



What Is Videoconferencing?

Focus

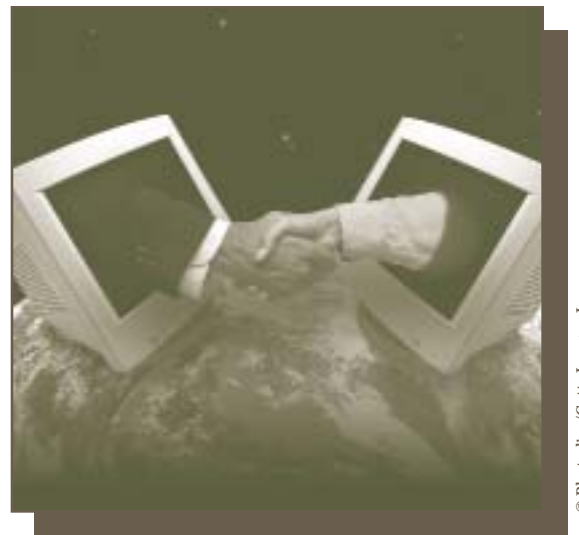
“Visual images can have a greater and more lasting impact than words alone.”

—Julian Goldstein & Jeremy Goldstein in
Videoconferencing Secrets

Communicating by Video

Videoconferencing is the use of digital video and audio technology for two-way communication across long distances. Most often, organizations use videoconferences to reach a large number of people in separate locations. A videoconference is less time-consuming and much less expensive than the travel costs of bringing together the same number of participants in one location for a presentation.

Thousands of businesses and services throughout the U.S. use videoconferencing technology daily. They train their staffs in distant cities, hold sales meetings, review the status of projects, troubleshoot production problems, monitor security, and even diagnose illnesses.



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Figure 1-1: Communicating by video

In the Beginning

Videoconferencing traces its origins to the mid-1960s when AT&T demonstrated its *Picture Phone* at the 1964 New York World’s Fair. About the same time, the cartoon TV series *The Jetsons* showed a futuristic family using TV for two-way communications with friends and family.

Just because something is possible is not enough to make it popular for every day activities. It must also be affordable and practical. For videoconferencing, these conditions were not reached until almost two decades after its introduction.

Progress

In the mid-1980s manufacturers started to produce videoconferencing systems on a large scale, which brought prices down to a level that commercial users could afford. Telephone companies developed special lines, called **digital circuits**, to send television programs and two-way video signals around the country, making it possible for large

and medium-sized corporations, large universities, and the Federal government to use videoconferencing.

Today

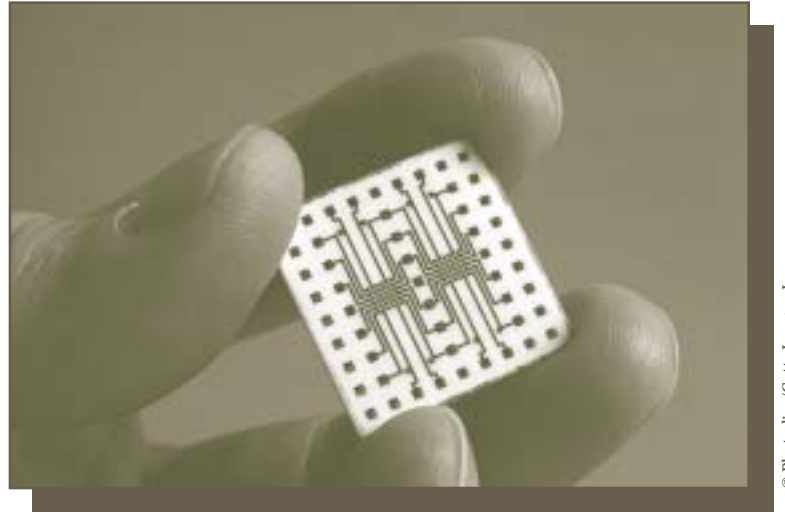
Three recent breakthroughs encourage the widespread use of videoconferencing:

- The development of special microchips has made videoconferencing systems cheaper, more reliable, and easier to use.
- New, more efficient software programs to handle video communications have been standardized for worldwide use. These are called **compression algorithms**.
- The telephone **digital network** technology for videoconferencing systems has become much more sophisticated. This technology allows for the more economical and efficient exchange of information across a group of connected computers and phone lines.

Videoconferencing equipment and operation now cost a fraction of their price just a decade ago. This has caused an explosion in the type and amount of videoconferencing technology in use today.

The growth of videoconferencing parallels the telephone's development. When only a handful of telephones were available in a city, they had limited usefulness. They became an essential communication tool only when nearly everyone gained access to telephones. Similar growth is occurring in videoconferencing.

Today, companies such as Unisys, General Electric, Hewlett-Packard, and others use videoconferencing to cut travel costs. Universities such as Cal Tech, MIT, and Vanderbilt provide workshops through videoconferencing, and branches of the federal government train their staff by way of videoconferences.



