CALIFORNIA COMMUNITY COLLEGES

TIPS News

Technology in Education

TELECOMMUNICATIONS INFRASTRUCTURE PROJECT STATEWIDE

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Telecommunications Technology Infrastructure Program Certification

$28 million available for 1998-1999

Charles Mawson
Telecommunications Analyst, CCCCO

The 1998-99 State Budget Act contains $28 million for expenditure on the Telecommunications Technology Infrastructure Program (TTIP).

The Budget Act provides that $21,600,000 will be allocated to colleges for the following purposes: (1) data and video network services provided by the California State University and California Community Colleges Network (4CNet), including the acquisition and installation of equipment, lease of communication lines, software, and other costs associated with connecting to the network, such as videoconferencing connectivity, transport, and maintenance (Note: Funds were allocated to the districts as part of their August 1998 Advance General Apportionment for the data portion of 4CNet services.); (2) local planning and development for improving library technology, including library automation, library connections to college local area networks library technology plans and connections to external databases; (3) digital and analog satellite systems and components not funded in fiscal year 1997-98; (4) technology training for faculty and staff; and the following optional areas: (5) the development and expansion of local area networks

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4CNet Backbone Upgrade: Status Report

Edwin W. Smith
4CNet Project Manager

A significant enhancement to the 4CNet backbone has been planned and is in the early stages of implementation. 4CNet's backbone upgrade will substantially increase the overall reliability of the network and accommodate anticipated bandwidth growth.

In addition to the backbone circuit upgrades and the backbone node changes outlined below, 4CNet has also greatly enhanced the network's monitoring capabilities with the recent implementation of Cabletron's Spectrum network management software. This system will allow 4CNet's Network Operations Center and Customer Support Services staff to assume a more proactive network management role than it has in the past.

Moreover, 4CNet will implement Remedy's popular Action Request System for trouble ticket management and enhanced Customer Support Services capabilities.

As a move to significantly increase 4CNet's network reliability and

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TIPS online *http://video.4c.net/TIPS*

COMMENTARY

Down in the Trenches

Bob Walczak
Executive Director, Computer Using Educators

Benjamin Franklin said it best, "Tell me and I forget; teach me and I remember; involve me and I learn." Staff development is really about this simple phrase. I cannot help but wonder what a creative thinker like Franklin would make of all this technology. My hunch is he would be right there in front leading the charge!

Hands-On Requirement

One organization that recognized right from its birth that direct involvement, let us call it "hands-on involvement," would be critical in getting teachers to understand the relationship between computers and curriculum, is Computer Using Educators (CUE is a nonprofit corporation and the country's largest teacher organization dedicated to working with technology in the classroom). I came away from my first CUE conference (I worked for IBM in those days) in 1987 extraordinarily impressed with the hands-on requirement. This hands-on requirement drove vendors to offer labs to do professional development work in educational technology.

Setting up labs with 30 or 40 machines for two or three-day workshops was accepted as part of doing business in the schools. Numerous teachers have told me the labs were their first encounter with computers; and as a result, they were hooked. I took that hands-on requirement very seriously indeed and convinced IBM to follow the CUE lead.

> *"…hands-on involvement would be critical in getting teachers to understand the relationship between computers and curriculum."*

Surfing the Technology Tsunami

In my view, acceptance of local area networks replacing stand-alone machines in classrooms created classroom computing. This took machines from devices for specialists to networked machines easily accessible to all, even kindergarten kids, by the simple expedient of sharing information. Those pesky disks that turned the teacher into a disk manager now magically resided on a file server to be distributed by the teacher and accessed by the kids via the network. (Can any of us remember the reluctance to install networks?)

With networks came a wave of ever more sophisticated systems, curriculum and administrative software and productivity tools running over what soon became wide area networks. then came the Internet, all in the space of ten years. The remarkable fact is we were all here to see this revolution because that is really what it was.

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Chancellor's Office Video Bridge Operational

The Chancellor's Office video bridge donated to the California Community College system by PictureTel along with free operational support for two years is now operational. The bridge is located in the San Francisco office of PictureTel, and is available for community college use 7 days a week, 24 hours a day. Though use of the bridge is free, colleges must pay for any transport charges from their video system to San Francisco (estimated to be approximately $50 per hour).

