

Technology

Master Plan 2006-2011

INTRODUCTION

The Technology Committee undertook the development of the District's fourth Technology Master Plan in the Fall of 2005. Using the previous technology plans and the District's Educational and Facilities Master Plan as a guide, the committee informally surveyed their constituents; researched Technology Plans developed by other institutions and examined the current state of technology within the District and where we would like to be in five years.

TECHNOLOGY COMMITTEE

As part of the planning process, the members of the Technology Committee reviewed the responsibilities of the committee as set forth in the Decision Making Guide, and, from those responsibilities, developed a statement of purpose for the committee and defined areas for the committee to focus on.

The purpose of the Technology Committee is to facilitate the infusion of technology into our structure and functioning. The chairperson responsibilities of the committee are shared by the Vice President of Institutional Development, Technology and Online Services, the Director of Network and Computer Support Services, and an appointed member of the faculty. The Technology Committee reports to Executive Cabinet via the Vice President of Institutional development, Technology and Online Services.

Committee membership is open to all employees of the District and members of the Associated Student Government. The committee maintains a core voting membership that is reviewed each year and whose status is based on attending a majority of meetings in the previous year. The names of faculty who are designated as core members are submitted to the Academic Senate annually for approval.



The focus of the committee is to:

- Generate enthusiasm for the use of technology on campus to the benefit of student learning.
- Monitor the progress towards the implementation of the District's Technology Master Plan.
- Update the Technology Master Plan as needed with specific objectives for action and improvement.
- Work with Facilities to ensure that the infrastructure and design of all District buildings support the current and future use of technology.

- Assess the success of technology training provided through Professional Development, Computer Support and self-guided training systems to ensure that the technology training needs of faculty and staff is being met.
- Work with the Director of Professional Development to recommend technology training ideas for the District.
- Develop budget proposals to submit to PAC-B for funding to implement technology plans and action priorities.
- Promote and set the tone for technology development.
- Serve to coordinate with and link efforts among departments and committees as appropriate across the District.
- Make recommendations related to the technology needs of the District to the Facilities Master Planning Committee, staffing committees, PAC-B, Superintendent-President, and College Planning Team.

ORGANIZATION OF THE PLAN

Given the constant evolution of technology, it is difficult to predict what the District will need in terms of technology over the next five years. The Technology Plan has been divided into major sections covering hardware, software, network infrastructure, technical support, facilities, accessibility & assistive technology, distance learning,

online services, training and learning resources. Each section provides a brief history, an explanation of the current environment and recommendations for the next five years.

ANNUAL REVIEW

As mentioned throughout this Plan, technology is constantly changing. In order for this Plan to maintain currency and effectiveness, it must be reviewed annually. The Technology Committee will schedule a review of the Technology Master Plan during one meeting each fall. During that meeting the Committee will review current trends in technology and education, evaluate the progress the District has made since the last review, and make recommendations for modifications or additions to any part of this Plan.

Once the review is completed, all modifications will be submitted by the Technology Committee to the Vice President Institutional Development and Technology for review and approval by Executive Cabinet before being submitted to the Board of Trustees for adoption.

HARDWARE

Background:

The District has made great strides towards the previous Technology Plan's goal of a three year replacement cycle on computer systems. However, due to the growth in computer systems in the District and the evolution of technology, a three-

year replacement cycle for all computer systems is no longer practical or necessary. Computer systems



in some areas can now last up to five years if properly maintained. The new technology including processing power and storage capacity coupled with a significant decrease in the price of most systems has enabled the District to stretch the useful life of computer systems well past the three-year mark. Only key areas of the District that deal with high-end software or processing requirements would need to replace their equipment on a more frequent schedule.

The District supports a mixed environment of PC and Macintosh computer systems. While the majority of the campus is on the PC platform, the District recognizes the need for the high-end graphic capabilities of the Macintosh system for certain areas. These areas who utilize the capabilities of the Macintosh platform include PIO, Graphics, Audio/Visual, Reprographics, Photography, RTVF, Music, Multimedia and Graphic Design. Other areas that have a preference to the Macintosh

platform but do not require the processing power have to secure their own funding for the purchase or accept a rejuvenated system that is passed-down from one of the other areas. Table 1.1 contains the breakdown of computers by location, platform and user group.