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Figure 1-2: Special microchips make videoconferencing systems more reliable.



Types of Videoconferences

A videoconference is any two-way communication involving video. It's similar to watching videos at home, but with another person or several people on the other end watching you back. Most videoconferences involve multiple (more than two) locations. For a comparison, think of a three-party line or conference call on a telephone. This type of videoconference is called a **multipoint videoconference**, and the biggest difference between it and a telephone conference call is that you can see the people who are involved in the conversation.

Since videoconferences occur in multiple locations, some means of control is needed. There are three methods of controlling these meetings:

- **Voice-switched**
- **Chairman-controlled**
- **Continuous presence.**

Voice-Switched Videoconferences

In a **voice-switched videoconference**, only the person speaking or that speaker's location can be seen on screen. When a different person talks, whether in another city or in another location in the building where the videoconference is being held, the system switches to that voice, and the new speaker's location is seen on the TV screen. This is the most common type of videoconferencing and is valuable when discussion among participants needs to occur.

Muting or turning off the microphone or headset at all non-speaking locations is important in a voice-switched videoconference because all noises will be broadcast to others. These noises are distracting and may even cause the conference to switch the video to an improper location. Although a slight delay is built into the voice-switch to prevent this from happening, it is still possible. You don't want a sneeze or inappropriate comment to be seen or heard by others!

Chairman-Controlled Videoconferences

During the entire time of a **chairman-controlled videoconference**, only one person, the presenter, is seen. Everyone in attendance, however, can *hear* anyone who speaks or asks a question. Since a



Figure 1-3: Chairman-controlled videoconference

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chairman-controlled conference focuses on the leader, interaction among other participants is discouraged. Training classes are often conducted by the chairman-controlled method, so the instructor can direct the activities of the virtual classroom created by the videoconference technology.

Continuous Presence Videoconferences

A **continuous presence videoconference** allows all meeting participants, usually a small number, to participate at all times. Each person or location is displayed, and a small picture-inside-a-picture is shown on the screen, much like participants in a game show are all seen on the TV screen at once. Some facial details are lost, but the sense of the group is maintained.

Used less frequently than voice-switched videoconferences, continuous presence videoconferences are valuable when it is important to view all participants at all times, as in a team presentation or debate panel. Frequently, all microphones are left open (un-muted) so that fast-flowing conversations are possible.

Alternative Means to Information

Some videoconferences occur even when certain individuals who need to participate do not have access to the videoconference system. How do these people obtain the needed information? Several methods are commonly used:

- **Videocassette recording.** A videoconference can be recorded on a videocassette recorder (VCR) for later viewing. The drawback to VCR usage is that it eliminates real-time interaction with other participants. Questions are asked independently by the VCR viewer and followed up by the speaker several days or weeks after the videoconference.
- **Voice telephone line.** A voice telephone line can be connected to a videoconference, allowing participants in remote locations to hear and respond to what is being said, but not to see the speakers. Sometimes, this leads to confusion about who said what, but the problem is usually minor, especially if the telephone participants know all the other participants and can recognize their voices.
- **Web cast.** Individuals who wish to only observe the videoconference can do that also, through a **web cast**. The videoconference host sends one-way audio and one-way video of the meeting so the individuals on the Internet can



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Figure 1-4: One-way video web cast



hear and see the videoconference. To allow an opportunity for questions from participants in remote locations, a telephone or facsimile (FAX) call-in number or an e-mail address can be provided during the conference.

- **Public videoconference rooms.** Similar to public pay phones in concept, **public videoconference rooms** can be rented from most telephone companies, videoconferencing centers, some public libraries and universities, and some office supply outlets such as Kinko's™. Costs range from \$200 to \$400 per hour and usually include room and equipment rental, network charges, and scheduling fees. This is a practical option for organizations that have only occasional need for videoconferences.

Tip

Contact local universities and public libraries to see if they allow the public to use their videoconferencing facilities. The fees can be much lower than telephone companies and office centers.

Activity 1-1: Finding Words

Figure out what words the following clues represent. Then circle the words in the grid. Words can go horizontally, vertically, and diagonally in all eight directions.

1. the use of digital video and audio technology for two-way communication across long distances
2. special telephone lines that send television programs and two-way video signals around the country
3. more efficient, standardized software programs to handle video communications
4. technology that allows for the more economical and efficient exchange of information across a group of connected computers and phone lines
5. a videoconference involving more than two locations
6. a videoconference in which only the person speaking or that speaker's location can be seen on screen
7. a videoconference in which only one person, the presenter, is seen
8. a videoconference that allows all individuals in attendance at a meeting to participate at all times

9. one-way audio and video viewed over the Internet

10. videoconference facilities and equipment available for rent from phone companies and public libraries