Multipoint videoconferences are currently limited to seven sites on any given call. The Chancellor's Office is monitoring usage to determine if the bridge capacity needs to be expanded. Bridge reservation request forms and instructions for filling them out can be found at http://www.cccco.edu/ESED/.

As part of activating the Chancellor's Office video bridge, PictureTel is asking colleges to participate in a certification process. The process consists in filling out a video room information form and making a test call to PictureTel. Room information forms and instructions for filling them out can also be found at http://www.cccco.edu/ESED/.

New Satellite Town Meeting Season

The 1998-99 Satellite Town Meeting (STM) series will be broadcast live from the Newseum (*www.newseum.org)*, the nation's only interactive museum of news. Join a nationwide audience every month to learn about successful school-community partnerships. Programs will be broadcast on the third Tuesday of each month, from 8:00 - 9:00 p.m. Eastern Standard Time.

1998-99 Satellite Town Meeting Schedule:

- **December** -- No Satellite Town Meeting
- **January 19**, *Learning Together: Diverse Schools Building One America*
- **February 16**, *Teaching Reading: Success Stories from School & Home*
- **March 16**, *Counting the Stars: Math, Arts & Space Science*
- **April 20**, *Improving Teacher Quality: Shaping the Profession That Shapes America's Future*
- **May 18**, *High Standards at Work: Comprehensive Approaches to School Improvement*
- **June 15**, *School Leadership: Principals at the Center*

STM-LIST

To receive the most up-to-date information, including satellite coordinates, about satellite teleconferences produced by the U.S. Department of Education, join STM-LIST, a new e-mail information service.

STM-LIST will send users program descriptions, satellite coordinates, registration information, and other information as it becomes available. STM-LIST is for the dissemination of information only. Users can expect to receive at least two, but not more than five messages per month from STM-LIST.

Anyone interested in learning about the latest issues in education, as well as anyone responsible for coordinating satellite downlink sites, should subscribe to STM-LIST. Educators, parents, community leaders, and others will want to subscribe to STM-LIST to learn about upcoming teleconferences that might help their local community efforts.

The Satellite Town Meetings and other teleconferences are opportunities to gather key people in the community to discuss and learn more about important education challenges.

Cable access stations, library media specialists, and others who operate satellite dishes will also want to subscribe to get the latest satellite coordinates and any technical information, including last-minute panic phone numbers.

To subscribe to STM-LIST, address an e-mail message to: *listproc@inet.ed.gov* . Leave the subject line blank.

In the message, write: subscribe STM-LIST *first name last name*

The Satellite Town Meeting series is produced in partnership with the National Alliance of Business & the U.S. Chamber of Commerce with support from The Bayer Foundation & the Proctor & Gamble Fund. Broadcast & cable partners include Discovery Communications, the Public Broadcasting Service, NASA & Channel One. Use of the Satellite Town Meeting is free & unrestricted.

If you have any questions, email Satellite_Town_Meeting@ed.gov or call 1-800-USA-LEARN. Visit our web page at: *http://www.ed.gov/inits/stm*

TIPS on Videoconferencing

Effective Meetings Using Videoconferencing

Mary Schrader Lasica
Education Advocate, Pacific Bell

Using videoconferencing for meetings can be as simple as one person calling another. Videoconference meetings can decrease travel requirements, offer scheduling flexibility, and allow for more work time as a result. However, a meeting with many participants and a set agenda will require some planning to insure that it is successful.

The information presented here is a guide to the planning process, including the details that need to be considered prior to the meeting, tips for a successful videoconferencing meeting, and how to evaluate the meeting. (Future articles in *TIPS* will address additional issues for successful meetings using videoconferencing.)

Some assumptions must be made: a needs assessment for the meeting has been completed, and it has been determined that videoconferencing is the best medium to use; parties at two separate sites each want the ability to see and hear the other site to discuss information and to reach consensus on certain issues; and each site involved has videoconferencing equipment that allows the participants to achieve the goals set for your meeting.

Most new videoconferencing users will be starting with a point-to-point videoconference, which allows just two sites to connect to each other. The technology is available for more than one site to connect, but multipoint conferences add a level of complication to the technology and to the communication between participants.