Current Environment:

Computers:

Every permanent employee of the District is provided with a computer system based on the needs of his or her classification and job duties. Desktop computers are the primary systems provided to employees although they do have the option of choosing a laptop computer with the appropriate approvals. The District maintains a new employee equipment fund that is used to purchase computers, software and required peripherals for employees hired into a newly established position. Any employee who fills an existing vacancy will be provided with the computer system of their predecessor. An employee who is categorically or externally (grant) funded will be provided a computer system through their categorical or external budget. Adjunct faculty and other part-time employees are provided with access to computer systems in their work area, the Technology Center (I-106), Library, or Adjunct-Faculty office (I-312).

Laptops:

Laptop computers are provided to employees upon request as long as funding is available. Employees who choose a laptop as their primary computer

are required to bring the laptop with them when they come to campus, connect to the campus network at least once a week to obtain patches and virus definition updates and return the laptop to Computer Support Services (CSS) at least once a year for upgrades and other updates. In addition, users of laptops agree to assume financial responsibility for the laptop while in their

possession and understand that they are not allowed to install any personal software on the laptop without the permission of CSS. Users who desire a laptop in addition to their primary computer system will be required to obtain department or special funding for the purchase and that laptop will not be included in the District replacement cycle.

Printers:

Printers and other peripherals are purchased on an as-needed basis and have no set replacement cycle. The District has adopted a philosophy of clustering offices in order to utilize a centralized high-end black and white printer rather than incur the expense of individual printers for all offices. These centralized printers are purchased through CSS which also handles the replacement of the toner when needed. Individual offices outside of an office cluster will be provided with a personal printer by CSS. Any person in an office cluster who desires a personal printer will be required to fund that printer out of their department budget.

Computer labs are provided with high-end black and white printers on a ratio of no more than ten to one. The need for high-end color printers within a computer lab are evaluated on a curriculum necessity basis. Toner for printers used in computer labs is the responsibility of the department who oversees the lab.

Scanners:

The District currently maintains a limited number of scanners in various computer labs and offices. These scanners are purchased with both District replacement funds when necessary and individual departmental funds. The scanners are replaced as needed depending on their use.

Personal Data Assistants (PDA):

Personal Data Assistants, Pocket PCs and other mobile technologies have become

**Table 1.1 Computer Count by Building
Fall 2006**

Bldg	PC		MAC		Totals
	Staff	Student	Staff	Student	
Academy of the Canyons	2	0	0	4	6
Administration Bldg	92	0	11	0	103
Aerospace Dynamics	4	40	0	0	44
Classroom Bldg	98	40	6	0	144
Cwee/NSF/Community Extension	18	0	2	0	20
ECE	13	0	0	3	16
Employee Training/Small Business Dev Ctr	12	0	0	0	12
EOPS/CalWorks	7	2	0	0	9
Faculty Office (X11)	16	0	0	0	16
Human Resources/Foundation	21	0	0	0	21
Instructional Resource Bldg	163	216	21	0	400
Interim University Center	8	73	0	0	81
Laboratory	20	47	4	12	83
Library	23	41	0	0	64
Maintenance/Facilities	13	0	0	0	13
Media Arts	25	139	8	74	246
MESA	9	35	0	0	44
Music Dance	13	0	1	17	31
Other Off-Site Locations	9	44	0	4	57
PAC	6	0	0	0	6
Physical Education	20	0	1	0	21
Student Center	41	24	3	1	69
Technical Bldg/Village	10	185	1	0	196
Warehouse/Purchasing	9	0	0	0	9
Total	652	886	58	115	1711

more prevalent over the last few years. These devices can be connected to District desktop or home computers where



copies of email, calendar and other office files can be transferred. This allows an employee to take an electronic copy of their calendar with them, make changes, and synchronize the PDA to the electronic calendar on a District computer. Computer Support Services in consultation with the Technology Committee will make recommendations on PDA and Pocket PC purchases that will be supported by the District. However, funds to purchase these units will need to come from individual department funds or through the regular budget request process.

Recommendations:

The Technology Committee has developed a set of general equipment standards and guidelines to support the computer hardware needs of the District. These standards were developed through previous Technology Plans and are reviewed annually by the committee.

- PC client workstations and laptops have been standardized to Gateway systems.
- PC Servers have been standardized to Gateway.
- Mid-Range servers for the Student Information System have been standardized to HP in accordance with recommendations from the software vendor.
- Macintosh systems are provided by Apple as the sole source for this platform.
- Printers have been standardized to HP for all areas.
- Deviation from these standards is taken on case by case basis and shall be reviewed by the Technology Committee.

