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Emerging trends in presentation technology

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Emerging trends in presentation technology

Abstract

Presenters who are responsible for delivering this message are concerned with how best to communicate it in an effective way. They make choices concerning the needs of today's learners who have grown up in a technologically advanced society where constant change necessitates a greater need for training and development and where a multitude of professional organizations are providing their constituents with the most updated information in their field. According to Koenig {1982), "the continuing changes in our world require continuing re-education, re-tooling of human resources, and the effective use of communication and technology in education and training" (p. 1). 2 Because of their exposure to mass media, today's audience "learns" differently than previous generations and there seems to be no question that modern communications technology should be brought into their learning situation. How can conference centers provide better services in preparing for the needs of presenters? Accustomed to traditional technologies, how do media providers plan for the future and emerging technologies? What are they and what are their implications for use?

EMERGING TRENDS IN

PRESENTATION TECHNOLOGY

A Research Paper

Submitted to the

Department of Curriculum and Instruction

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

UNIVERSITY OF NORTHERN IOWA

by

Pamela R. Reisinger

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TABLE OF CONTENTS

CHAPTER 1

Introduction

Media services providers in the field of Conference and Event Management are continually confronted with the need to keep abreast of new technology and to re-examine the available methods of delivering "the message."

"The message," as defined by the author for the purposes of this research, is designed to educate an audience in the form of a large group presentation, consisting of a minimum of 100 adults. This audience is brought together for training purposes or for the purpose of communicating a new concept.

Statement of Problem

Presenters who are responsible for delivering this message are concerned with how best to communicate it in an effective way. They make choices concerning the needs of today's learners who have grown up in a technologically advanced society where constant change necessitates a greater need for training and development and where a multitude of professional organizations are providing their constituents with the most updated information in their field. According to Koenig (1982), "the continuing changes in our world

require continuing re-education, re-tooling of human resources, and the effective use of communication and technology in education and training" (p. 1).

Because of their exposure to mass media, today's audience "learns" differently than previous generations and there seems to be no question that modern communications technology should be brought into their learning situation.

How can conference centers provide better services in preparing for the needs of presenters? Accustomed to traditional technologies, how do media providers plan for the future and emerging technologies? What are they and what are their implications for use?

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Purpose

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The author's intention is to identify the traditional technologies being used in large group presentations, explore the innovations in media technology, and suggest how conference center media providers might better prepare themselves for the needs of their clients.

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Definitions

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Computer-based multi-media systems. A general term used to describe multi-media presentations that are produced and/or controlled by a computer.

Desktop video. A system that displays video games or other televisionlike video on the screen of a personal computer, sometimes using audio.

Electronic presentation room. A meeting space intentionally designed to enhance the reproduction of visual and oral messages.

Liquid crystal display projection (LCD). Liquid crystals are interposed between a light source and an observer to provide a data display. The crystals do not generate light but can be switched from an opaque to a transparent state.

Multi-media. Refers to any audiovisual presentation using more than one medium, for example, slides, video, sound, and movies.

Overhead television camera system. A video system that uses a fixed-focused camera mounted above a copy board. Printed materials, transparencies and three-dimensional objects can be viewed on a television screen.

Technology. Any information delivery system that allows its users to create, access, process, store, and communicate information. The information delivery system comprises two separate yet interdependent components: media and hardware.

<u>Videoconferencing</u>. A form of teleconferencing where participants see, as well as hear, other participants at remote locations via telecommunications links.

CHAPTER 2

Review of Literature

<u>Traditional Presentation Technology</u>

Before it is possible to understand or appreciate
what is innovative in media product development, it is
first necessary to identify and understand the
traditional technologies that have been and are still
being used, how they are used, their advantages and
disadvantages, and the implication for future use.

One common characteristic of the following
technologies is that they all involve projecting
visuals, which is the most common use of media in a
presentation situation. According to Heinich, Molenda,
and Russel (1982), " . . . projected visuals have long
been popular as a medium of instruction as well as
entertainment. The lighted screen is a silent shout--a
shout likely to be heard and heeded even by the most
reluctant learners" (p. 114).

Heinich et al. (1982) note, however, that the
effectiveness of the presentation is most often
dependent on the presenter and the equipment is only a
means of providing supplemental support.

Overhead Transparency Projection

Characteristically, overhead transparency projection is a relatively simple technology that has gained much popularity over the past couple of decades. Light from a powerful lamp is projected through a reflective lens/mirror system and passes through a transparency, which directs an image to the screen. The transparency, itself, is easily produced and can be used alone or as several presented one after the other in a series to get across a more complex concept. This medium is appropriate for presenting facts visually to supplement the instruction or presentation.

Advantages. There are many advantages to using overhead transparencies (Heinich et al., 1982):

1. They can be used in normal room lighting due to the amount of light able to be projected with the bright lamp.

2. The presenter is able to face the audience during the presentation and establish eye contact.

3. The presenter is able to manipulate the materials by moving them around, marking on them, highlighting, and pointing to them.

