A Message From the Chancellor's Office

Lebaron Woodyard, Dean of Technology and Communications, CCCCO

The California Community Colleges Chancellor's Office proposed funding for the 1996-1997 fiscal year for pilot applications to study the feasibility of deploying value added applications in three key application areas: instruction, administration, and student services. A list of 18 projects emerged that were subsequently prioritized by participants at an October 1995 review conference.

One of the guiding principles in the ultimate selection was that all projects be integrally connected to yield the best combined result in advancing baseline inter-related applications in instruction, student services, and administrative services. In addition, these projects selected were those deemed most immediately applicable to support the teaching and learning process.

Criteria for Application Pilots

• Must identify service delivery area of either instruction, students, or administrative services

• Must show potential significant impact on the telecommunications infrastructure

• Development as a pilot must help to establish a key anchor in the telecommunications infrastructure by building on a widespread community of interest

• Must gather/collect data and information as a key objective and activity

*This is **Part Three** in a three-part series on the expansion of the California Community Colleges Telecommunications and Technology Infrastructure Program.*

• Collected data and information that must drive the decision-making process to continue

• Must test the feasibility and impact of a telecommunication application on a statewide network

• Must have a synergy with other application pilot projects to produce an overall greater impact than if they were not interrelated; a bigger than

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Distance Education at a Glance

Dr. Barry Willis, University of Idaho

Within a context of rapid technological change and shifting market conditions, the American education system is challenged to provide increased educational opportunities without increased budgets. Many educational institutions are answering this challenge by developing distance education programs.

At its most basic level, distance education takes place when a teacher

Reprinted from "Distance Education at a Glance," a series of guides prepared by Engineering Outreach at the University of Idaho. Material does not necessarily reflect the position of the CCCCO.

and student(s) are separated by physical distance, and technology (i.e., voice, video, data, and print), often in concert with face-to-face communication, is used to bridge the instructional gap. These kind of programs can provide adults with a second chance at a college education, reach those disadvantaged by limited time, distance,

C O M M E N T A R Y

Teamwork Key to 4CNet Project's Success

Edwin W. Smith, Project Manager, Spectrum Telecom Systems

To paraphrase what others have said before me, large scale efforts don't just happen, especially successful ones. Rather, such successful efforts are the by-product of careful planning and teamwork. Trite as that may sound (and perhaps somewhat self-serving given my role as the 4CNet Logistics Manager) the addition of 125 California Community College (CCC) sites to the existing CSUnet could not have just happened without careful planning and exceptional teamwork.

Historically, CSUnet was the network that served the 23 California State University (CSU) campuses, along with some K-12 schools and districts, County Offices of Education, and other public entities. CSUnet, with the addition of 71 California Community College districts, is now known as 4CNet (http://www.4c.net). The network will serve approximately 1,800,000 post-secondary students, plus faculty and staff for both institutions throughout the state. The CCC addition to the network as a project began in November 1996. The actual installation schedule commenced on April 1, 1997 and was completed in December 1997. This aggressive installation schedule required the exceptional teamwork among numerous players.

The implementation of 4CNet was accomplished by members of the Telecommunications Infrastructure Support Services (TISS) in the Information Resources & Technology (IRT) department of the CSU Chancellor's Office in Los Alamitos. Project management was provided by Spectrum Telecom Systems, with additional support functions from the office of the Dean of Technology & Communications in the CCC Chancellor's Office.

The project teams in the CSU Chancellor's Office responsible for the implementation of 4CNet included the Network Planning & Development Team, Project Management Team, Customer Services Support Team, Engineering & Configuration Management Team, and Network Facilities & Services Team.

This project could also not have progressed as scheduled without the efforts and ongoing cooperation from both administrators and technical folks at the new subscribing Community College campuses and District offices, and the staff at the CSU Routing Hubs and Backbone Nodes of CSU Chico, Sacramento, Stanislaus, San Francisco, Hayward, Monterey Bay, Fresno, Bakersfield, San Luis Obispo, Fullerton, San Marcos, and San Diego.

Of course, this brief overview of the project teams doesn't begin to address the considerable detail, processes, procedures, and frustrations we had to contend with, not to mention various activities and events beyond our control or sphere of influence. However, all of that seems unimportant now that the relatively small staffs from two of the largest institutions of higher education built one of the largest IP networks in the country. Congratulations to all involved for a job well done!

