REPORT OF THE VIDEO SUBCOMMITTEE OF THE CAMPUS-WIDE INFORMATION SERVICES COMMITTEE

Introduction

As a part of the University's planning process, the Video Subcommittee has the on-going responsibility for reviewing campus-wide video use and its support. The committee offers the following interim report based upon its diverse representation and knowledge base. Longer range plans include solicitation of current and future needs from the schools and other UAB entities. A catalog of the current UAB video environment has been provided in Appendix A for additional background information.

Short Term Video Needs At UAB

The committee recognizes there are immediate, as well as longer term needs for video on the campus. For planning purposes, we define short term needs and goals as those which will need to be addressed within the next 24 months. Before listing the needs and subsequent solutions, it is important to note that the committee does not believe the requirement for video on the campus in the next two years will require major investments in equipment/technology or strategies which are not in place today.

1. Shortage of Steerable Satellite Receive Dishes Connected to Campus Fiber

Currently, the satellite receive dish at the Medical Forum is the only steerable dish that is easily connected to the fiber optic system on campus. Conferences and training on a variety of topics are now delivered over satellite and are aggressively marketed to users at UAB. The requests for access to conference facilities with downlink capabilities is increasing. There has already been one scheduling conflict and with increasing volume, more are expected.

Recommendation:

In order to avoid scheduling conflicts with other uses of the fiber connection between UAB and the Medical Forum and conflicts with others using the Medical Forum satellite link, we recommend connecting another steerable dish at UAB to the fiber optic system. This will require the use of an existing or new dish and another set of fiber optic transmission and reception electronics. The cost is estimated to be in the range of $5,000 to $15,000. The higher end of the range includes the cost of a new satellite dish while the lower number represents the use of an existing dish.

2. Insufficient Built-In Large Screen Displays of Computer and Video Signals in Campus Classrooms and Auditoriums

Current demand for computer and video display in many classrooms and auditoriums can justify the installation of permanently mounted video/data projectors or LCD panels. Savings are realized in the cost of time and money spent renting or borrowing projectors, running temporary wires, aligning projectors, and learning to operate unfamiliar devices. Effectiveness is increased by appropriate size images and the reliability of built-in equipment.
Recommendation:

Review classrooms and auditoriums with building administrators for the purpose of encouraging the installation of video/data projection systems or LCD panels in heavily used classrooms and auditoriums. Projection systems are estimated to be in the range of $5,000 to $25,000 per room.

3. Extension of fiber to major conference room/classroom sites on campus

Because video on campus today is primarily one point connected to another point, use of the fiber optic cable capacity is a necessity in the short term. This requires video fiber to be installed near the end location. Most buildings on campus do not have video fiber delivered to the end location.

Recommendation:

Review of major conference room/classroom sites on campus with building administrators for the purpose of fiber installation where video conferencing may be desirable. The cost of fiber optic cable is estimated at $6,000 per floor.

4. Resources to support research for new/on-going video applications

There are a number of individuals operating in various departments across campus providing some form of video consulting today. The problem arises in that the individuals involved do not have this function as their primary mission. Therefore, users must wait until an individual has sufficient time to provide assistance. Users aren't necessarily satisfied with this arrangement, but do not complain because the service is free.

Recommendation:

We believe the need for in-house consultation services will continue to grow as the number and diversity of video applications at UAB increases. The consulting process should be examined to determine how these services should be financially supported. Based on the current model, at a minimum we should consider release time, or provide some incentive to those individuals who undertake this role in conjunction with other job duties.
5. UAB IITS room staffing needs/cost recovery

Currently, IITS rooms are staffed by students on an as-needed basis. Academic Affairs pays all costs associated with staffing the rooms. Other than a system-wide plan for after-hour business use, there is no cost recovery plan in place.

Recommendation:

The IITS would benefit from improved administrative structuring. In order to promote maximum usage and good customer service, the IITS room should be staffed weekdays from 8 a.m. - 5 p.m. as well as evenings and weekends as needed. A cost recovery plan should be implemented either through per hour or conference rates. Another possibility would be a subsidy plan with costs shared by Health Affairs and Academic Affairs.

6. Lack of awareness throughout campus of what is available and what is compatible with existing equipment on campus

Today, much time is spent directing users either to the correct party to discuss use of a satellite dish or other technology or to other information sources. Also, no direction or information has been provided to the UAB community on what standards or devices will communicate with existing equipment on campus today (such as IITS). Decisions to share existing codec/IITS video equipment rather than purchase new systems has placed a strain on the scheduling from the 15th street classroom site.

