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## XV. TECHNOLOGY MASTER PLAN

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### *INTRODUCTION*

This Technology Plan supports the technological mission, goals, and objectives of Hartnell College, an educational institution serving the eastern half of Monterey County from a main campus in Salinas and several off-campus centers including sites in East Salinas, King City and Natividad Hospital.

### *BACKGROUND*

Prior to 1994, Hartnell College used little or no technology to deliver or enhance educational programs. There were no network connections in any classrooms, other than local connection in the computer classrooms. Hartnell College did not have an Internet connection. In fact most faculty, staff and administrators were not familiar with the Internet or its capabilities. On balance, the campus did not have a computer network.

Administratively, the campus was running Santa Rosa Junior College's (Schooling) administrative software. This system supported the Office of Instruction and Student Services by providing capabilities to schedule classes, register students, generate rosters and process registration accounting, but did not interface with other parts of the campus such as Human Resources or the Business Office. Human Resources were not supported by any technology. The Business Office was running a software application provided by COCO Inc. that lacked functionality, such as user account visibility, normally found in such software packages.

Of the four computer classrooms in use, only one was using computers that could be considered current for the time. The other three computer classrooms were running obsolete equipment that did not support academic instruction. There was no computer capability in the remaining classrooms. Many offices did not have current technology to produce even the most mundane functions like word processing or spread sheets.

In 1995 the College was not prepared to address the technology needs of a changing student body, nor was it prepared to operate new and needed administrative information systems. In 1995 a major charge of the new incoming President/Superintendent required that new technology be implemented campus-wide. After much debate, discussion and consensus building, the President/Superintendent recommended, and the Board of Trustees approved, funding a one million dollar technology upgrade plan that had 7 phases. External funding through Title V federal grants and other statewide grants were utilized in these improvements. The seven phases included:

**Strategic Step:** Technology Infrastructure Construction

**Phase 1:** Installation of fiber-optics in Classroom Administrative Building, Hartnell College Center, Annex, Merrill Hall, and the Library

**Strategic Step:** Technology Infrastructure Construction

**Phase II:** Installation of fiber-optics in all other buildings

**Strategic Step:** Technology Infrastructure Construction

**Phase III:** Purchase of networking hardware to allow some buildings to use a faster networking technology

**Strategic Step:** Technology Infrastructure Construction

**Phase IV:** Installation of ATM switching equipment

**Strategic Step:** Technology Infrastructure Construction

**Phase V:** Installation of the remaining intra-building wiring to connect users to the network and the Internet

**Strategic Step:** Bridging faculty digital divide

**Phase VI:** Purchase of faculty computers

**Strategic Step:** Automation and Integrating Administrative Information Systems

**Phase VII:** Purchase of a new Integrated Management Information System – Datatel.

**Strategic Step:** Automation and Integrating Administrative Information Systems

### *INSTITUTIONAL ACHIEVEMENTS (1995 – 2003)*

During these years, the following was achieved:

#### **A. INSTRUCTION**

1. Construction of 6 connected computer classrooms in the CAB building
2. Construction and consolidation of a networked CAD lab in the Technology building
3. Construction of reading, writing and math basic skills center with over 50 computers
4. Construction of a technology language laboratory
5. Over 30+ smart classrooms have been built (about 40% of possible classrooms now are smart classrooms)
6. Four distant learning classrooms that support two-way live video and audio have been or are in the process of being built (King City, Natividad, Merrill and Library)
7. Faculty Resource Center has been created and staffed by two Instructional Technologists.
8. Student available computers have grown from about 200 to over 650+
9. Over 15 online web delivered courses with 433 students (spring 2003)
10. Over 20 hybrid web and classroom delivered courses with about 600 students (spring 2003)
11. Migration to a web delivered online catalog system in the library
12. Over 14 electronic reference databases from which students can on and off campus access library research material
13. Development of a multi-media Macintosh computer classroom
14. Development of a classroom to teach computer networks has been constructed