4. Transparencies can be easily produced or purchased commercially.

5.   They are <u>well designed for large group</u>
<u>presentation</u>.

<u>Limitations</u>. Heinich et al. (1982) continues by
citing a few of the limitations of overhead projection:

1.   Overhead projection is unable to provide audio
accompaniment with independent video sequencing.

2.   There is a need for "production" when some
materials cannot be presented in their original state.

3.   A "key-stone effect" can occur due to
distortion in projection angles, requiring a special
tilted screen to off-set the effect.

<u>Future Implications</u>. Because of its simplicity
and the advantages cited, overhead projection is most
likely going to be an equipment mainstay for some time.
Innovations linking the overhead projector to the
computer now update this projection system and give it
interesting new capabilities. These changes will be
addressed later when the author discusses how
traditional formats are enhanced with computerization.

Photographic Slide Projection

Slides, photographic images mounted individually
in standard 2" X 2" frames, are similar in concept to
transparency projection in the way an image is

projected on to a screen using a slide projector, but provide much more versatility.

Addressing the effectiveness of slides, Sunier (1981) states:

Slides are effective means to holding attention, clarify points, and enable the audience to share experiences otherwise impracticable. Slides are the most flexible of audio-visual media; they are practical, versatile and cost effective. They offer high production values while preserving visual images of superb quality, and in a format that can be readily updated. (p. 9)

Sunier (1981) goes on to cite that there is an increase in the use of slides by presenters in recent years and are growing in importance with the use of multi-media and with their suitability for presenting messages that relate concepts to each other.

Advantages. When evaluating slide projection, Heinich et al. (1982) cite the following advantages:

1. Slides are more flexible--they can be arranged and rearranged into a variety of sequences.

2. Slides are more easily produced and more economical as advanced photographic equipment makes it easier for amateurs to make good slides.

3. Remote control projectors allow the presenter to remain at the front of the room or have the flexibility to move around while using a remote advance mechanism.

4. Some projectors can be preset to automatically advance slides every so many seconds.

5. It is easy to make permanent collections of slides to present a variety of programs.

The versatility of display through slides allows for visuals to be designed to provide realistic visual representations through a progressive disclosure of information. This is accomplished with a series of slides that expose sections of an illustration or a series of points by increasing the amount of the total image as each subsequent slide is screened.

Limitations. Commonly known difficulties with slides are:

1. They can easily become disorganized and out of sequence in the tray or easily spilled out if the locking ring is loose.

2. They can be easily damaged.

3. They can jam due to varying mounting thicknesses.

4. They generally require dim lighting for effective projection which makes it difficult for note taking.

5. Commercial costs and processing delivery may be prohibitive.

Future Implications. Sound/slide combinations now merge slide imaging with audiotape to create more drama in the effect and, in turn, enhance learning. With the use of a dissolve unit, an audible beep on the sound track signals the advancement of slides in a story-telling sequence. This "movement" effect can economically challenge film or video and is the basis for many multi-image presentations.

Slides have always been an excellent format for large group presentations and will continue to prevail as computerization continues to create more enhanced images for multi-image presentations.

Film Projection

Film comes in a variety of formats, though 16mm is most common for presentations or instructional use. Combined with a soundtrack, film gives us a more "realistic" image of the world around us. Heinich et al. (1982) offer:

The basic function of all the "hardware" connected with the recorded moving image - camera, projector, etc. - is to take advantage of this "persistence of vision sensory phenomenon" related to images blended together to create an impression of actual movement. (pp. 186-187)

As with any medium, audience analysis is of primary importance to a presenter using film to deliver a message. Much of what a viewer interprets watching a film is based on experiences and cultural differences. The message will be meaningless if the viewer's background doesn't allow them to perceive the message as it was intended.

Advantages. Heinich et al. (1982) point out the many attributes of film, addressing "its ability to manipulate temporal and spacial perspectives . . . not only serves dramatic and creative ends, it also has important implications for instruction" (p. 191). They cite some of the unique characteristics of film that give it a distinct advantage over other media. The first characteristic is the manipulation of space which allows an image to be viewed from close range or from a

distance and can cause the subject to appear or disappear as needed.

The <u>alteration of time</u> characteristic supports the concept that "film permits us to move through space in what might be called altered time" (Heinich et al., 1982, p. 192). Not only can film speed up time it can take out pieces of time, such as cutting to a scene after it has happened.

<u>Compression of time</u>, better known as time lapse, provides an important educational advantage as a process that may take a long time. It allows it to be seen as it develops.

The opposite effect of compressing time would be <u>expansion of time</u> which allows the slowing down of events that are too fast to be seen by the human eye. This can be done by filming at high speed, then projecting at a normal speed. This allows you to see, more precisely, the sequence of events.

One of the most unique characteristics about film is how it can <u>reveal the unseen world</u>, deep under the seas or in the far reaches of outer-space. With the use of x-ray cinematography, we can observe a baby's development or how the organs function in a human body.

Arrested motion (freeze framing) "permits us to
isolate components of an event for detailed study"
(Heinich et al., 1982, p. 193) in helping to teach or
present technique.

Film also allow moving the motionless (animation),
"a technique in which the filmmaker gives motion to
otherwise inanimate objects" (Heinich et al., 1982,
p. 193). Computer-generated animation works in a way
that "the animated images generated by the computer can
be displayed on a cathode-ray tube and then be
photographed by a motion picture camera, or they can be
electronically imprinted directly on videotape"
(Heinich et al., 1982, p. 193). This type of animation
can be not only instructional but interesting in the
way it can distort images such as turning them inside-
out.