Multi-point conferences will be discussed in a future article in this newsletter. For more information about multi-point conferences, consult Pacific Bell's Knowledge Network Explorer / Videoconferencing for Learning at *http://www.kn.pacbell.com/wired/vidconf/multipoint.html* .

Planning

PLANNING

At most campuses, there are people who use the videoconferencing system and people who support that system. All of these people need to be involved in the planning, implementation, and evaluation of the meeting. Here are some questions to ask during the planning process:

✓ Location and Facilities

- Who is arranging to use the videoconference system?
- Is there a process for reserving the system?
- Does the room which houses the videoconference equipment need to be reserved separately?
- Approximately how many participants will be attending the meeting at each location?
- Does the arrangement of the rooms at each location meet any special needs?
- Can the rooms be rearranged to allow for maximum interaction of participants (will they be able to see, hear, be seen, and be heard)?
- Will technical assistance be available at each location on the day of the meeting?
- Will a document camera and a networked computer be attached to the videoconference equipment?

✓ Agenda and Materials

- Who will plan the agenda?
- What materials need to be distributed during the meeting?
- When and how will they be distributed?
- Who will facilitate the meeting?
- Will the agenda be distributed prior to the meeting, along with expectations for the meeting?
- Who is entrusted with this distribution?

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✓ Technical and Videoconference Support

- Who will place the test call?
- When will that call be placed? (At first, one test call should be placed within two weeks of the initial planning session, to test the systems. Plan another test call the day before the meeting to test for sound and camera angles.)
- Which protocols will be used? (This is more important when planning a multi-point. However, if the videoconference involves just two people at each site, system support might recommend a call using less bandwidth to save long distance and other charges.)
- Is there a technical backup plan? (In case the call cannot be placed, is there a conference phone available in the room so that an audio-only conference may take place.
- Will a public address system need to be tied to the speaker so all participants may speak and hear.)

✓ Administrative

- Who will place the call the day of the videoconference? (The location placing the call is billed for all usage including long-distance charges.)
- Who will decide on the evaluation format and facilitate the process of evaluation?

Implementation

IMPLEMENTATION

✓ Place a test call on the day before the video-conference. Check audio, video, lighting, and auxiliary equipment such as the document camera, computer, or any auxiliary microphones. Preview camera angles to make sure as many participants as possible are within the range of the camera.

✓ On the meeting day, one location should call the other approximately thirty minutes prior to the meeting. This time allows for any technical issues to be addressed and helps participants to get used to the technology before the meeting begins. Have telephone numbers available for the videoconference units and the technical support at each campus.

✓ Begin the meeting by introducing the facilitators or panel or all participants. Share the agenda. Also, introduce the technology in the first 15 minutes of the meeting. Meeting participants should all know the location of the camera, the range of camera view, where the microphone is, and any special protocols for communicating during the meeting.

For example, one of the meeting's sites is in a large room, and there is only one microphone; the facilitator at the site should repeat the question before answering or asking for a response. If a smaller number of participants are present, the participant should be sure the camera is focused on him/her before asking the question. The participant can say I'd like to ask a question" and wait for the camera to move.

- Conduct the meeting.
- Evaluate the meeting (oral or written format).
- Wrap-up the meeting (take final questions and set the next meeting).
- Review action items, if any.
- Hang-up the call.

Evaluation

EVALUATION

✓ This is a very important step for using videoconferencing for effective meetings. If no evaluation is done, the technology and the process of communication will not be adapted to better meet the needs of the participants.

- Process the information from the evaluation and synthesize for distribution.
- Distribute the evaluation report to interested participants, planners, departments supporting videoconferencing, staff development offices, and the California Community College Chancellor's Office.
- Meet with the planners and technical support personnel to debrief after the evaluation information is distributed. Address the issues identified in evaluation. Plan how you might incorporate solutions into future videoconferences.

Videoconferencing is a useful tool that allows effective communication over great distances. Corporations have been using videoconferencing for years to reduce expenses and wear-and-tear on employees. This tool is now available to community college personnel across the state of California.