15. Faculty computers installed in faculty offices with Internet connectivity
16. All computers are networked to the Internet
17. Development of Macintosh multi-media computer classroom
18. Over 10% of computer stations are in support of ADA

## **B. STUDENT SUPPORT SERVICES**

1. Purchasing of updated computers placed in each workstation that would interface with new enrollment software
2. Development and delivery of student services through web applications, including application for admission, registration, financial aid application, processing of grades and transcripts requests, and other still under development.
3. Telephone registration available in English and Spanish.
4. All computers are networked to the Internet
5. Installation of an optical storage system

## **C. ADMINISTRATIVE**

1. The population of administrative computers and printers has grown from about 150 to over 300
2. An upgraded and much improved web presence has been developed
3. The purchase and implementation of Datatel as the College's integrated administrative software system
4. Implementation of an email system
5. All computers are networked to the Internet

## **D. FACILITIES/INFRASTRUCTURE**

1. All classrooms and offices have been network wired
2. Campus backbone is a high speed ATM network running across fiber between buildings
3. A video network that delivers cable TV and Satellite downloads across campus has been developed
4. Microwave Wide Area Network (WAN) from the main campus to King City (under construction), Natividad and east campus (under construction)
5. Purchase and installation of a video bridge
6. Professional sounds systems have been installed in the College Center and the gym.
7. Upgrade from analog to a digital satellite downlink
8. Construction of the King City Center that has over 100 computer stations and a distance learning capability
9. Construction of Natividad Center that has over 50 computer stations and a distance learning capability
10. Construction of a computer classroom at East Campus

### *INSTITUTIONAL INITIATIVES (2004 – 2006)*

#### **A. INSTRUCTION**

Currently, a variety of formats are being used to integrate technology into instruction. Among these are web-based courses and courses delivered via video teleconference. In addition, many instructors campus-wide have developed their own websites and utilize computer-based support as

a standard component of instructional delivery. This support can be either via software programs available on campus or via the internet. Many instructors also communicate with their students during non-scheduled hours via e-mail. The list of faculty users is increasing over time.

While the majority of distance education classes are via the internet and video teleconference, there is considerable anecdotal evidence that students prefer a combination of “high-tech” and “high-touch,” or “hybrid courses, which provide the student with some instruction on-line, while maintaining some face-to-face contact. If the hybrid approach reduces the attrition rate and/or improves student performance, it will be adopted as a regular model.

In order to assure quality control as the college enters the technology era, a Distance Education Committee has been established to determine best practices and make recommendations to the college community, regarding minimum standards for delivery of distance education. This includes such matters as minimum faculty training, course development and evaluation, as well as ensuring comparable student learning outcomes, regardless of method of delivery.

The College is in the process of developing a formal Information Competency requirement that will identify the necessary skills in technological literacy, library literacy, research methods, critical thinking, and communications. Although Information Competency encompasses more than computer skills, the ability to effectively use technology tools is one of the required skills of an Information Competency program. The College will determine the appropriate level of Information Competency to be required for degree and certificate programs and will develop multiple means for meeting the Information Competency requirement.

The College continues to maintain an impressive array of computer hardware and software to support its educational programs. These include 6 computer labs, including a computer networking lab; Tandenberg language lab; CAD lab; circuits' lab; multimedia lab; reading and writing labs; and math lab in addition to computers and software available in the library's reference and media centers. This list is not exhaustive, as there are several mini-labs as well as the many computer classrooms located at satellite facilities.

The library maintains a Faculty Resource Center (FRC). The facility is also available to staff who require access to technological resources and assistance. The FRC will be responsible for research to determine the instructional technology needs of faculty and students. The FRC currently maintains a minimum of eight high-end workstations equipped with current software suitable for curriculum development, technological application and assistive technologies in the classroom, as well as two stations for each Instructional Technologists responsible for maintaining the facility. Each workstation is configured with a CD-RW burner/DVD player. Scanners, portable zip drives, networked B/W laser printer and local color printers are available to all workstations.