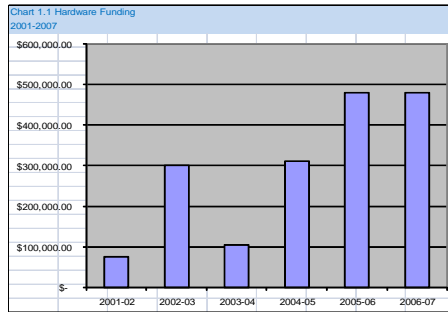
Going forward, the District should:

1. Ensure that no District computer is older than 5 years. Computers over 5 years old no longer possess the processing power or memory to run current application programs. In addition, as a computer goes past the 5 year mark, many of the major components deteriorate increasing the downtime of the units and reducing productivity.
2. Develop a tiered structure for equipment replacement. Our current replacement policy replaces units strictly by the age of the hardware rather than the use of the system. The result has been that labs and users who

utilize resource intense applications must wait just as long as other areas whose computing needs are not as critical. A new procedure should be developed that takes into consideration the system needs of users and labs. This new procedure would look at the needs of the user, the applications used on the system and the recommendations of the application manufacturers when making a replacement determination. A current list of computer labs and their last replacement date is listed in the appendix of this document.

3. Secure ongoing funding to implement the equipment replacement plan. Over the last few years, the District has gradually increased the replacement budget for technology (See Chart 1.1) However, the budget still needs to grow in order to implement even a 5 year replacement cycle. The District needs to fully fund the replacement budget to ensure that the District's technology equipment is current and can support the instructional and administrative needs of the District.
4. Secure funding to investigate new technologies. In order to stay current with technology, funds must be allocated to allow for the purchase of new technology to be tested by faculty and staff for possible inclusion into our

technology infrastructure. The technology must be tested on-site in order to properly assess its value and allow for the greatest number of evaluators.



5. Develop a searchable inventory of District Technology Equipment. Currently, the District's technology inventory is only accessible by the Computer Support Services staff via an Access Database. A system needs to be implemented so users can view the inventory online to monitor the age of their equipment and easily access their hardware specifications.
6. Replace all CRT monitors with equivalent size LCD monitors. LCD monitors have become the standard for all new computer systems. The District should replace all remaining CRT monitors with LCD to conserve electricity, reclaim desk space and improve the aesthetics of the workplace.
7. Support the toner needs of individual offices outside of the clustered environment. The District currently provides an

individual office printer for any employee whose office is outside of an office cluster. However, the occupants are responsible for replacing the toner in their printers, unlike the toner in the clustered printers, which are replaced by Computer Support Services. The District should provide additional funding to Computer Support to provide replacement toner for those individual offices that are outside the office clusters.

SOFTWARE

Background:

Software applications are constantly adding new functionality and opening new opportunities that users are eager to adopt. Software is also limited by the hardware that it runs on. Continuing developments in the technologies of information storage and retrieval open the door for increased opportunity for improved software development. Software instruction and multimedia applications will continue to be of intense interest to educators and the community. Furthermore, as computing networks evolve so does the ability and need of transmitting data accurately and quickly. To stay compatible with the newer systems, the District is often forced to upgrade software applications, as well as the operating system software that run them.

Compatibility is one of the main issues that all computer users and the District face. From different hardware platforms to

different file/data formats, being able to share reliable/secure information is key to a successful organization, and so are the tools that enable cross platform compatibility. Having a single platform with standardized software reduces compatibility problems.

Software licensing is a major concern as the District grows because the risk of having unlicensed software increases dramatically. Due to faculty, staff, and students bringing in software from home and campus-wide network/internet access, controlling who installs software and what software is installed is impossible without the proper tools. Not all software is licensed equally. By installing software the District is agreeing to abide by its terms and conditions. Everyday the District enters into license agreements unbeknownst to them.

Current Environment:

The District supports applications that run on Macintosh, Windows, and UNIX-based systems. These applications encompass activities from word processing to 3-D animation. Present support levels for these applications are as varied as the applications themselves. This is a common occurrence in a distributed computing environment where the user of the application is generally the most knowledgeable about its functionality. At the same time, all new faculty and staff computers and most office computers come equipped with a standard package of Microsoft Office, Microsoft Outlook,

Internet Explorer, Norton Antivirus and Datatel.

