drive to the other side of the county to meet people who have driven an hour or more to attend a meeting, which lasts an hour. The same meeting could be online with the speaker guiding the audience through the slides while a conference call allows everyone to hear the presenter's voice. Participants type in a web address to see the slides, then call a conference call operator to hear the presenter. The presenter can do the following:

- Control when each slide is viewed by the audience
- Use a pointer or write on the slides for emphasis
- Type in a web address and everyone will see the web page on their screens while the presenter talks
- Ask questions or "poll" attendees and immediately present the results to everyone as a table or graph

Participants can send the presenter a question with an instant message and the presenter (or a moderator) can look through them and pick out the ones to address now, or later in an e-mail.

Meetings can also be archived for viewing later. If a conference call over regular phone lines is used, audio quality is usually excellent. Internet audio (or "Voice over IP") can also be used with audio quality depending on hardware and the speed of the connection. Such online meeting systems are available from vendors such as WebEx and PlaceWare.

These features are useful for "one-to-many" presentations, but online meeting systems also help groups that are working together by providing additional tools. Anyone can focus the team's attention and make a contribution by drawing on a slide or using a pointer. Control can be passed from one person to another, and who has control is made obvious to everyone.

Participants can also share applications such as a word processor. You can work on a memo with a colleague who lives 50 miles away. The two of you can exchange control of the cursor to add and delete text. You can work on a spreadsheet, or surf the web together. You can give a lesson on how to use a software program.

Why Not Just Have a Conference Call?

A weekly conference call can be used to allow managers to meet and go over a range of issues. Why bother using videoconferencing or an online meeting? An agenda can be e-mailed or faxed in advance along with any documents that are needed. Why add any visual element?

What Work Are We Trying To Do?

The first consideration is the purpose of the meeting. If it is to share thoughts about a topic, seeing a person or a document may serve little purpose. There are tasks that can require looking at and working with a document or application.

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They include:

- Understanding a complex document such as a legal contract or spreadsheet. Navigating through the document by voice can be challenging. Time can be wasted reading sections to make sure everyone is looking at the right place. In an online meeting or videoconference, the presenter can point, circle, or otherwise mark text or a spreadsheet cell. Some systems allow control to be passed to other people when necessary.
- Revising a document or spreadsheet together. The CFOs of a health system can work together on a spreadsheet. Instead of looking at a downloaded copy while talking on the phone, they can look at the same computer screen, with one guiding a cursor to point out proposed changes and make revisions. One person can change the number in a cell and the group can watch as the spreadsheet recalculates. They can then discuss the number, change it, and watch the result. If a complex text document is revised, everyone can see the suggested language, and it can be sent to everyone as the meeting ends.
- Viewing a website or computer appli-

cation together. If the group needs to view a series of web pages together, an online meeting or videoconference can ensure that everyone is viewing exactly the same page, since the presenter can control what is displayed on everyone's screen. If the group needs to use a software application together to make a decision on a purchase or project rollout, they can view what happens as one of them executes a series of commands.

Who Are the People Meeting?

If everyone knows each other well, seeing a headshot may serve little purpose. If new people are being brought in regularly, video adds a personal dimension that may be highly valued. You may appreciate this if you've ever introduced a new, disembodied voice to a conference call. Even if everyone knows each other, video can allow for the body, hand, and facial gestures that people use to understand the meaning of words and manage a meeting.

The type of group that is meeting will also affect what capabilities are needed. If a management team meets regularly with no defined product, then voice may suffice. But a project team with a defined output is more likely to be in the situations described above. They are more likely to have to work to produce a product and have a need to work together on a document or spreadsheet, and share an application. While a management team may also need these capabilities from time to time, project teams are more likely to need an online meeting or videoconference consistently.

Group Videoconferencing or Online Meeting?

There's clearly an overlap between an online meeting system like WebEx and a group videoconferencing system like Polycom's iPower. Both can send a video headshot, allow for application sharing, and have the ability to take participants to a specific web page. Some of the distinctive elements of each technology follow, along with comments on when each might have an advantage.

Do Groups Have to Meet Together?

Online meeting systems link individual desktops. When a group wants to meet together in a conference room and communicate with remote groups and individuals, group videoconferencing has an advantage. While the group could dis-

perse to their desks, this may not be desirable. The visible, interpersonal interaction that goes on in a meeting would be missing, including comments between attendees and visible body language that is used to express and interpret what is happening.

Group videoconferencing systems like Polycom's ViewStation or iPower offer the higher resolution video required for the display of groups. They allow greater control of the camera to allow for focusing on individuals in a group.

Do They Need to Be at Their Computers? Desktop computers are essential for many tasks. During a meeting, participants may need to find a file and work with an application. Group videoconferencing systems are linked to individual computers at each location. Depending on the structure of the network, it may be difficult to access files, documents, and applications used by individual participants. For example, not all e-mail may be stored centrally, so it may be impossible to access e-mail on the desktop computer of a participant.

An online meeting system like WebEx allows for the sharing of any file or application on a participant's desktop computer, as well as any resource that computer is linked to. Since participants are at their individual computers, they can be asked questions ("polled") and can send instant messages to a moderator or presenter.

How Spontaneous Are Meetings?

When people need to be brought into a meeting on short notice, online meeting systems like WebEx have an advantage. Online meeting systems allow you to invite someone to join a meeting without going to a room with videoconferencing equipment. There's no concern about whether the equipment or the room is available. The people in the meeting don't have to worry if they've brought the documents they might need. Nor is it necessary to find out if the technicians who support the group videoconferencing system are available.