As of spring 2003, few faculty and staff have ergonomically sound furniture for their PCs. While it is not financially feasible to replace all furniture, newly purchased furniture will be required to meet ergonomic standards, and existing furniture will be modified insofar as possible. It remains an on-going goal to provide all faculty and staff with ergonomically correct workstations.

Printed materials are rapidly being augmented by information in other formats, including full-text databases, e-books, and image formats stored electronically. The library will acquire the information that is most relevant to the curriculum of the College and will expand the scope of that which

is available by participating in interlibrary loan and other resource sharing agreements, and by subscribing to online database and reference services.

To support distance education students, expand on the limited print holdings of the college educational centers, and offer information resources when the library is closed, the library will provide access to a broad range of digital and online resources.

The Planetarium, built in 1962, is currently under renovation. Effective in Spring 2004, the new facility will be equipped with cutting-edge digital full-dome projection technology. New technology includes a multimedia design suite, new sound system, refurbished dome for better projection, and completely new seating.

By maximizing the use of the most current assistive technologies, Hartnell College will continue to offer each student equal access to programs, classes and educational experiences.

### *CURRENT GOALS*

1. Develop and implement online sections for all individualized and independent reading and writing courses, these are the ENG 175, 176, 185, 186
2. Maintain equivalent hardware and software at all campus sites
3. Support for a completely online liberal studies associates degree with an education emphasis for teacher candidates (in conjunction with the counseling department)
4. Faculty development - opportunity to participate in 2-way interactive workshops as well as campus capability to share lectures and class demonstrations via live links between classrooms.
5. More smart classrooms (at least 70% of the classrooms) and routine computer upgrades (no longer than every 4years) for all areas (with more often upgrades in areas such as the multimedia lab)
6. Update all faculty computers at least every four years
7. As appropriate, implement wireless systems in classrooms and study areas
8. Place additional computers, printers, scanners and other technology in MESA room and student tutor center in Merrill Hall
9. Replace selected whiteboards with smart whiteboards that have the ability to translate written information directly to computer storage
10. Coordinate with MBARI and other research and educational entities to receive live feed of data and information
11. Redesign chemistry, biology, and physics laboratories to support 21st century laboratory courses to better prepare students
12. To educate and train faculty on all of the resources available at Hartnell College that can be used to enhance instruction and move students to using the technology tools for the Physical

Education/Athletic discipline

13. To implement distance learning in the Physical Education curriculum in the form of Online Courses, Hybrid Courses, Live interactive courses and video courses
14. Incorporate audio and video technological capability in the Child Development Center (CDC) and connect the center to the main campus technology infrastructure in a way that the child taping activities can be received via a video network to areas such as the library and in Occupational Education's smart classrooms for students and faculty to access. Part of a larger goal to create an environment where students and teachers can put video on the network and retrieve it at any academic computer
15. Maintain contemporary Computer applications, Business and computer aided instruction (CAD) software

## **B. STUDENT SUPPORT SERVICES**

By developing and delivering online students services Hartnell College will respond to the needs of students regardless of location and time constraints. Access to essential services will give the benefits of providing information and support for all Hartnell students and potential students through cyberspace. Online student services will serve and support the following populations:

- Current on-site Hartnell College students;
- Distance education students;
- Hartnell students attending classes at remote sites, including East Campus and the South County Center in King City;
- Prospective new students at high schools in the district;
- Prospective new students in the adult population;
- Prospective re-entry students;
- District residents seeking community education, enrichment, or short-term courses.

In the near-term, the Student Services Division will use the internet, accessed through the College's main web page, as the primary method to develop and deliver distance education and services. These services are and will continue to be accessible through a Campus Web Portal. The College will continue to study the use of translation software that will enable all essential student services online information to be translated into Spanish on screen. The development and operation of these services will be dependent upon the identification and acquisition of funding for the hardware, software, wiring, and maintenance necessary to ensure efficient and consistent delivery of the services discussed below.