Heinich et al. (1982) also go on to cite the
instructional advantages of film. A distinct advantage
of film over other media is:

1. Film's ability to show motion.

2. It can present a difficult to observe process
more effectively.

3. Film permits safe observation of phenomena that might be hazardous to view directly (violence, disasters, chemical reactions, etc.).

4. It allows a dramatization of events in a way that viewers can learn to deal with human relations problems by observing problem situations (particularly useful in programs designed to train personnel to handle difficult human relationship situations expeditiously and graciously).

5. Film can teach skills through repetition.

6. The emotional impact of film can effect change in personal and social attitudes and can provide open-ended episodes that can be used effectively in problem-solving instructional situations, leaving resolution for the group to discuss or solve.

7. It can present the subtleties of unfamiliar cultures and their relation to our own.

8. It is able to command attention in the instructional situation by altering the rhythm of images on the screen and can provide cuing power by using close-ups and image framing to direct attention.

9. Film is ideal in instructing heterogeneous groups with common interests which requires less instruction intervention.

Limitations. A prohibitive use of film is its
expense in relation to videotapes or slides and the
fact that film stock cannot be erased and reused.
Great care must also be taken in its handling to
prevent breakage and that it must be cleaned regularly.

In presentation, it is not the best media for
stopping a visual for more detailed discussion.

Future Implications. Film can be a persuasive and
motivational medium which can leave a lasting
impression through emotional impact, but from a
presenter's point of view, may not be the most
practical in terms of production and instructional
flexibility.

With the innovations in video technology, film is
rapidly being replaced as a medium of choice.

Video Projection

The emergence of the video camera has allowed
presentations to virtually speak for themselves without
the traditional method of delivery (overhead
transparencies, slides, flip charts, etc.) that present
only dry facts.

Video, as defined by Langman and Molinari (1990):

. . . refers to picture information or a

medium which uses television to transmit and

receive power. Video has emerged to a position in which it is no longer synonymous with television. For instance, video does not have to be sent from long distance as TV does. . . . Television is, or has become, only one form of video, albeit a major one. (p. 279)

Using a video camera, images are collected through a lens and sound from a microphone. The electronic signals that are collected are then changed to magnetic signals by a video cassette recorder (VCR).

Videodisc, popular in the early 1980s, is described as "a record that plays sound and pictures through a conventional TV receiver" (p. 296) and has made a strong comeback due to technological advances in videodisc players, large screen TV sets and consumer demand for better quality pictures. The grooveless disc (the most popular) is decoded by means of a laser. Pre-recorded discs sell for about the same as a video cassette, but the videodisc player cannot record and ". . . because of it's inherent complexities and relatively high cost, presently remains outside the realm of the average consumer" (p. 298).

Langman and Molinari (1990) also talk about the drastic changes in the video field with the replacement of awkward video cameras with small, manageable camcorders, the reduced costs of video cassette recorders, the rebirth of the laserdisc player, digital videotape recorders and signal processing, and time base correctors and editing consoles that have changed post-production work.

From a presentation point of view, video has the unique capability to capture sight and sound for immediate playback, working well with activities that are enhanced by immediate feedback such as group dynamic sessions, skills training, and interpersonal techniques.

> The video tape is also a useful tool for supplying role model instruction for professional decorum or personnel management skills. For those whose learning style involves a culturally conditioned need to seek out role models from their peer group, the video tape provides excellent feedback. Good and bad role modes can be presented. (Shively, 1982, p. 105)

Advantages. There are several advantages to video use which makes it a popular medium:

1. Video can reproduce motion (with or without sound) to display both relevant stimuli and desired response (show what to do and what not to do).

2. It can provide instant replay to critique or evaluate performance.

3. Visual effects can be produced to enhance either the learning process or entertainment value of the presentation (such as, compression or extension of time, split or multiple screen imaging for a variety of visual cues, and exaggeration of motion through various speeds).

4. Content and sequencing of the training can be used interactively with workbooks, guides, texts, tools, or other items used on the job. (J. Wedman, personal communication, February 19, 1985).

Limitations. Wedman (personal communication, February 19, 1985) continues by addressing the limitations inherent in video production:

1. Video equipment is required to be locally available and compatible with the video tape.

2. Video script writing is difficult and time consuming.

3. Production costs are high and talented production teams are scarce.

4. Several monitors or a video projection system is required for large audiences.

5. The amount of lettering on graphics for video is limited to about one half that of film or slides.

6. Rapid changes in technology make obsolescence of video systems a continuing problem.

Future Implications. Video technology has gone through many rapid changes in the past few years and according to Langman and Molinari (1990), video's potentials are only beginning to be explored.

Much of what is being done in video technology today is in conjunction with new computer technology which will be addressed with the emerging technology later in this paper. The future for video, however, looks very bright.

Emerging Presentation Technology

Having identified the most popular traditional technologies used for large group presentations, their advantages and limitations, and the implications for future use, the author now intends to address some of the new, evolving technologies. Coincidently, much of what is emerging is little more than updating what has

traditionally been used, with computerization. The
author will introduce the new technology and address
the potential uses as a presentational format.