Visit the TIPS web site at:
http://video.4c.net/TIPS

Technology Updates From the Chancellor's Office

Charles Mawson, Analyst, Telecommunications, CCCCO

Satellite Update

On December 3, 1997 the California Community College (CCC) satellite sub-committee met via audio conference to discuss future satellite standards for the CCC system. The latest recommendations from the consultant firm (Skjei Telecom, Inc.) hired by the California State University Satellite Network (CSUSAT) were evaluated, and the committee decided that in addition to affirming their prior recommendation that colleges should purchase satellite equipment compatible with the MPEG-2 standards having our satellite system compatible with future CSUSAT standards was in the CCC system's best interest.

CSUSAT will release an RFP to vendors in January 1998, with an anticipated review, evaluate bids and award contract in February. CSUSAT hopes to have their satellite uplink operational by June. The CCC satellite sub-committee is recommending to Chancellor Nussbaum that the Chancellor's Office enter into a memorandum of understanding with CSU to purchase satellite equipment under their RFP so as to obtain favorable prices for our colleges. A similar mechanism enabled us to obtain very favorable prices to purchase video equipment for the colleges last year.

Video Update

There are now over 120 PictureTel video conference systems ordered and approximately 60 actually installed. All remaining systems will be installed by the end of January.

A 16 port video bridge will also be installed in PictureTel's San Francisco headquarters by the end of January. Initially the port will be configured into two eight port bridges. As experience is gained with bridge utilization, the bridge configuration will change as needed. Information on scheduling bridge time will be distributed as soon as the bridge is installed.

There have been requests for recommendations on how to use the $24,500, 1997-98 monies from the Chancellor's Office allocated to video conferencing. The California Community Colleges Chancellor's Office has started discussions with PacBell and PictureTel to see if group purchases can be made for additional video units, document readers, and scan converters to save the colleges money.

Please send your comments or experiences via e-mail to Charles Mawson (cmawson@cc1.cccco.edu), at the Chancellor's Office.

Institute for Distance Education Managers in California

The Western Cooperative for Educational Telecommunications is pleased to announce that it will sponsor a three-day Institute for the Management of Distance Education (MDE) in Pomona, California, March 18-20, at the Kellogg West Conference Center.

The Institute is designed for community college and university personnel who have recently assumed leadership responsibilities for distance education and for people with an interest in general issues related to distance education.

The Institute curriculum will examine major topics essential to successful distance education programs. These include strategic planning, intellectual property rights, student support services, financial management, faculty development and policies, evaluation and assessment, technology selection, and building successful partnerships.

Institute sessions will focus on helping participants resolve major issues in their organization related to effective distance education. Participants will be asked to share major issues in their organization as well as success stories of what works. The Institute structure and environment is highly participative and built around dialogue and discussions with peers and faculty. The program agenda is intentionally flexible to accommodate and respond to the learning needs of participants.

REGISTRATION   INFORMATION

Begins: 9:00 a.m., Wednesday, March 18
Concludes: 2:00 p.m., Friday, March 20
Evening sessions on Wednesday and Thursday (March 18-19)
Fee: $950 (Includes two nights single lodging, all meals, and all Institute materials)

Complimentary shuttle service is available from Ontario International Airport to the Kellogg Center. Participants who desire accommodations and/or Shuttle Service on Tuesday, March 17, can make reservations directly with the Kellogg Center by calling 800-593-7876.

INSTITUTE REGISTRATION WILL BE LIMITED TO 50 PARTICIPANTS

Application Deadline: March 1, 1998   Fee Payment: March 15, 1998
For more information contact:

Don Olcott, Jr.
Western Interstate Commission for Higher Education (WICHE)
P. O. Box 9752
Boulder, CO 80301-9752
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Pilot Project FOCUS

Napa Valley College

Sue Nelson
Napa Valley College

Electronic transcript exchange is a relatively new technology that will benefit student services. The current method of paper-based transcript exchange is slow and resource intensive. Napa Valley College has historically been interested in electronic transcript exchange, but until recently was not technologically prepared. In addition, staff and funding shortages prevented the college from pursuing this technology.

This grant has given Napa Valley College the opportunity to implement electronic transcript exchange and provide a service on a state-wide level by serving as a model.