Recommendation:

A central body such as the video subcommittee could aid in keeping up-to-date information such as that presented in Appendix A of this report. The information could be provided on-line and updated bi-yearly as a committee responsibility. The committee should also make available current compressed video standards to ensure compatibility with existing equipment on campus. The issue of appropriately directing video users to the correct service provider/s should be further studied in context with the overall issue of addressing/marketing the availability of other services on campus.

The committee believes it is appropriate for requests of additional connections to the IITS at UAB be reviewed by the UAB IITS coordinator to ensure compatibility and cost effectiveness.
Long Term Direction for video at UAB

The committee defines long term direction to be in the two to five year time frame.

1. Switched high speed digital network to and from the office, classroom, libraries, external constituents

It is the belief of this committee that video will become just another form of data supported by a high bandwidth/speed campus network such as, ATM (Asynchronous Transfer Mode). With the ability to move/switch digital video around and off the campus, the majority of video transport needs can be met in this manner.

2. Upgrade to, or new installs of High Definition Television (HDTV) origination and playback equipment

The committee recommends that video equipment purchases take into consideration the upcoming implementation of the U.S. Grand Alliance HDTV Standards.

3. Funding for central video delivery

We believe that video should model its funding in the long term similar to the data network. Some central services shared by the majority of the users at UAB should be funded through a central funding mechanism. And, like the network, there will be specific video devices which should be supported by each department/school.

Conclusion

In the short term, the committee does not believe that the demand for video access throughout campus is sufficient to warrant investment in video switching equipment. The fiber optic plant is sufficient to handle the short term needs in a point to point method. As demand increases, particularly from the desktop, video data will not be differentiated from other data traversing our network. It is due to this belief that central transport/support in the form of connections and research should be fiscally provided through the network charging mechanism. We, further, endorse in-house consulting expertise with some reimbursement method for work/services performed. We propose to validate these findings with a follow-up survey within the University.
Appendix A

Current Video Environment on Campus

Video is widely used at UAB and many more applications are developing. The list below depicts the variety of video systems in use today with examples of representative applications on campus. Current video production and video consultation services are also described.

Self-contained Video Systems

1. Systems for viewing video signals generated by cameras or clinical and scientific instrumentation. Video is usually displayed on a nearby television monitor. For example:
   - Videomicroscopy and videoendoscopy for teaching, diagnosis, or surgery
   - Video doppler ultrasound for cardiology
   - Video copystands for enlargement of print or small objects
   - Video monitoring of patients or scientific processes

2. Systems for recording video signals for later viewing, analysis, or permanent storage. Recording devices include videotape recorders, still video recorders, video printers, videodisc and CD-ROM writers, and computer hard-drives.

3. Systems for playback of stored video images. Video signals from various playback devices are displayed on television monitors, or for larger groups, on rear screen projection units, LCD panels, or video projectors. For example:
   - Playback of videotapes, discs, or computer output in study carrels
   - Classroom display of video/computer teaching materials
Closed-Circuit Video Systems

1. Systems for distributing video signals from a central location to many locations, usually within a building. For example:

   - The University Hospital television system for distribution of entertainment, patient education, and training programs to television sets throughout the hospital

   - Distribution systems in the School of Nursing, the Dental School building, and Volker Hall for sending video signals to classrooms from a central location

2. Systems for viewing or recording signals from many locations at a central location, usually within a building. For example:

   - Security monitoring systems for parking decks and doors

   - Observation and recording of patient exam rooms in the Family Practice Center for teaching purposes

Point-to-point Video Between Buildings

1. One-way transmission of analog video signals (not digital) via fiber optic cable from one site to another. The fiber optic path is established and the video transmitter and receiver are installed for each event. For example:

   - Sending a satellite downlink signal from the receiving dish at the Medical Forum via fiber optic cable to the Rust building where it is patched to an auditorium in the Center for Psychiatric Medicine

2. Two-way transmission and reception of analog video signal from one site to another. For example:

   - Connecting a cardiology catheter lab with teaching auditorium via two-way fiber optic cables. The audience views a physician and procedure being demonstrated, and the physician in the lab views the audience. Full audio and video interaction is possible, as well as the display of high resolution fluoroscopic images.

Video Communication over Telephone and Data circuits
1. Dedicated, multi-site, compressed video teleconferencing systems using partial T-1 (a circuit with a maximum bandwidth of 1.544 mb) for distance education or meetings. For example:

   - The University of Alabama System Intercampus Interactive Telecommunication System (IITS) has sites on each campus and around the state of Alabama

2. Desktop videoconferencing and downloading of video images via the Internet and around campus

3. High-bandwidth digital video over high-speed data networks. For example:

   - The UAB and BellSouth project using an ATM network to transmit high-resolution pathology images around and off campus

Reception of Commercial Television Broadcasts on Campus

1. Reception of off-the-air local broadcasts via television sets with antenna

2. Reception of Birmingham Cable in selected buildings and rooms on campus

3. Reception of cable channels via antenna from a cable system using wireless technology; this system is not yet operational but, is being developed by Arden Communications in conjunction with UAB.