It is important to keep in mind that technology
should never replace the presenter or trainer but
should enhance the learning. New technology opens up
new information channels and shortens the distance
between the sender and receiver and collapses what
Naisbitt (1984) refers to as the "information float:"

> The pace of change will accelerate even more
> as communications technology collapses the
> information float. The life channel of the
> information age is communication. In simple
> terms, communication requires a sender, a
> receiver, and a communication channel. The
> introduction of increasingly sophisticated
> information technology has revolutionized
> that simple process. The net effect is a
> faster flow of information through the
> information channel, bringing sender and
> receiver closer together, or collapsing the
> information float - the amount of time
> information spends in the communication
> channel. (pp. 14-15)

An example of reducing the time spent in the communication channel would be the comparison of sending a letter versus sending a facsimile.

Naisbitt (1984) goes on to describe the way we have responded to technology with the term "high tech/high touch" and states that ". . . whenever new technology is introduced into society, there must be a counter-balancing human response--that is, high touch-- or the technology is rejected. The more high tech, the more high touch" (p. 35).

Ironically, it can be said the technology of jet airplanes has led to more meetings, supporting Naisbitt's (1984) statement that "the more technology we introduce into society, the more people will aggregate, will want to be with other people . . ." (p. 42). This indicates that though information could be disseminated in a more high tech, individual way-- people will attend conferences and meetings to reach out for the human element.

The author will now identify some of the new technology emerging on the market, how its used for presentational purposes, and implications/benefits for future use by conference planners.

Naisbitt (1984) suggests that "it is important to think about the computer as a tool that manages complexity . . ." (p. 40) and the following literature review indicates that most of today's enhancement of traditional formats is linked to computer technology.

Liquid Crystal Display Projection

Overhead transparency projection has now been provided the means to integrate the overhead and the computer for presentations using liquid crystal display (LCD) panels atop overhead projectors to display computer data. Information taken directly from the computer screen is sent to the LCD panel, allowing the overhead projector to transfer the image to a large screen. LCD projection panels have become popular with many presenters as the image provides brilliant color which remains crisp and vivid even after hours of use (Seitz, 1992).

Benefits provided by LCD projection are numerous as presentation material is limited only by what the computer is capable of, including graphics and full-motion animation. The panel, itself, is easily portable and will work with existing equipment, thus limiting expensive equipment purchases.

Large Screen Projection

No matter what presentation technology is used or how the message is produced, it is of primary importance that the audience can see what is being presented to their best advantage. This means the direct projection of any computer data, graphics or video used.

Seitz (1992), notes that "projection has been an area of rapid innovation, increasing quality and more choices for the buyer. Great studies have been made in ease of use, portability and compatibility with a wider range of signal sources" (p. 46).

For more than a decade, video and data projection has come in the form of a three-beam configuration, using cathode-ray tubes (CRT), which project the primary colors of red, green and blue from three separate beams of light converged to strike the screen in perfect alignment. According to Seitz (1992), CRT projection is "a proven technology that offers versatility and a bright, high-quality image" (p. 46).

In contrast to most of today's large-screen projection equipment (which is large, heavy, and requires careful alignment after being moved), the new projection technology no longer requires fixed

installation for optimal use. Automatic convergence
systems now allow presenters more flexibility with the
location of their presentations.

Seitz (1992), addresses LCD projection when
discussing benefits of emerging projection technology
by stating:

A fast-maturing alternative is the LCD

projector. Liquid crystal displays were

first used atop overhead projectors to

display computer data, but until recently

were not suitable for displaying video. With

improvements in LCD technology, including

color, higher resolution and greater speed,

LCD-based systems can now project video as

well as high-quality computer images.

(p. 46)

Though non-existent just a few years ago, the new
technology of LCD projection offers presenters the
benefits of portability and ease of set-up as well as
improved image quality.

Video Projection

A well-done video, according to Yager (1992),
provides professional-looking presentations, unique in
their ability to condense information and "in these

days of intense competition, it can provide the edge
that gets your, your ideas, and your company noticed"
(p. 108).

Video technology is rapidly changing and expanding
to meet the needs of its many users and appears in many
new forms. The author intends to address those which
will have the most impact for presenters and conference
planners.

Overhead television camera system. This is a
video system viewed on a television screen which
features an electrically operated 8x zoom lens and a
high-sensitivity CCD camera. The EV-308 Visual
Presenter, looking more or less like a conventional
overhead projector, is capable of producing high
quality video images from originals ranging from normal
printed matter, slides and transparencies to three-
dimensional objects--even moving specimens such as
insects (Elmo Co., LTD., promotional materials).

Many of its features will entice presenters
including:

1. It is able to show graphs and diagrams at a
larger size which makes for a more professional
presentation.

2.   Slides can be presented from a 3mm - 4" x 5"
format.

3.   Images are clear without special lighting and
the presenter has subtle control over colors.

4.   A three-way audiovisual source selector is
built in and includes input facilities for two external
video sources.

5.   It has a built-in pre-amplifier for microphone
input.

6.   It can be used as a conventional video camera
by tilting the head to possibly capture liquids in a
breaker or a picture on the wall.