The identified trading partners are Solano CC and CSU, Sacramento. By working with these two colleges, Napa Valley College is well positioned to develop a model process. Electronic transcript exchange will be accomplished on a district level by engaging key staff at these colleges as consultants, and by hiring additional programming staff to provide technical support and train staff.

Upon completion, the project will be evaluated and an implementation manual will be developed for state-wide dissemination. The manual will be developed by analyzing the

Santa Barbara City College

Jane G. Craven, Assistant Dean, Admissions and Records Santa Barbara City College

Shelly Dixon, Matriculation Programmer/Analyst

This project involves a consortium approach that will allow Santa Barbara City College (SBCC) to implement an electronic transcript exchange in which: 1) SBCC's four local feeder high schools will send electronic transcripts to SBCC, CSU Northridge (CSUN), and UC Santa Barbara, and 2) SBCC will send electronic transcripts to CSUN. Once the project is underway, SBCC will develop and implement a workshop for other colleges seeking to implement similar projects.

The project addresses two areas,

Photo/Kurt Rhody

Electronic transcript exchange will provide solutions for Santa Barbara City College.

student services and administrative services. Although transcripts are recommended, the college finds that many students do not provide them. As a result, advisors are limited in their abililty to help students choose the right programs and appropriate course work.

It is expected that the electronic exchange of high school transcripts will increase the number of applicants who provide transcripts, will provide transcripts in a timely manner, improve the placement of incoming students into appropriate SBCC courses, and will assist transfer students to four-year institutions assess their eligibility for transfer. This regional model, involving all segments of education, is one that can be replicated in other areas of the state through project dissemination activities.

Shasta College

Dr. James Poulsen
Director, Extended Education
Shasta College

Shasta College, like many community colleges, is trying to expand the curriculum offerings that are available to students located throughout its district. What makes Shasta College unique to most of the districts in California is its size and rural nature. The college serves a three-county area of approximately 10,000 square miles, with a large population base outside of the city of Redding.

Traditionally, the college has tried to provide educational opportunities for students, but with the academic requirements to hire a faculty member and the minimum number of students required to fund a class, the college has not been totally successful in meeting student needs. In order to better serve the students, the college has developed locations in Burney, Red Bluff, and Weaverville to provide courses using two-way interactive video. The application of this technology has provided increased access to courses for students.

The Online Counseling grant provides Technology Model Applications Pilot Project (TMAPP) funds to purchase computer-based 128Kbps video-conferencing equipment. With the installation of ISDN lines at a site, the student can call up the counseling office and visit with a counselor in real time and within the student's schedule. Time and effort that will be saved if the counselor does not have to travel to a distant location. Students will also have a greater opportunity to participate in the Extended Education program if they are able to dial the college for essential services.

Shasta College believes there are many services that can be delivered to students using this technology. Admissions and records, financial aid, health services, academic tutoring, and consultation with individual faculty members are services that students may be able to access as a result of this grant. By using the grant to build the infrastructure, Shasta College will be better able to serve all of the students regardless of their physical location.

Coastline Community College

Rendell Drew
Coastline Community College

The Online Student Services Center at Coastline Community College will target distance education students, working adult students, non-native English-speaking students, and advanced placement and college preparation high school students.

Services will include online registration and interactive web-based program planning that will link the college Career Planning and Transfer Guide, the Student Educational Plan, the college schedule, and the course catalog. Interactive, real-time counseling sessions will be offered via scheduled Internet chat sessions, over Coastline's Edu-Cable channel, and using high school and industry-based Codec systems. E-mail, listserv, chat rooms, and MOO (MUD (Multi-User-Domain) Object Oriented) environments will be used to provide personal and group counseling and advisement.

Existing counseling and orientation to college courses will be adapted for Internet delivery. A series of brief video counseling segments will be developed for delivery over cable and via the Internet. College transfer events, featuring virtual campus tours and presentations by four-year university representatives, will be cablecast live with opportunities for call-in questions from students. A web-based Career and Transfer Center will provide college and university information, including real-time or asynchronous versions of transfer events, and job search and preparation information with links to career and employment resources. Designated cablecasts and web-site information will be available in Spanish and Vietnamese in addition to English.

Napa *(continued from page 4)*

strengths and weaknesses of the process and determining strategies for successful implementation. The manual will be available in both hard copy and electronic form. In addition, staff will be available for consultation for at least 24 months after completion of the project.

or physical disability, and update the knowledge base of workers at their places of employment.