### *OUTREACH AND RECRUITMENT*

Links to general college, student services, and program information will be available at various critical sites throughout the community. These links will easily guide prospective students to the information they will need to enroll, access college educational programs and support services. Outreach and recruitment information links has been and will continue to be established with the following:

- Local high schools;
- Adult education programs;
- Public libraries;

- Local employment offices;
- The One Stop Center;
- County social service agencies

### *INFORMATION*

Essential information available currently on the College's web page includes:

- Hartnell College Enrollment information
- Schedule of Classes (Fall, Spring, Summer, and any special notices)
- College Catalogue
- Links to all Student Services programs
- Campus and site maps
- Faculty/Staff directory (office locations, contacts, phone numbers, email addresses)
- Library's online catalog and electronic resources

### *COUNSELING*

The Counseling department will work to expand existing and create new online counseling courses and support services in English and Spanish. These courses and services are especially important as enrollment grows district-wide. The following courses have been developed and are currently available online for students:

Counseling 21: Orientation to College in English Online

Counseling 21: Orientation to College in Spanish Online

A major concern in developing this service continues to be the assurance of confidentiality. Academic Web Advising by email is being provided.

Electronic Student Educational Plans (SEP's) are currently being developed for implementation during the next academic year. The SEP will hold the developed education plans for access by any Hartnell Counselor and will guide students electronically to enroll in only those courses indicated on the SEP. Electronic Degree Audit is scheduled for pilot testing in Spring 2004. Electronic Degree Audit will allow students and counselors to evaluate the students' progress in degree/certificate programs instantly.

The Optika program has been installed on all Hartnell counselors' PC's district-wide. This program allows counselors to retrieve transcripts from other colleges and high schools for counseling purposes. The latest version of Optika will need to be purchased for compatibility with the new XP software system, which counselors utilize.

As the use of two-way teleconferencing increases, that technology will be used to deliver counseling service support to students in remote locations.

### *ADMISSIONS AND REGISTRATION*

It is the intent of the A&R department to fully implement a complete range of online services. Enrollment and registration materials will be posted in English and Spanish, or will use the translation software, discussed earlier. Information available for access will include:

- Steps to Enroll at Hartnell College
- Online application using CCC Apply or students may download the application for admission in PDF format

- Registration using PAWS (Personal Access Web Services)
- STAAR\* test results
- Student Class Schedule
- Unofficial Hartnell transcripts
- Degree Audit
- Electronic Educational Plan
- Student Accounts
- Academic Calendar

*PROGRAM DESCRIPTION:*

The Purchasing Department was instituted by the President/Superintendent to support the highest level of fiscal management through the establishment of centralized purchasing.

The Purchasing Director, under the direction of the Vice President for Administrative Services/Assistant Superintendent, and the Controller, plans, develops, implements and manages the Centralized Purchasing Program to attain optimum efficiency, maximum cost avoidance, and maximum cost reduction for all departments.

Primary responsibility is the procurement of materials, commodities, equipment and services for use by the various departments of the Hartnell Community College District. This responsibility is performed by reviewing procurement requests; soliciting and evaluating proposals; analyzing current and potential suppliers; conducting negotiations; executing, implementing, and administering contracts; developing forecasts and procurement strategies; emplacing procedures and guidelines; supervising and/or monitoring the flow and storage of materials; and developing working relationships with suppliers and with other departments within the Hartnell Community College District.

*STATEMENT OF PHILOSOPHY:*

The Purchasing Program (Centralized Purchasing, Warehouse/Receiving, Temporary Records Retention, and Reprographics) is dedicated to providing excellent customer services that assist faculty and staff in delivering quality educational programs. This is achieved by ensuring support, understanding and accuracy of Purchasing, Warehouse and Receiving, Temporary Records Retention, and Reprographics.

- Faculty grading
- Faculty rosters
- Degree Audit
- Electronic Educational Plan
- Grading forms via Intranet

*ASSESSMENT OF BASIC SKILLS*

An Assessment page link gives students access to the testing calendar for the current term. This page also includes information regarding the types of assessments administered at Hartnell College in both English and Spanish. Students can access their STAAR\* scores via PAWS. Students may schedule an appointment with a counselor for interpretation of scores.