Next month's feature will cover multi-point videoconferencing, from both a technical and communications perspective. If you have ideas involving other issues in videoconferencing, contact:

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Down in the Trenches

(continued from page 2)

Organizations around the country caught the Internet wave. Florida has its annual technology conference drawing 13,000 attendees. Remarkable. Even more remarkable is that their conference coincides with a statewide staff development day so teachers have a day to come to the conference. Michigan has a major conference every spring; Texas is another major player in staff development for technology teachers.

The Basics We Go Back To

Meaningful computer training means hands-on work. I still find it hard to believe teachers would come to workshops and refuse to touch the computers even though it was expected that participants actually use the hardware. (I still see vestiges of technophobia, though not as acute as it once was.)

Today conferences promote hands-on through workshop presentions. No vendor would presume to sell software without giving the potential customer a chance to test drive it. Vendors, county offices, and school districts are among organizations that offer staff development opportunities with hands-on, now the accepted model. In fact, we may have settled into a rather comfortable and accepted training paradigm. But hold on a minute.

A Changing Paradigm

Have we thought seriously about how technological solutions might affect staff development? I suggest many have not. And further, I suggest local, state, and even national educational organizations have not thought about this changing paradigm.

"We will need the equivalent of 100 new schools by the year 2000." "We will need to build a new classroom a day every day for the foreseeable future."

Statements like this assume that education will continue to be offered by the Industrial Age factory method. My view is that simply it is not the way it is going to be.

Learning and Teaching in 2000+

Forces already in-play are changing the paradigm, not only in the classroom but also in teacher preparation. Teaching and learning will not be confined to:

- a single place
- a single time
- a single person
- paper-based information
- memorization
- linear learning
- the intellectual elite
- childhood
- controlling learners

This is pretty strong stuff. Even a moment of thought will illuminate all of these factors and are present to a lesser or greater degree right now. Look at schools, look at the private sector, and for that matter, look at our personal lives and examples will abound.

Be Prepared

Administrators, teachers, parents and kids are all going to participate in this changing paradigm. Administrators will need to think about strategic plans to train not only teachers but everyone else who requires training in the district or site. Not only that, administrators and teachers will be learners in this environment. And remember, training online may be demonstrably cheaper than other methods. The consequence of doing business as usual may be an expensive one. The same is true for teachers and parents; all will be both a teacher and a learner in this new paradigm.

As for the kids, well, with their usual unbounded energy, curiosity and enthusiasm, they will thrive. They will simply accept that this is the way it is. What does it all mean? Is this good? Bad? Or simply outrageous speculation?

We simply do not know. I will call your attention to your wristwatch. Is it digital? The Swiss watch industry was damaged badly because it refused to accept the new digital paradigm. Will our educational systems be similarly damaged by not accepting the new paradigm? Perhaps. Then again, perhaps not.

Your obligation is to think about it and take action.

F. Robert Walczak serves as executive director for Computer Using Educators (CUE), the country's largest teacher organization supporting the use of educational technology and has been involved in education technology for 28 years. CUE is based in Alameda, California. His e-mail address is *bobwalczak@cue.org*

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4CNet Backbone Upgrade

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redundancy, most of the backbone node equipment currently located on CSU campuses will be moved into Qwest Points-of-Presence (PoPs) where space is available. 4CNet will be moving and co-locating network backbone equipment in seven Qwest PoPs: Anaheim, Fresno, Salinas, Santa Clara, Chico, Stockton, and San Diego. Where Qwest is currently unable to provide co-location, equipment will remain on CSU campuses in Bakersfield, San Luis Obispo, and Sacramento. Current backbone upgrade plans call for Qwest to provide long-haul 155Mb (OC-3) and 622 Mb (OC-12) circuits and for Pacific Bell to provide local loops. Minor design changes may be possible if additional Qwest POPs or secondary MPOEs become available during the initial phases of the planned upgrades.

As an added move to increase the reliability of the network, the configuration of the ATM switches at the backbone node sites will change from their present single switch configuration to a two or three fabric Fore ASX-1000 ATM switch. Separate power supplies plugged into separate circuit breakers and software upgrades are part of the equipment upgrade. Hot backup routers will be installed at each node as well, which will eliminate what has been a potential single point of failure at each of the node sites.