7.   A compact design makes it easy to give
presentations almost anywhere (Elmo Co., LTD.,
promotional material).

The EV-308 introduces a technology that is ideal
for design presentations at a planning meeting or
possibly where there is a need for an effective display
of three-dimensional subjects.   The result is more
effective communication with the audience and
impressive video presentations (Elmo Co., LTD.,
promotional material).

Computer-based multi-media systems.   Apple
Computer, Inc. is one of many computer companies that

has introduced innovative new software, called QuickTime™ that allows presenters to work with video and sound on the MacIntosh computer. With this software, corporate presentations can include a video of product demonstrations, architectural illustrations can show an animation of the building site, and teaching materials can contain videos of historic events or clips showing how to run an experiment or play an instrument (E. Cranston, personal communication, November 10, 1992).

This technology functions by connecting a video source to the video-capture card in the MacIntosh computer while connecting the sound output cable to the computer's input port. A videotape or laserdisc is then put into the play mode while enacting the record button on the computer. The result is a moving video image in a window on the screen. Technology can also covert analog information from a video source (video cassette recorder, video camera, etc.) into digital information that the MacIntosh can use (Apple Computer, Inc., promotional material).

The controls for a QuickTime™ movie are similar to those found on a VCR or a tape deck. They let you play, pause, fast-forward, and rewind. A speaker

control lets you adjust the play-back volume and a
slider on the play bar allows you to move quickly to
any point of a video sequence. Segments of video
images, sounds, animation sequences, and still images
can be copied, pasted and shared like any other
MacIntosh file. From a production aspect, you are able
to edit and customize your presentation without
requiring any additional hardware or software (Apple
Computer, Inc., promotional material).

Presenters are faced with endless possibilities
with this high-quality, digitized technology. Video
projection systems, linked directly with the computer,
can bring large screen imaging that may allow viewing
of corporate presentations, watch scientific
simulations, access animated on-screen help files, or
learn from expert demonstrations (E. Cranston, personal
communication, November 10, 1992).

Desktop video/videodisc technology. Yager (1992),
addresses the emergence of desktop video production by
stating:

Today the power of video communication can be
applied in a way you might not have considered: as
a vehicle for your message. Desktop video
production means that you, with the help of a

computer, can express your ideas through sights and sounds that can make a powerful impression on your audience. (p. 106)

There is a dependence today in our fast-paced world on video-based information as "video let's you transport your audience to other places" (Yager, 1992, p. 108) and by integrating video recording equipment with the computer, it is possible for a person to produce their own computer assisted video productions by using the computer to take control and give the commands.

Shively (1982) sees the videodisc player as a continuation of the standard features of the filmstrip, videotape and television and states:

When the videodisc is interfaced with the micro-computer, the range of instructional possibilities is multiplied. Motion sequences in color, accompanied by stereophonic sound, can be followed by a sequence of still frames. Each frame can be delayed or repeated. (p. 106)

New videodisc technology comes in the form of a laserdisc player which features, according to Shively (1982): (a) manual frame access, (b) fast and slow

motion, (c) forward scanning, (d) dual sound tracks (especially useful for bilingual training), (e) freeze-framing, and (f) manual frame advance.

From a presenter's perspective, Yager (1992) notes that "graphics can be interspersed with live video, voice-overs, and music that advance the audience's respect for your company and ensure that the facts are interpreted the way you want them to be" (p. 108).

Interactive video technology. There are many ways to define interactive video (IV). One of the most comprehensive definitions is offered by Hoekema (cited in Bunderson et al., 1983, p. 5):

Interactive video is a system of communication in which recorded video information is presented under computer control to active "users," who not only see and hear pictures, words and sounds, but also make choices affecting the pace and sequence of the presentation.

In essence, IV is the marriage, or union, of the computer and the video cassette/disc recorder. In its basic form, the only equipment needed is the computer, keyboard, disk drive, and color monitor along with a VCR. The two systems (computer and video) are interconnected by an interface card in the computer.

Through the interface passes the instruction that moves the video tape to an appropriate starting point, switches on the video and audio signals, and causes the signals to be displayed on the monitor.

With the assistance of the microcomputer, the VCR can automatically perform the fast forward, rewind and branching program functions. The VCR receives its instructions from the computer which process pre-programmed commands stored on floppy disks. IV programs typically include questions which can usually be inserted by the computer at any place in the video tape. If the user answers incorrectly, the video tape automatically searches out a specific segment for immediate remediation and/or review (W. Callahan, personal communication, March 25, 1985).

Compared to the "linear" format of the conventional VCR, the beauty of interactive video is its ability to "branch out" from any element in the program to another element. In more sophisticated programs, branching allows a program designer to do more than simply respond correctly or incorrectly to an answer. The ability to branch can allow for the evaluation of the learner's competency in a pre-test situation and determine whether or not the learner

needs to view a specific segment at all or if they should continue on to more advanced material. Branching enables a training program to identify and focus on gaps in comprehension (W. Callahan, personal communication, March 25, 1985).

What makes interactive video programs so valuable is that a single program can be designed to meet the training needs of many levels of learners from the expert to the novice, from the slow-paced learner to the fast-paced. This eliminates the need for costly separate tape productions for each level of competency.

