DELIVERING MULTIMEDIA IN THE CLASSROOM

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A year ago, when the topic of multimedia came up, the primary question was, "What exactly is multimedia?" Now, after a year of new product announcements and ever-widening discussion of multimedia in the realms of academe, industry and the popular press, the questions have become more practical. One of the most common is, "How do you deliver multimedia in the classroom?"

The multimedia classroom combines computers with audio/video technologies. As is typical whenever technologies are integrated, the number of ways of controlling the combined system is greater than the sum of the separate controls for each technology. As the number of controls (switches, knobs, etc.) increases, so does the need for training or the presence of technical support during classroom instruction or presentations. With or without this additional assistance, it is critical that the integrated control system be simple to use. Without a high degree of usability, no system, regardless of its technical sophistication or elegance, will be accepted by a broad range of faculty and instructors.

Usability depends almost exclusively on the design of multimedia delivery and control systems. "Delivery system" refers to the complete wiring, audio/video and computer components required to present effectively a multimedia computer application in a classroom context. "Control System" refers to the switches and computer interfaces that allow a presenter to manipulate certain aspects of the delivery system.

It is important to keep in mind that the computer multimedia environment is as new to most audio/video vendors and technical support staff (who design and build delivery systems) as it is to the academic community. Instructors or other potential users of the delivery systems should take great care to effectively communicate their needs for interaction with the system, as well as what multimedia material will be used in a presentation. Addressing these needs beforehand can significantly change the design of a multimedia delivery system and save the user a lot of trouble.

Portability, flexibility, simplicity and cost are important factors in determining the correct configuration for delivery and control systems. A few guidelines for choosing the proper systems follow.

PORTABLE VS. FIXED DELIVERY SYSTEMS

Portable delivery systems can vary in size, depending on the number of devices the user wishes to incorporate. Small systems are easily moved between floors by elevators, or packed up on a rolling cart and moved to different classrooms or presentation halls. These smaller portable systems generally support common departmental applications and assume a standard computer configuration with few specialized peripherals.

A small portable multimedia delivery system would require the following components:

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- overhead projector ($250)
- LCD panel capable of displaying full-motion video adequately ($5,000)
- laserdisc player ($1,000)
- two powered speakers ($200 per pair)
- multimedia computer and monitor with CD-ROM, digital audio, full-motion video and software (Advanced Academic System 2.0 with Multimedia Options, $6,000)
- overhead projector screen ($100) or light-colored wall(preferably white)
- rolling cart ($200)

An optional component would be an audio mixer capable of mixing the audio sources used or generated in the multimedia environment down to one stereo output to be broadcast by the powered speakers. An appropriate audio mixer would cost approximately $300. Therefore, the total price for a portable system that uses an LCD panel would be approximately $13,050. In contrast, a typical fixed delivery system with equal flexibility would cost an additional $6,000 to $14,000 minimum, depending on the type and quality of the projector selected.

Larger portable systems often use older large-screen (35-inch diagonal) television technology for display purposes. They also may contain discipline-specific devices (camera-equipped microscopes, etc.) and audio/video equipment necessary to support the additional devices. For these systems, the term "portable" is somewhat a misnomer, as their excessive size and weight often demand great effort to move, and they must remain bound to a single floor or be partially disassembled to fit in an elevator for transport between floors.

In general, the more flexible your delivery system is, the more it will cost. Flexibility can be represented in the ease with which the system can be reconfigured and the number of computers and audio/video devices it can support concurrently.

PORTABLE VS. FIXED CONTROL SYSTEMS

Special control systems, such as those produced by AMX Corp., can make the complex, multimedia delivery environment much more friendly. AMX systems can control RS-232 devices (most education/industry laserdisc players), infrared-controlled devices (amplifiers, RGB projectors, VCRs, etc.) and room lighting. AMX systems are fixed systems primarily composed of a large, permanently installed equipment controller and a lunch box-sized, programmable control unit that has a touch-sensitive screen on which control options are displayed. With the AMX, the user can send commands to several components of the multimedia delivery system with a single touch.

Unfortunately, AMX systems are not only immobile, but quite expensive as well (~$10,000). Complex multimedia environments that necessitate the use of AMX-like systems are, however, the exception rather than the rule. More and more presenters are using transparent display panel technology with overhead projectors to make their multimedia presentations more portable. Control systems for these portable delivery systems are much simpler than those for AMX-like systems as they support fewer multimedia devices.

The planning that goes into purchasing these systems aids not only the user but the designer as well, and should be carefully thought out.

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The IAT publishes a number of documents that can assist you in planning and implementing your multimedia delivery system (see publications list on page 2.) AMX Corp. can be reached at (800) 222-0193.