## *FINANCIAL AID*

Online information and links to financial aid resources can provide potentially significant encouragement and support to prospective and current students. Financial aid resources and information that can be developed and/or adapted for web-based methods include:

- Financial Aid guide
- Financial Aid advisement
- General financial aid form using online FAFSA or downloadable PDF format
- Lists of accessible financial aid resources with general requirements (grants and loan programs)
- Work study opportunities (linked with Career Center)
- On campus scholarships and links (such as to Institutional Advancement)
- Financial aid and scholarship links (links to searchable databases)
- Financial aid directory, including office locations/maps, contact phone numbers and email addresses

## *RE-ENTRY CENTER*

This page will provide resources and links specifically designed for the re-entry student. It will include access to all other online student services, including counseling, services specific to the re-entry student and financial aid.

## *INTERNATIONAL STUDENTS*

International Students may now apply online using CCC Apply. Resources and links specifically designed for International Students may be obtained through the Hartnell College webpage. In addition, Hartnell complies with immigration and naturalization laws using SEVIS program.

## *TRANSFER CENTER*

Information on the Transfer Center web page will continue to support students planning to transfer to a four year institution. This information will include transfer requirements at the UC and CSU systems, and selected state-based private universities. Currently the Transfer Center web page contains a calendar of UC and CSU transfer counselor activity in the Transfer Center.

## *CAREER CENTER*

The Career Center web page will support students who are interested in job placements after graduation or completing their Hartnell program as well as students seeking full-time or part-time work or an academically-based internship. Resources available on the Career Center page will include:

- Job banks
- Electronic Interest Assessments and Self Evaluation Testing
- Career development support (occupational requirements, competencies, etc.)
- Student Internship
- Job preparation guides (Resume Writing, Job Search, Interview Preparation)
- Career Center directory, including office location/map; contacts, phone and email addresses
- Calendar of on-site recruiter visits

## *OTHER SERVICES AND LINKS*

Additional student services which may be adaptable to online delivery include:

- Development of online courses such as How to Use Online Services
- Workforce Development Services and links;
- Support services for special populations, such as EOPS and DSP&S beyond what is explained in their web pages

## *CURRENT GOALS*

The main goal of the Student Services Division is to fully implement all of the initiatives stated in this plan. This involved a two pronged approach: 1) to aggressively seek external and internal funding for their implementation in partnership with internal and external units. 2) In the statements above one finds services that are provided currently and others in various stages of the development. Through periodic assessment the Student Services Division will prepare a list of each one of the services marked as “will provide” or will develop” and take necessary steps to implement all of them as written as well as re-evaluate their usefulness, change them and adapt new goals as technologies change and resources become available.

## **C. ADMINISTRATIVE**

The College implemented and now maintains the Datatel Colleague software package. The system has several major modules:

- The finance module includes general ledger, accounts payable, purchasing, stores inventory, fixed assets, budget development, and cost accounting
- The student module includes course catalog, class schedule, events management, faculty load, recruiting, admissions, registration, accounts receivable, academic records/transfer and degree audit
- The human resources module includes applicant tracking, position management, employment administration, personnel services budgeting, compensation administration, time and attendance reporting, employee relations administration, payroll calculation, payroll adjustments and history, health and safety administration, and benefits administration

The product incorporates web-based user-interfaces to facilitate access by staff, faculty, and students. As of Spring 2004, students are able to register online and do academic planning for degrees and certificates. Telephone registration is now available in English and Spanish.

The College has created an Executive Information System (EIS) that lets manager’s access management data such as FTES, Cost, student units attempted, ethnicity and other related data online in an easy to use spreadsheet format. This system continues to be improved.

The College now has a fully functioning web site up and running. This site provides information on all aspects of the college including schedules.