There are several characteristics that are helping interactive video become a success. As the term "interactive" implies, interactive video technology involves the learner. During the instructional sequence, the learner must follow the instructions viewed on the monitor, watch the presentation and then enter responses or make appropriate decisions (Hoekema, 1983).

The system also provides reinforcement that is both immediate and positive by playing back the segment for review or branching into another learning sequence to promote a "correct" answer when the question is asked again. All interactive programs have

personalities in that a program's behavior and
friendliness communicates a set of attitudes toward
both the subject matter and the viewer. Designers must
be careful to program this behavior to elicit a
positive response (Hoekema, 1983).

The motivational aspects of interactive video
begin with the fact that is a new technology, thus
making it more intriguing. Another motivation for use
is that it is learner controlled and requires little
interpersonal skills. However, this does not imply
that social skills can not be learned through
interactive video instruction. On the contrary, a
specific skill can be broken down into component parts
and demonstrated using interactive video instruction
before a presenter might bring learners together to
role-play and practice the skill (Hoekma, 1983).

There are a variety of instructional formats
possible. The "tutorial" format, the most common, is
structured to provide a viewing of information followed
by questions. "Simulation" occurs where a person is
asked to perform a task that simulates a real-life
situation. An example might occur in a hospital
emergency room training session where a video sequence
of an incoming injured patient is being viewed by a

student nurse. The video sequence is interrupted, requiring the student to make a procedural decision or a decision about what drugs to administer. "Drill and practice" is a third possible format that would be appropriate in situations where the learner would need to continually repeat already learned skills to increase their competency (Hoekema, 1983).

There is also a <u>variety of presentations</u> possible. A presenter/instructor is able to bring the "real world" to the presentation via the portable video camera (Hoekema, 1983).

Interactive video instruction can be applied wherever the need for comprehensive training exists-- from basic training to highly specialized and complex technical instruction.

Workers and service technicians in industrial
and manufacturing fields can be trained to
handle new products. Sales personnel can not
only be thoroughly familiarized with product
lines, but trained to improve their
presentations and sales techniques. New
employees can receive comprehensive and
individualized orientation concerning
employee benefits and company policies.

Government employees at all levels can
effectively pace themselves through
interactive training programs and
periodically refresh their understanding of
the fluctuation procedures and regulations in
federal, state, and municipal agencies. And
interactive video can be an invaluable
training asset in fields such as investment
and insurance counseling where presentation
strategies can be mastered (Panasonic Audio-
Video Systems Division, promotional
material).

Interactive video instruction requires more time
on the part of the program planner and producer and
more money in terms of hardware investment than most
other forms of training. It is a fact, however, that
when broken down into cost per hour of instruction,
interactive video training has proven much less
expensive than many traditional approaches (Hoekema,
1983, p. 7).

Interactive video technology has a bright future
as a tool for instructional developers and although
most IV programs are designed for individual users,
programs are being designed for large group

presentation where viewers make individual choices in a group situation, followed by discussion and evaluation.

In today's age of specialization and job re-training, there are great demands upon corporations and industry to find more efficient, cost-effective methods of training. Much of what is being done in interactive video is finding practical applications in the "world" of training--including business, industry and educational systems. With the availability and increased usage of electronic learning tools, interactive video is likely to fill an important role in meeting those needs.

Videoconferencing. Videoconferencing, essentially holding a meeting by television, is not always as preferred as meeting face to face but does make it possible to disseminate information quickly for a large audience if there is urgency getting information out or if you have no control over external forces getting in the way of meeting (Bernier, 1991).

Satellite videoconferencing requires an "uplink," or a dish-shaped antenna of ten meters or more that can transmit a signal up to a satellite at approximately 22,300 miles above the equator. These are generally located in rural areas. The signal is then amplified

and the frequency is modified so that incoming and outgoing signals do not interfere with each other. The signal is then retransmitted to earth via "down link" antennas that are similar but smaller than uplink antennas (Dobyns, 1982).

There are two types of networks generally used in conference centers for videoconferencing--dedicated and ad hoc. Dedicated networks provide downlinks and/or uplinks put in by the center to accommodate their own network of conference rooms which are accessible and available full-time. Ad hoc networks make temporary use of portable receiving antennas (Dobyns, 1982).

Special-event videoconferencing, as used in large conference centers or convention facilities, sets up a signal to be sent out from the main convention hall via satellite to various other sites. This will provide for an already big event to increase its audience dramatically and for little cost.

Bernier (1991) writes about a special-event videoconference that took place as a result of an international meeting being canceled by Bristol-Myers Squibb because of the Persian Gulf War. Instead of canceling this annual cardio-vascular conference with international experts and salespeople comparing

strategies in product planning, an eight country
videoconference was set up complete with two-way audio
and two-way video (not usually tried). He explained
that:

> A presenter in one location delivered a
> session, complete with elaborate computerized
> graphics generated by the New York production
> crew. The New York studio picked up images
> from cameras focused on audiences in Rome,
> Munich, Paris and London, and mixed them into
> the video sent out via satellite. The
> viewers in these four countries could then
> ask questions of the presenter, and the
> screen image could oscillate between the
> presenter, the questioner and audiences in
> other cities. The monitor also had the
> capability for a split-screen visual effect,
> if the New York-based producer chose to
> include several images on the screen at once.
> (p. 34)

What was remarkable about this event was that a
three-day program was compressed into a five-hour
transmission. Production costs, however, equalled that

of meeting in person but provided the added benefit of
having taped copies available to send out to employees.