Currently within the District, there are single-user licenses, multiple-user licenses, site licenses, and server licenses. Monitoring and tracking of campus-licensed software occurs through Computer Support Services, but no standard procedure for dealing with copyright violations exists. The District maintains a centralized software budget that covers the standard software used on District computers and approved applications installed in computer labs. Individual departments may purchase and license any software package they choose provided that Computer Support Services has reviewed and approved their request. Specific needs for specialized applications can create a dizzying variety of software. Individual departments and divisions with appropriate expertise may assume responsibility for the specialized software that they utilize; or, if not, they may expect support to come from Computer Support Services. Occasionally, the users' current hardware will not support their newly purchased software packages. In addition, software patches and upgrades are continually becoming available and need to be installed District-wide.

The District has consolidated the inventory process for software. Since Computer Support Services is ultimately responsible for the acquisition, installation and support of all software throughout the District, the responsibility for inventory and tracking software resides in that department. Funding that was initially allocated to

various instructional and support departments for the procurement of software has been consolidated under Computer Support Services to assure that all possible discounts are received, software purchased is supported and that the funding is not reallocated to a different purpose.

Computer Support Services in consultation with the Technology Committee has developed a list of District provided software. The list includes but is not limited to the following:

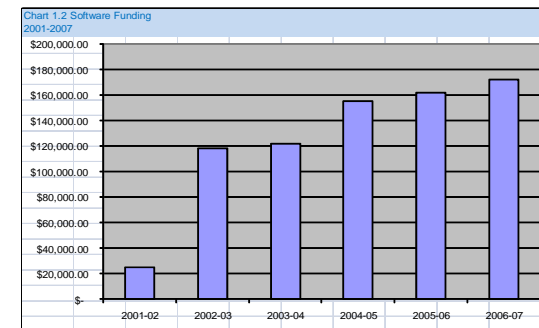
- MS Windows XP and greater
- Macintosh OS 10 and greater
- MS Office 2003 and greater
- MS FrontPage
- Norton Antivirus
- MS Outlook
- MicroGrade/Webgrade
- MathType
- Adobe Acrobat Reader
- Internet Explorer
- Datatel

Most of these programs are provided (some from a centralized District budget) to all District end-users. In addition, the District provides software for computer labs used for instruction. A detailed list of provided software is included in the appendix. These lists are evaluated annually and changed to represent current educational and business trends in software applications.

Recommendations:

The District has made great strides in the procurement and tracking of computer software. Going forward, the District should explore server based licensing that would allow Computer Support to deliver application software on demand to computers throughout the District while maintaining compliance through the use of a license server. This would reduce our software costs by reducing the number of copies purchased but making them available to more areas. Chart 1.2 illustrates the growth in funding for software since 2001.

As software applications change so does the need for support. The District must continue to support the training of Computer Support Services and other staff to properly provide support for these applications. Further, additional positions should be added as necessary to ensure the level of support is not compromised as the number of supported application programs and the overall end-user base increases.



Similar to computer hardware, software is constantly evolving and changing. Funds should be allocated to purchase new software that can be evaluated by faculty and staff for possible inclusion in our supported software list. On-site evaluations allow for the greatest number of evaluators and properly assess its value to the institution.

MULTIMEDIA

Background:

The term “multimedia” has evolved over the years to mean different things to different people. Some see multimedia as animation, light shows, and high-quality graphics projected on a screen. Education sees multimedia as a medium that instructors can utilize to effectively teach their students with real-time Internet access, PowerPoint presentations, videos and sound. A multimedia classroom is a classroom in which instruction is disseminated in more than one form including text, audio, graphics, animation, CD-Rom, video conferencing, full-motion video, the Internet and satellite connectivity.

The term “Smart Classroom” came about as educational institutions attempted to keep up with technological changes by creating multimedia classrooms. Rooms were designated as “Smart” if they contained a computer with Internet access, a projection system, and audio capabilities.

Current Environment:

The District has embraced the idea of smart classrooms with the creation of two lecture halls with the capabilities mentioned above. L105 was the first to come on-line prior to 1996, due in part to the early adopters of technology on campus. M318 was part of the Media Arts building project. Both rooms are equipped with a computer for the instructor, Internet access, projection systems, a sound system, and the ability to play different media ranging from videotape to DVD.

As the need for technology in the classroom has grown, the District has attempted to keep pace with the creation of multimedia carts. These carts are available through Audio/Visual and provide instructions with a computer, Internet access, a projection system and sound.

Currently, both Audio/Visual and the Interim University Center maintain multimedia carts for checkout. In addition, multimedia carts have been assigned to certain classrooms and meeting spaces based on use. Computer Support Services provides PC and Macintosh laptops for checkout to faculty and staff. The majority of classrooms on campus are equipped with Internet access and all multimedia carts and laptops are Internet ready.