## *CURRENT GOALS*

1. Implement E-Commerce by spring 2004 (students paying online for registered courses)
2. Further Develop additional EIS functionality to support Institutional Planning/Student Services

3. Deploy the communications module within Datatel so that students can receive “early warning”, course advisement and other information via email
4. Continue improvement on Datatel support in the areas of financial aide, human resources, business office, EOPS and counseling
5. Implement online purchasing

#### **D. FACILITIES/INFRASTRUCTURE**

The College PBX system was installed in 1985 and is nearing the end of its useful life. The college is investigating the latest technologies to find a state of the art technical solution (a mix of TDM and voice over IP technologies) to replace this aging equipment. This will be a bond funded item.

The College is in the process of building, with MCOE, an OC3 microwave link from the main campus to the King City Center and from the main campus to East Campus. There already exists a DS3 microwave connection to Natividad form the main campus. These microwave links will provide voice, video and data to those satellite campuses. Completions of all microwave links should be done in the spring of 2004.

The data network has grown from about 300 connections in 1997 to over 1,200 connections in 2003. Over 98% of the Colleges computers are connected to this network and the Internet. The network will continue to grow during this time frame as about 250 more computer connections will be added when the new LRC is completed.

New satellite campuses have been built in King City and Natividad that are rich in technology. Both new centers have computer classrooms and distance learning video conferencing capabilities. Theses centers are connected back to the main campus with high speed microwave links.

Measure H funding will modernize the data and video networks on the campus. Design work for this upgrade is now in progress.

The existing servers that support Datatel and the Document Imaging System (storage of transcripts) are both nearing the end of their useful life (seven + years old as of fall 2003). Both these servers need to be replaced within the next 24 months.

The College is not able to backup all server software/data thereby making full disaster recovery very difficult if not impossible. The College needs to investigate the use of Storage Area Network (SAN) devices in order to solve this problem. Installation of SAN equipment will also greatly reduce the number of hours required to maintain servers (thereby reducing labor costs by not having to restore the 2nd now vacant network position). It will also lower by about half the cost of future server’s procurements thereby saving annually about 50,000 in additional cost.

#### *CURRENT GOALS*

1. Develop the microwave links between the main campus, Natividad, East Campus and King City
2. Develop Video over IP (data networks) across LANS and VLANS
3. Replace the PBX through funds provided by Measure H to allow both TDM and VOIP technologies

4. Replace voice, data and video network infrastructure through Measure H with a system that allows intelligence network monitoring.
5. Replace Datatel server (estimated cost \$65,000 – without purchase of SAN) and Document Imaging server (estimated cost \$32,000 – without purchase of SAN) within the next 24 months – unfunded requirement
6. Install SAN technologies (estimated cost \$100,000) – unfunded requirement
7. Build the new LRC to fully support technologies of the 21st century
8. Plan the CALL building to fully support technologies of the 21st century

### *INSTITUTIONAL VISION (2007 AND BEYOND)*

#### **A. INSTRUCTION**

Instructional programs will be characterized by technology-based courses and the flexibility to change with innovations in technology. Programs will incorporate a rich variety of technology-based resources, including internet, e-mail, and video conferencing. Courses will be offered in both “pure” distance education format and via “hybrid” format.

Instructional programs will support the diverse needs of the student population and be consistent with the College’s mission and core values. Technological sensitivity will be reflected as digital divide issues are addressed. Continuous attention will be paid to research as curriculum is developed that is reflective of current trends in technology.

Students will complete requirements to demonstrate information competency across the curriculum. The institution is committed to providing students with access to technology and training resources to achieve technological literacy.

Faculty will have appropriate technological resources to deliver state-of-the-art educational programs. This will include sufficient hardware, software, and technical support personnel. In addition, faculty will receive on-going staff development training to ensure their ability to provide educational programs that reflect this vision. The college will solicit and encourage feedback from faculty and students concerning the state of technologically-delivered education and their on-going needs to remain current.

The Learning Resource Center will have provided a technologically rich environment that fully supports all instructional programs and learning styles. It will also continue to have the lead in faculty and staff development as it relates to technology and in teaching Information Competency.