V B X R N B N H L K N L W L T V X Z Y N Z L X H B W Y Q
O Y Q W M B N R K R C G M T Y N F S H C H B L K L Z M N
I B K R Q T X D C B P T M R D T T B J G H Z L L P N O T
C M C B M H D M I L R J R N M I R B N N M D Z L Y K O L
E U D H T T D C Q G K W W W U Y R Y F J N F W P K W R L
S L K W M C T K X Z I X T C M N K T R C C P V H N H E B
W T X R D T H K G K X T R H R M G R H M P Y W L B X C T
I I M B Y Y K L M V L I A R R F B A R X G K V F K W N G
T P N W Y R H Y L R C B Q L H F I K V J P F R P N Z E N
C O V R F J B T N L V V T T N R B K Z P N M L J Y P R I
H I N D B F M J A G L K R Z M E Y T W M T N T R D G E C
E N T F V L X T N Q F T C A Z C T L S N Y R Z L J K F N
D T T T Z R I C R V K M N N N L W W M A D V V G L T N E
V V C G P G L R R W V C W W X N J L O K C D Y H Y M O R
I I L H I Z T X M Z O N X X D W L D J R P B F Z R J C E
D D K D N Y W K X N G B Z V V P P M K C K T E J Y K O F
E E G Y F L K T T T M K N R Z C Q L T X P D M W L L E N
O O Z Q G K X R K J V H D B C Q N J T K X G P L Z T D O
C C T X R Y O T F Q J F C L C B K L V N X Y R C T B I C
O O R R M L M M E C N E S E R P S U O U N I T N O C V O
N N L M L C K K C J R K V W R T Z L H N W K Q N J R C E
F F W E V H F L H L T N V Z N H G K T D K P R R Q P I D
E E D N K N H N M L V D F H J F Z L N M B T B W D J L I
R R T Y G M Q N T N T X Q T W N H L D G W M M M J P B V
E E D C O M P R E S S I O N A L G O R I T H M S D F U Q
N N V H T D W G B K N Y G C N T R V N Y H N K G B M P N
C C J R R W Q K M L H B B L F M T P Q V P L L K M H F T
E E P R N B N M G M Y K T T D Y W R V Z N Q T P K F Z N

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Activity 1-2: Using Videoconferences

Organizations that might wish to use a videoconference to reach participants in different locations are listed below. In the blanks, write two purposes for which each organization might choose a videoconference for communicating.

AT&T

Announce a reorganization

Describe a profit-sharing plan

American Red Cross

U.S. Department of State

American Medical Association

Sprint PCS

Michigan State University

Unisys

Public High School District

Chain of Business Schools

Activity 1-3: Recommending Videoconference Type

Read the three case studies below and list the type of videoconference you would recommend in each situation. Choose a voice-switched conference, a chairman-controlled conference, or a continuous presence conference. Write the reasons for your recommendation.

Case Study 1

You are a technology manager for a restaurant chain with 300 locations across the country. The new software system that is used to create customer food checks and receive money has developed serious problems. Two people from the management division in Dallas and three people from the engineering division in Missoula, Montana, need to meet in a videoconference for one full day to decide how to handle the situation.

Type of videoconference recommended: _____

Reasons for recommendation: _____



Case Study 2

The New York City life insurance company where you work wants to introduce a new investment plan that will be made available to its employees aged 25–55 who work in Atlanta, San Diego, Chicago, and Phoenix. The vice president of human resources asks you to arrange a presentation that will be received via a videoconference at each site.

Type of videoconference recommended: _____

Reasons for recommendation: _____

Case Study 3

The athletic shoe company where you serve as a technical assistant in the videoconference center is developing a new lightweight shoe. Project teams from around the country need to meet to discuss their progress on various aspects of the shoe's development.

Type of videoconference recommended: _____

Reasons for recommendation: _____

Activity 1-4: Recommending Alternative Methods

Assume the company where you work does not have a videoconference center. Read the three case studies below and decide which alternative to attending a videoconference would be the most valuable in each situation. Choose VCR viewing at a later time, telephone hook-up to a videoconference, or public videoconference room. List the alternative method you recommend and the reasons for your recommendation.

Case Study 1

The vice president of a frozen food processing plant has not had an opportunity to visit offices in Omaha, Boston, Kansas City, and Seattle in the last year. Nevertheless, she would like new people in the offices to get to know her better and view her style of communication, even though she is unable to visit all the offices in person.

Recommendation: _____

Reasons for recommendation: _____



Case Study 2

The manager of engineering at an office furniture manufacturing company has questions regarding the design of the firm's new ergonomic chairs. He is unable to attend in person the videoconference that has been scheduled for discussion of the design problems. You arranged the videoconference, so he asks you to recommend how he can be involved in the conference.

Recommendation: _____

Reasons for recommendation: _____

Case Study 3

The new president of a regional bank headquartered in Chicago wants to meet by video-conference with all employees in the Milwaukee branch, but the branch does not have a videoconference room.

Recommendation: _____

Reasons for recommendation: _____