A wide range of technological options are available to the distance educator. They fall into four major categories:

Voice- Instructional audio tools include the interactive technologies of telephone, audioconferencing, and short-wave radio. Passive (i.e., one-way) audio tools include tapes and radio.

Video- Instructional video tools include still images such as slides, pre-produced moving images (e.g., film, videotape), and real-time moving images combined with audioconferencing (one-way or two-way video with two-way audio).

Data- Computers send and receive information electronically. For this reason, the term "data" is used to describe this broad category of instructional tools.

Print- A fundamental element of distance education programs and the basis from which all other delivery systems have evolved. Various print formats are available including: textbooks, study guides, workbooks, course syllabi, and case studies.

Although technology plays a key role in the delivery of distance education, educators must remain focused on instructional outcomes, not the technology of delivery. The key to effective distance education is focusing on the needs of the learners, the requirements of the content, and the constraints faced by the teacher, before selecting a delivery system. Typically, this systematic approach will result in a mix of media, each serving a specific purpose.

Using this integrated approach, the educator's task is to select carefully among the technological options. The goal is to build a mix of instructional media, meeting the needs of the learner in a manner that is instructionally effective and economically prudent.

The following briefly describes the roles of the key players in the distance education enterprise and the challenges they face.

Students- Meeting the instructional needs of students is the cornerstone of every effective distance education program and the test by which all efforts in the field are judged. Regardless of the educational context, the primary role of the student is to learn. This is a daunting task under the best of circumstances, requiring motivation, planning, and an ability to analyze and apply the instructional content being taught. When instruction is delivered at a distance, additional challenges result because students are often separated from others sharing their backgrounds and interests, have few, if any, opportunities to interact with teachers outside of class, and must rely on technical linkages to bridge the gap separating class participants.

Faculty- The success of any distance education effort rests squarely on the shoulders of the faculty. In a traditional classroom setting, the instructor's responsiblity includes assembling course content and developing an understanding of student needs. Special challenges confront those teaching at a distance.

Facilitators- The instructor often finds it beneficial to rely on a site facilitator to act as a bridge between the students and the instructor. To be effective, a facilitator must understand the students being served and the instructor's expectations. Most importantly, the facilitator must be willing to follow the directive established by the teacher. Where budget and logistics permit, the role of on-site facilitators has increased even in classes in which they have little, if any, content expertise. At a minimum, they set up equipment, collect assignments, proctor tests, and act as the instructor's on-site eyes and ears.

Support Staff- These individuals are the silent heroes of the distance education enterprise and ensure that the myriad details required for program success are dealt with effectively. Most successful distance education programs consolidate support service functions to include student registration, materials duplication and distribution, textbook ordering, securing of copyright clearances, facilities scheduling, processing grade reports, managing technical resources, etc.

Administrators- Although administrators are typically influential in planning an institution's distance education program, they often lose contact or relinquish control to technical managers once the program is operational. Effective distance education administrators are more than idea people. They are consensus builders, decision makers, and referees. They work closely with technical and support service personnel, ensuring that technological resources are effectively deployed to further the institution's academic mission. Most importantly, they maintain an academic focus, realizing that meeting the instructional needs of distant students is their ultimate responsiblity.

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This and other "Distance Education At a Glance" Guides can be found at: http://www.uidaho.edu/evo/distglan.html

Message *(continued from page 1)*

the sum of its parts effect

• Each project should be one to two years in length

Instructional Application Pilots

1. Distance Education

There was one project selected*. This application pilot project was funded with 1997-98 funds. An augmentation will fund the project with 1998-99 funds and allow it to continue for another year. The pilot will develop and implement a statewide delivery system for distance education through the use of four telecommunication technologies: television, computer conferencing, audio/audiographic conferencing, and videoconferencing. The application pilot will include a variety of modes in the above areas. The implementation of this pilot will allow for a broad pattern of development for distance education programs designed to meet the learning styles and needs of the adult learner. The pilot will include online multimedia instruction, computer-aided instruction at a distance, and voice-mail boxes for students enrolled in distance education classes.