Multi-Image Projection

> As defined by Heinich et al. (1982):
>
> multi-image refers to the use of two or more
> separate images, usually projected simultaneously
> in a presentation. . .multi-screen refers to the
> use of more than one screen in a single
> presentation. The two concepts usually go hand in
> hand, since the multiple images are often
> projected on adjacent multiple screens. (p. 169)

Multi-image productions require much planning and
audience analysis but are able to incorporate film
clips, overhead transparencies and slides to simulate
movement. A dramatic effect can also be created with
the use of a dissolve unit which can control the speed
of the image shown and keeps the screen from going
blank. Automatic programmers can control several
projectors and can be programmed to stop during certain
parts in a presentation. "Automatic programmers enable
motion pictures, filmstrips and slide projectors to be
operated together, separately, or in any combination
with synchronized sound from an audio tape" (Heinich et
al., 1982, pp. 171-172).

There are several applications for multi-image presentations. The presentation can be used to affect mood by combining visuals with appropriate music to create a desired effect. Relationships of visuals can be shown side by side which is effective in showing "before" and "after" shots. A wide-angle view can be shown on multiple screens that would be impossible to show on a single screen with the same effect (Heinich et al., 1982).

One of the most impressive uses of multi-imaging is a 42-projector show on an 8 x 24-foot panoramic screen that's being used to recreate the historic Battle of San Jancinto for visitors to the San Jancinto Museum of History. Other equipment included 24-track audio with quadrophonic sound, 14 Maestro dissolve units to run three projectors (to help avoid flickering images found in some shows), and a Concert Master control unit which automatically monitors, tests and controls the entire multi-image system (Teets, 1991).

Paintings for the presentation were photographed of battle scenes, but to make them come alive they selected a new hybrid technology called "Mo-Pic" in which motion picture film sequences are transferred to slides. With use of this technology, brief action

scenes can be displayed in short bursts of animation (Teets, 1991).

Many impressive multi-image presentations are being produced throughout all industries to create an emotional impact that will long be remembered by those who view these artistic creations. Not only do they capture the attention of their audiences, the message can seem "bigger than life."

Conference Center Innovations

Visions of conference centers are usually of a beautiful resort with fresh air and lots of recreational opportunities. This lure of a "vacation-like" atmosphere is likely to see many changes occurring with the current recession-based economic hard times and less company money provided for extravagant trips (O'Brien, 1991).

Ginny Scott, Vice President at the Chase Development Center (a non-residential conference facility in New York City), states that "coming out of a decade that saw so much frivolity and so much waste, it may be hard to justify a trip to a resort conference center" (O'Brien, 1991, p. 30). For this reason, the current trend in conferencing is to urban conference

centers that lend themselves to greater airport
accessibility and mass transportation.

The International Association of Conference
Centers (IACC) has reported a growth in conference
centers under construction, though many companies are
closing down or getting away from in-house training
centers due to expense to build and operate (McNulty,
1992). The cost involved in utilizing conference
centers usually pays off in the long run, as cited by
L. Lynnwood Aris, Executive Director for Educational
Testing Service at Chauncey Conference Center in
Princeton, New Jersey, "per day, companies may pay more
to meet at a conference center (versus those held at
other venues), but they can often accomplish more
faster and reduce their overall costs" (p. 18).

Innovative, new conference centers are opening
around the country that are designed for meetings only.
Some try to provide comfortable, campus-like
atmospheres to compete with their resort counterparts
and others are being set-up in the "heart" of the city
to offer attendees easy access to corporate offices and
transportation systems. These centers may or may not
provide simple lodging and if they do, there are not
the additional charges for accommodations often found

in hotels or resorts that are not set up specifically
for meetings. These extras often included use of a
fitness center, spa, or golf course that attendees
rarely have time to use. What they do include is a
more high-tech meeting environment equipped with
electronic presentation rooms that are intent on giving
presenters what they need in a "one-stop shop"
(O'Brien, 1991).

One example of this type of center would be the
Waterbury Conference Center located at the Sheraton New
Orleans Hotel which opened in April 1991. The center
offers a controlled meeting environment with all the
"extras" provided by the city itself. The philosophy
of this type of setup is to use what the city offers in
terms of entertainment, restaurants and special events.
In New Orleans, the center would help attendees make
arrangements to take riverboat cruises, provide
restaurant information, and advise what sites to see in
this culturally enriched city. At the Chase
Development Center in Manhattan, attendees would be
assisted in securing theater or opera tickets as well
as being provided information that would assist them in
the city during their stay (O'Brien, 1991).

Conference centers of this caliber appear to be a mainstay in this era of corporate down-sizing. Joseph Malley, second vice president at the Chase facility says:

> While in the short term, use of these facilities
> may be a result of the war and the recession, in
> the long term they are here to stay. A lot of
> companies got burned in the past few years, and
> you won't see the country ballooning back up after
> a few good years. They just can't afford it.
> (O'Brien, 1991, p. 30)

The new conference centers seem to be filling a void, creating a huge market for this type of meeting space. Before, if people wanted to meet in the city, their only choice was to go a hotel where they would need to deal with several different people to arrange sleeping accommodations, meals, meeting space and audio\visual equipment. At a conference center, concludes Dave Moran, director of sales training at Tiffany & Company in New York, "you need only deal with one conference coordinator, work with one package, and pay one bill" (O'Brien, 1991, p. 30).