How Comfortable Is the Group with Change? Are they willing to learn new skills? Online meeting systems require a change in behavior and learning that is not required by videoconferencing, which more closely resembles a face-to-face meeting. Some behaviors need to be changed for videoconferencing. For example, participants may need to wait for people at the remote location to ask for the floor (which

happens more quickly when you can see people in a room). Participants will, however, primarily talk and act as they would in a physical meeting.

Using the features of an online meeting requires looking at an unfamiliar computer desktop and learning to click on new icons and buttons. It isn't hard, but it's different. The payoff may be real, but it requires change that not everyone may greet with enthusiasm.

"You can work on a spreadsheet, or surf the web together. You can give a lesson on how to use a software program."

Cost

Group videoconferencing requires an investment in hardware for image transmission. A Polycom ViewStation SP for a small to medium conference room starts at \$4,000, and a ViewStation FX for large conference rooms starts at \$15,000. A monitor and cart are also required, and a camera if documents are to be displayed. Larger rooms will require microphones.

In addition, there will be a charge for transmission. New York University estimates the cost of point-to-point ISDN videoconferencing transmission at 384kbps to be \$60.00-\$250.00/hr in the U.S.² Organizations can also use existing networks and leased lines to transmit video. The cost will depend on current operating costs and whether additional capacity will be needed.

Organizations that convert to all IP networks are able to transmit data, voice, and video on the same network infrastructure. To ensure that video and voice communications are high quality, one of the Quality of Service (QoS) techniques need to be used.³

A consultant or systems integrator may be useful for organization-wide implementation. Companies like Wire One can configure a videoconferencing system for clients from a variety of vendor products. Inland Northwest Health Services used Wire One to do a needs assessment and recommend products.

Online meeting systems operate using the browsers already in desktop computers. WebEx offers Pay-Per-Use Meetings for \$.45/minute per user with an additional charge of \$.05 per minute per participant for voice communication if attendees call in to the meeting. WebEx offers more economical subscription services for corporations and businesses that are billed monthly. Video headshots can be included.

Organizations can also purchase software for conducting online meetings from some of the vendors. For example, IBM offers its Lotus Sametime and Quickplace software, which you can load on your own server.

Implementation

Effective use of these tools requires an understanding of their capabilities, a careful definition of objectives and needs, and an awareness of how difficult it is to change established patterns of communication.

Encouraging Use. No matter how elegantly designed or visually attractive, videoconferencing and online meetings will not be greeted with enthusiasm by all managers. Objections will include the assumed superiority of face-to-face communication and the limited skills and willingness of some managers to use computers. As in all computer systems implementations, an effort must be made to educate potential users and to find champions for change in the organization.

Healthcare organizations that are already using videoconferencing for clinical education and telehealth will be able to easily demonstrate the technology to manager. Inviting them to join medical conferences would allow them to judge for themselves how close the experience is to a face-to-face meeting. The Marquette General Health System in Michigan (www.mgh.org) found that managers' familiarity with clinical applications led to requests to use the videoconferencing system for administrative purposes.

Develop Guidelines. Developing and disseminating guidelines are an essential step. For example, when could an online meeting tool such as WebEx produce superior results in comparison to videoconferencing? Examples of how organizations have used these tools effectively can be used to change attitudes and increase enthusiasm. Pilots within the organization or health system can provide success stories and personal references. Archive videoconferences and

online meetings and make them available on the organization's intranet.

User Support. Training and user support are crucial. It takes time to learn to use the controls for any of these systems. The Iowa Foundation for Medical Care assigns a "coordinator" to any meeting that involves new users. This person can help a new presenter or moderator use the controls of a WebEx meeting.

Even an experienced presenter will need assistance to understand the options. For example, WebEx allows a moderator or presenter to poll and receive instant messages. This is useful for large audiences. An online meeting doesn't allow the presenter to see the audience. It's not possible to look at faces to see if a point has been understood. But the audience can use instant messaging to send in questions while the presenter is speaking. These can be viewed by a moderator, who can help the presenter decide when to stop to make comments and how to organize the question-and-answer period, e.g., by the frequency of questions on a topic.

Conclusion

Online meetings and videoconferencing will never replace all face-to-face meetings. If you need to establish personal trust or a consensus about a critical and expensive decision, people will want to be face-to-face. But how many meetings have you traveled to where

you already knew the people involved and the purpose was simply to update them without making any important decisions? Could you have stayed home if there was an effective way of conveying the information and getting com-

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ments? How many times have you hesitated to call "one more meeting," but your team really needed to work together on a report? An online meeting or videoconference could have saved time.

Skipping a face-to-face meeting and viewing people or slides on a monitor isn't revolutionary, but it isn't normal procedure for managers in most health-care organizations. The payoffs will be achieved, as with most information systems changes, only after a careful process of systems selection with user involvement, intensive training, user support, and efforts to change attitudes and develop enthusiasm for the innovation. Track the time and money saved. Advertise the results.

About the Author

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Resources

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Online Meeting Vendors

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Raindance. www.raindance.com

Genesys Conferencing. www.genesys.com

PlaceWare. www.my.placeware.com

Centra. www.centranow.com

Lotus Sametime. www.lotus.com/lcs/aboutmeetings.htm, www.lotus.com/home.nsf/welcome/sametime

Microsoft's NetMeeting. www.microsoft.com/windows/NetMeeting

Videoconferencing Vendors

Polycom. www.polycom.com

VCON. www.vcon.com

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