#### **B. STUDENT SUPPORT SERVICES**

In the next five years, the College will employ varied technologies to provide support services to regional, national and international students. To the extent new technologies will allow, the College will provide synchronous and asynchronous support services to distance education students. The technological applications employed will reflect a wide range of options, utilizing the same media that are used to provide distance education at the most forward thinking institutions. Among these, the College will utilize two-way interactive video, the World Wide Web/internet, and other emerging technologies to develop and deliver a full access to higher education at Hartnell College through responsive and efficient services.

The Technology Master Plan for Student Services will be linked with and supported through the technology plans for other major campus departments, including the library, classrooms, computer laboratories, and other facilities on the main campus, East Campus, and the South County Center. This will ensure the broadest range of access for students requiring the information and resources posted.

The college will also continue to work to develop partnerships and electronic networks with agencies such as the Employment Development Department. Monterey County Office of Education and the County Government's One-Stop Shop so that Hartnell College students can make use of services provided by these organizations.

#### *FACULTY AND STAFF DEVELOPMENT*

The Student Services Division will collaborate with the faculty and staff development committees to provide information and deliver training to all Hartnell personnel on the development and use of online student services. This will be accomplished through written information as well as FLEX programs and other faculty and staff workshops.

#### *PLANNING AND EVALUATION PROCESS*

The Student Services Division will continue to collect and review data on the emerging use of online student services. In doing so, the division will seek partnerships with the California Virtual Campus programs, and online programs at Rio Hondo College and Orange Coast College, among others.

#### *RESOURCES NEEDED*

To fully develop and implement online student services, the Division will study and acquire information on the resources needed for success in partnership with the Hartnell College Information Systems administration and support staff. These resources may include the following:

- Hardware
- Software
- Wiring and connections
- Technical consulting
- Training
- Technical support

The costs of these resources, installation, implementation, and maintenance will be defined as available. The Student Services Division will partner with other units in the college to obtain external funding and internal financial support for any of these technological applications.

### **C. ADMINISTRATION**

The College will continue to develop administrative software systems that are fully integrated so that data is entered only once, at that point in the organization where the data is owned and best understood. In building these systems, the College will strive to make sure they are adequately resourced and protected.

The College will continue work on developing an Executive Information System so that information can be displayed in an easy to read and meaningful format for decision making. It will also work on developing tools that will ensure data integrity and accurate MIS reporting.

#### **D. FACILITIES/INFRASTRUCTURE**

The College, using proposition H funding, fund 1 and external sources, will strive to develop a state-of-the-art networking infrastructure between campuses, at the main campus and at satellite campuses. This network will consist of mixed technologies such as microwave, fiber, copper and local wireless systems. Between campuses, a high speed microwave wide area network will be used. On campuses, a backbone (between buildings) the campus will use a fiber optic network with redundant paths (so there is no one point of failure). Within buildings, a combination of fiber, copper and wireless will be used to connect to individual computers. This network infrastructure will be well documented and centrally managed. The network will serve to support data, video and telephone traffic.

The College remains dedicated to training staff and administrators on the use of administrative systems so as to get full value from these investments and the greatest efficiencies in the work place possible. The College will continue to look for new technologies that increase worker productivity.

Connecting to this network will be digital satellite downlinks, and eventually satellite uplinks, wireless cable systems, coax cable systems and other developing technologies that help the College deliver instruction through distance. Wireless systems will be developed that allow students to use owned laptop computers to connect to College networks in a seamless environment. The College will maximize its collaboration with other institutions in building these networks so as to reduce cost and maximize its reach into homes, businesses and other institutions.

As part of the network development, The College will build a state-of-the-art computer center that will house both academic and administrative computer systems (servers, switches, back-up and other like services) under central control. This Center will be the hub for all servers both at the main campus and satellite campuses. It will provide resources for programmer, telecommunication, system administration, help desk, administration and operation staff.

The College will also develop facilities capable of providing training to staff and faculty in all new technologies.