Electronic presentation room. Centers that are designed specifically for meetings are now coming

equipped with state-of-the-art technology in the form of electronic presentation rooms that provide presenters with the whole gamut of audio/visual equipment capabilities. These rooms are setup to provide presenters ease of operation with equipment that is permanently installed to provide consistent clarity of visuals and optimal audio sound (J. Marchesani, personal communication, May 4, 1992).

Equipment setup in an electronic presentation room is most generally operated from a console where the presenter can control the production from one location. In a full-blown, high-tech operation, the following equipment would probably be found to produce video:

1. An overhead projector, or preferably, an overhead videocamera that is installed above the console to point down and to focus on a transparency, printed material, or view a demonstration.

2. A computer that can interconnect with other video/audio equipment (probably an IBM or MacIntosh).

3. A laserdisc player.

4. CD Rom.

5. Videotape player/recorder.

6. A black and white video switcher system used to cue up the camera and video before projection.

7. Slide projectors/dissolve unit capable for multi-image projection.

8. Motion picture projector (J. Marchesani, personal communication, May 4, 1992).

The audio console would provide the sources of sound to be operated by the presenter and would consist of: (a) a wireless microphone system, (b) an audio cassette player/recorder, and (c) a compact disc player. Also installed by the contractor would be a mixer and amplified speaker system including a processor and equalizer (J. Marchesani, personal communication, May 4, 1992).

When discussing room design, Marchesani (personal communication, May 4, 1992) states, "presentation rooms are more technical than most people think. Preparation time is required by the presenter to become familiar with the operation of the equipment and to cue up the production."

Initial setup costs for designing the electronic presentation room are expensive, and requires care and maintenance of the equipment. These rooms, however, would be valuable in attracting conference presenters

to a facility by making it possible for their
presentations to have that professional-look that is
both desired and effective.

CHAPTER 3

Summary and Conclusion

In the balance of this paper, the author has questioned the need for conference center media providers to re-evaluate the technology they are currently providing to presenters using their facility. To evaluate this need, media providers must look ahead and assess new technology and its implication for future use. The author has identified the traditional technologies that presenters have been using, how they have been technologically "modernized," and what emerging technologies and trends will play an important role in presentation formats in the future.

It appears to the author that change is occurring so rapidly there is little time to react or respond. There is a need to be careful with such accelerated progress in technology so the "message" is not lost with the "medium." Often technological growth in equipment comes well in advance of programs designed for it or "tailored" to it--this is particularly true with computer equipment where software usually lags behind the technology. Media providers need to beware of jumping on the bandwagon for a "fad" that may not pan out.

It is also evident that along with emerging trends
comes emerging costs. Media providers will need to
evaluate where they are at and what they are willing to
invest to improve their market share of the business.
Consideration will obviously need to be given to the
budget in terms of how long of a process updating the
technology will take (i.e., one, two or possibly a
five-year plan). Other considerations include training
staff to be more technologically proficient with new
equipment as opposed to just pulling down a screen,
setting an overhead projector on cart and plugging it
in.

The author believes that conference sites must be
willing to provide presenters with the "tools" of their
trade if they are planning to be competitive in the
meeting industry. Research indicates that more
companies are getting away from high-budget conferences
and are much more willing to spend their dollars in
"one-stop shops" that are hassle-free to coordinate and
provide state-of-the-art equipment to meet all of their
presentation needs.

It is the author's feeling, based on earlier
research, that conference centers must become
"computerized" to be prepared for what is up and coming

in technological advancements. Most of what is new in technology is directly connected to and controlled by the computer. Because of the inter-relationships between the computer and other pieces of presentational equipment, the author feels it is logical and practical for centers to design electronic presentation rooms that afford the presenter the convenience of producing and controlling the presentation from a console-type setup. Not only is this more efficient for the presenter, it provides an obstruction-free, professional looking setup.

Conference planners and media providers must also be aware of the implications of new technology and trends so that they may be better prepared for what may emerge in the future. Today's technology provides such "speed" of information that there is immediate access and inter-connectedness to the rest of the world. Computer technology allows a single presentation to be changed to meet the needs of a variety of groups by simply pressing a few keys to alter the program.

Future technology seems only to be limited by the imagination. While writing this paper, the author often thought about the possibility that someday technology could actually produce a "holodeck" as

created by the writers of "Star Trek: The Next Generation," a science-fiction television drama. The "holodeck" is based on holographic imaging controlled by a computer which is given verbal commands. Users of the "holodeck" can create any "reality" situation by walking into an empty room and instructing the computer to program whatever scenario is desired. One can only imagine what implications this would have for training in "reality" situations or being in places where it is physically impossible.

Presenters and media providers must both be concerned with how best to deliver "the message" in an efficient and effective manner. Since constant change in technology is inevitable, it is their responsibility to be aware of emerging trends and to ensure that modern communications technology is brought into their learning situations to better meet the needs of their clients.

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