2. Virtual Faculty Resource Center

One project was selected*. The application pilot project was funded with 1997-98 funds. This augmentation will fund the project with 1998-99 funds and allow it to continue for another year. This application pilot will help to facilitate the development and improvement of curriculum and instruction in the California Community College (CCC) system. This project will allow for online instructional content databases, online multi-media tools database, online course outlines, syllabi, model practices, etc. Faculty will be able to access a Curriculum and Standards handbook with dynamic links to video

on demand when developing or revising curriculum, which would facilitate instructional points and show good instructional practice as applicable. This project has a fundamental connection to the training center project described later.

3. On-line tutorial support/study groups

There was one project selected*. This application pilot project will be funded with 1997-98 funds. An augmentation will fund the project with 1998-99 funds and allow it to continue for another year. This application pilot will provide tutorial support to students online through the use of voice-mail, conferencing, and e-mail technologies. Tutorial support would be provided for both traditional and distance education classes. Students enrolled in classes would be able to access a tutor and/or study group in a related subject area. The tutorial support could be either e-mail, voice-mail, or a combination of the two. This project would provide information on instructional support usage and potential.

Student Services Application Pilots

1. Student Friendly Services Program

The instructional element is the primary focus of the student when they attend a higher educational institution. However, the student services element often serves as a means for retaining the student. The introduction of student services from a consumer's perspective into the logic of preparing the CCC system for the technology wave is a prerequisite. The determining factor in the battle for the distance education student may be won on the quality of the distance student services programs, assuming comparable quality and rigor of the courses.

This is a program of the California State University (CSU) that has sig-

nificant intersegmental implications for the CCC system. The program combines a variety of student services in an electronics format for students that can be transported using the new telecommunications and information storage technologies. The CCC system will conduct a preliminary evaluation of this program in the academic year 1997-98. The outcomes of the evaluation will help to determine the level of involvement with this program and the development/adoption of the program for the CCC system.

2. UC Pathways Project

This is a program of the University of California (UC). The Telecommunications and Technology Infrastructure Project (TTIP) will support a variety of pilots to explore the methods by which the CCC system may take advantage of this program.

3. Online counseling/advisement

There were seven projects selected*. The projects address the counseling and advisement needs of both traditional and distance education students. Students would be able to access transcripts and consult with their counselors online via e-mail and/or voice-mail. Students may be able to access other community college catalogs that are online in the preparation of an academic program. This project requires colleges to provide catalogs online for systemwide access. This pilot would provide a significant community of interest for the distance education student who may be taking courses from several institutions remotely.

Administrative Services Application Pilots

1. College Telecommunications Plans

There were 13 projects selected*. This application pilot advances the proposal to require all colleges to de-

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velop and submit a telecommunications plan to the Chancellor's Office. Specific college hardware, software, and applications standards would be identified for minimum college telecommunications requirements. The college would be required to address telecommunications in existing and future facilities. The long-term funding and buildout of a telecommunications infrastructure will require this significant level of detail. Each college site must operate at a minimum level not only in accessing the telecommunications backbone, but also in providing universal access to all members of the campus and district sites. Telecommunications plans would be required for all new facilities and would be required to adhere to systemwide standards.

Training Needs

In both of the first two years of the Telecommunication and Technology Infrastructure Project (TTIP), the training needs of the faculty, staff, and students of the CCC system were addressed through a variety of programs, including the implementation of a coordinating center, two model application programs, and funds for colleges to support local training efforts.

1. The California Community Colleges Center @) Outcomes Network for Educators (4C@O.N.E.)

The 4C@O.N.E. center will develop a training process to enable faculty and staff of the system to learn how to use current hardware and software to design effective learning experiences, and how to integrate such experiences with other forms of instruction, both traditional and innovative. The Chancellor's Office completed a RFA process that selected De Anza College as the site for the center. We propose to continue support of this project.

Priorities for the TTIP are to improve student outcomes, expand access, and/or reduce per student costs by increasing the effectiveness and efficiency in administration, student services, and instruction. Such goals can only be achieved if faculty and staff are given ample opportunity to gain the technical expertise necessary to use such tools and the instructional expertise to make the highest and best use of such tools to improve learning.

2. Faculty and Staff Development Fund

In 1997-98, the Faculty and Staff Development Fund for Technology was implemented in the TTIP. We propose to augment the existing fund. This fund will allow the CCC system to continue to invest in its human resource element.

*Project selections can be found in the November issue of TIPS or on the World Wide Web at http://video.4c.net/TIPS/issues/11-97/page5.html