Satellite Origination and Reception

1. Capability of originating satellite feeds from UAB via the fiber optic cable connected to the Medical Forum then, by microwave to the Channel 6 teleport; both C-Band and KuBand transmitting dishes are available.

2. Capability of originating satellite feeds via a rented Ku-Band uplink truck on campus or via fiber optic link connected to a truck located at the Medical Forum

3. Capability of receiving satellite signals via several permanently installed dishes at UAB, or via a portable unit rented for a specific event; some receive dishes on campus are steerable to lock onto any satellite while others are permanently fixed to receive signals from a single satellite.

Video Production Facilities on Campus
1. Medical Television offers a range of broadcast-quality production services for the UAB community. The department specializes in providing field-based production services. Services are provided on a fee-for-service basis and the department is currently moving toward a full cost recovery model. For example:

- Video production for instructional and professional presentations, demonstration of technical procedures, research analysis, patient education, staff training, recruitment, continuing education, public service announcements, news releases, and public information

- Video teleconferencing origination and reception with signal transmission via satellite, compressed video lines, and fiber optics

- Staging of two-way interactive live demonstrations from operating rooms or other restricted environments to remote audiences

- Video documentation, videomicroscopy, and videodisc production

- Duplication of video and audio tapes to various formats including conversion of videotapes to other international video standards

2. Dental Television provides television services primarily to the School of Dentistry. Dental Television specializes in studio-based production services which are free to the School of Dentistry and on a fee-for-service basis to other UAB departments. For example:

- Services include live studio feeds of dental techniques to classrooms

- Studio-based videotaping, editing, tape duplication

- Satellite reception via downlink located on the top of the School of Dentistry Building

3. The Department of Communication Studies operates a production facility with particular emphasis on undergraduate television instruction. They provide occasional support to other UAB departments on a fee-for-service basis, as well. For example:

- Production of student recruitment and health and safety tapes

Video Consulting Support on Campus

1. Health Information Systems receives a number of requests for assistance with researching various clinical video projects. This group is currently uncompensated for time spent researching video projects. For example:
-Assisting the Heart Station in evaluating computer software and hardware that can provide access to video images previously collected and stored on video tape in VHS format

-Evaluation of the feasibility of integrating video images into a patient medical record accessible to computer workstations connected to the Hospital network

-Connection of EEG instruments in the intensive care units to the network to allow viewing of real-time images from remote locations internal and external to the Hospital network

-Provide mechanisms for Catheter Laboratory equipment to digitize video images and transmit over the network.

2. Medical Television receives requests for a variety of consulting services. Many of the consulting projects are provided without compensation. For example:

-Consultation on teleconferencing, telemedicine, audiovisual and video system design, classroom and auditorium design, and equipment specification and purchase

3. University Communication Services receives a number of requests for assistance in the transport of video signals around campus and to off campus sites. Consultation services are uncompensated, however, if actual work is performed, such as wiring, this is reimbursed to the department. For example:

-There are a number of calls for assistance in locating a meeting room with access to a satellite dish for the purposes of receiving a video conference

-Technical assistance is provided for the IITS system in the form of all circuits connected to the bridge located at UAB and the maintenance of those circuits. Research support is provided for the additions of new technology or changes to the IITS. All dial out lines/circuits on the system are provided through UAB Communications. Technical advice is provided for the UAB campus regarding this system/technology.

-Assistance is provided for all point to point video connections requiring use of the fiber optic cable.

4. Intercampus Interactive Telecommunication System consulting support is provided additionally by UAB Special Studies and the IITS technical coordinator who resides on the UAB campus. For example:

-UAB Special Studies receives requests from users across campus and off campus for use of the IITS rooms.

-Requests to UAB Special Studies from faculty in the form of development of credit and non-credit courses over the IITS and general use of the technology

-Requests to UAB Special Studies from users off campus for the purpose of delivering in-house courses/training over the IITS technology
-IITS technical coordinator provides additional technical assistance for UAB campus departments regarding IITS technology

5. Communication Studies and Dental Television receive requests for assistance with satellite transmissions. There are other departments on campus, such as Biomedical/Clinical Engineering, that also receive a variety of requests for video assistance.