The overall design of the backbone upgrade will also allow the network to provide connectivity to several pending Internet2 and vBNS projects.

The affected T-1 circuits for CCC campuses and district hubs will be relocated from their existing CSU campus connection to the 4CNet/Qwest co-located backbone nodes as these sites become ready.

The timeline above reflects 4CNet's current plans but is subject to revision based on circuit availability and final installation dates from Qwest and PacBell.

Progress of the backbone upgrade is available at http://www.4c.net/backbone-upgrade, and will be kept updated for the convenience of all 4CNet subscribers. This page is also accessible via a link at the main 4CNet home page (*www.csu.net*). Community college subscribers are encouraged to visit this web site to access a wealth of information, including links to test connectivity and bandwidth utilization of 4CNet router.

TTIP Certification

(continued from page 1)

both within and between buildings; (6) development of district-wide area networks for interconnecting multiple campuses and off-campus centers within the district; and (7) implementation of local technology applications that are intended to improve student learning and other services.

Districts must certify that they will spend their funds allocation in accordance with the program guidelines. These funds are not allocated to supplant existing funds used for telecommunications, but are intended to expand existing capability and infrastructure beyond a site's current level. The certification is required as a condition for the receipt and expenditure of the state-allocated funds. Funds were allocated to the districts as part of their August 1998 Advanced General Apportionment for the data portion of 4CNet services. Ninety percent of the balance of the TTIP funds will be allocated as part of the First Principal Apportionment period, February 1, 1999. The remaining 10 percent will be allocated in the second principal apportionment period, June 30, 1999.

Any questions regarding the 1998-99 TTIP Certification process should be directed to Lindy Williams at 916-322-9048 or *lwilliam@cc1.ccccco.edu*

4CNet Backbone Installation Schedule

December 1998	Build San Francisco area OC-48 SONET ring. Begin OC-3 build-out
January 1999	Build Los Angeles and San Diego areas OC-48 SONET rings. Continue OC-3 build-out
February 1999	Move CCC subscribers in LATA 1 to Qwest Salinas and Oakland. Continue OC-3 build-out
March 1999	Continue OC-3 build-out. Move CCC subscribers in LATA 5 to Qwest Anaheim
April 1999	Move CCC subscribers in LATA 6 to Qwest San Diego
May 1999	Move CCC subscribers to Qwest Fresno and Stockton
July to December 1999	Complete OC-3 build-out
February 2000	Begin OC-12 build-out
April 2002	Complete OC-12 build-out of network

Barnes & Noble to Provide Textbooks to CVU Online Students

Rich Halberg
California Virtual University Design Team

The California Virtual University (CVU) recently announced an innovative agreement with Barnes & Noble College Bookstores, Inc. to make available textbooks and instructional materials to students who enroll in courses found in the CVU catalog (*www.california.edu*).

"The California Virtual University uses the Internet to give students in California and all over the world access to high quality instruction from accredited campuses," said Dr. Stanley Chodorow, chief executive officer of the CVU. "Through this agreement with Barnes and Noble, we're enabling students studying at a distance to access high quality instructional materials as well."

The CVU, which has been called "a study in success" by the San Francisco Examiner, integrates into one Internet-based catalog the online and technology-mediated courses and programs of California's accredited colleges and universities. More than 1,700 courses and 100 complete degree and certificate programs are accessible through the CVU catalog. As many as 25,000 students are pursuing their education online in courses offered by accredited California institutions such as Stanford, UCLA, the University of Southern California, and UC Berkeley. In total, 102 accredited California colleges and universities link courses and programs to the CVU catalog.

"We appreciate this opportunity to work with the California Virtual University, one of the most exciting, innovative and successful university programs in the country," said Max Roberts, president of Barnes & Noble College Bookstores. "As the leader in the college bookstore industry, we will continue to use technology combined with superb customer service to serve this unique college community."

Barnes & Noble College Bookstores, Inc., aprivately-held sister company to Barnes & Noble, Inc., operates college bookstores at more than 350 institutions of higher education. In California, the company serves such schools as the University of Redlands, University of California at the Berkeley Law School, Santa Clara University, the College of Marin, and the California State University at Los Angeles, Bakersfield, Monterey Bay, and Stanislaus.

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