Recommendations:

The District’s use of multimedia is constantly evolving and changing. While we currently have two “authentic” multimedia classrooms, student computer labs and a number of traditional

classrooms have equipment installed that meets the majority of the requirements for a smart classroom. The Chancellor’s Office has provided the following sample configuration for multimedia classrooms:

- Projection unit ceiling mounted
- High-quality speakers with an audio mixing panel
- Large projection screen
- Computer system
- Specialized lighting
- VCR and/or DVD player
- Document Camera

As the District renovates, upgrades, and constructs both new traditional classrooms and computer labs, we should invest in the equipment necessary to create additional multimedia classrooms and updating existing locations. The Chancellor’s Office recommendation for the number of multimedia classrooms a District should maintain based on 10,000 FTES is 15 or one classroom for every 667 FTES.

The multimedia carts, projectors and laptops are additional ways the District could achieve this goal. Those carts and equipment allow an instructor to transform a traditional classroom into a room with advanced technology. Multimedia carts work well in small rooms where a mounted projector and special lighting is neither affordable nor warranted. Ensuring that all current and future classrooms are wired for Internet access is essential to promoting the use of technology in the classroom.

Podcasting, videos, videoconferences and video streaming are becoming increasingly popular and could be an effective augmentation to the traditional classroom delivery methods. The District should continue to research these and other similar technologies in an effort to increase the tools available to instructors in the classroom. Proper funding and adequate staffing is necessary to ensure successful implementation of these functions.

With the growth of audio visual equipment located in classrooms, the District should pursue a system where the staff of Audio/Visual could remotely control the systems and monitor the status of the equipment. In addition, permanent control units should be installed in each room with projection systems to eliminate the need for hand held remote controls that are easily lost and broken. These control units should be standardized across the District to reduce the training necessary to operate the equipment.

Audio/Visual's budget should be augmented to cover the cost of replacement bulbs for both overhead and LCD projectors. Currently, individual departments are responsible for funding replacement bulbs and Audio Visual contributes as their budget allows.

NETWORK INFRASTRUCTURE

Background:

A telecommunication infrastructure is a combination of physical connections, hardware, and software that provide for the

transmission and reception of voice, data, and video information and services. Planning for expansion of the telecommunication network is critical if the District continues to grow in both technology and facilities. A strong telecommunications infrastructure is essential to ensure that students and faculty have the best opportunities available for teaching and learning and that staff has the latest in technology to help streamline the administrative process.



Current Environment:

The District's telecommunications network is separated into voice, data, and video. Each currently operates an autonomous unit with the capability of future integration.

The data network consists of two Main Distribution Frames (MDF), providing the backbone for a Gigabit Ethernet network. Internet access is provided via a full bandwidth DS-3 connection accessed from CENIC. The network encompasses all of the primary and ancillary buildings on campus (with the exception of the stadium) and totals over ninety pieces of network equipment. Connection between the buildings is established through Multimode ABF (Air Blown Fiber) and category 5 cabling is used within the buildings to provide connectivity to end-user locations. Data lines and Internet access are provided to all student labs, faculty, and staff work locations, and approximately 99 percent of the traditional classrooms on campus. A Fortinet firewall, Intrusion Prevention System and Spam Filter are in place to protect the systems from outside intrusion and virtual LANs are used within the campus to segment the student access machines from those used by employees.

To ensure reliability of the data network, battery backups were installed in key locations including network closets and the main server room to reduce downtime in the event of a power outage. The campus network backbone and all related network equipment necessary to maintain either online or telephone registration functions are attached to battery backups that will provide four-to-six hours of uninterrupted run time. Barring a catastrophic event, this system should be sufficient to outlast any planned or unplanned power interruptions in the future.

A video network is available for teleconferencing by request throughout the Valencia campus. The District's DS-3 communications line provides videoconference connectivity to the Interactive Television Classroom (I-110) and the Interim University Center. However, since the videoconference system now runs through the campus network, we can provide videoconference service to any room on campus that has a data jack. In addition, ISDN lines are available in I-110, the Library's teleconferencing room and public gallery for backup support of the videoconference system.

The District's voice system infrastructure consists of a 2400 IMX-stacked switch with a Repartee voicemail system. The voicemail system is incorporated into each full-time end-user's work location. The voicemail system has several advanced features including fax-on-demand, selective greetings and phone trees. The campus receives phone service via two T-1 lines used for both inbound and outbound trunks. 2000 DID (Direct Inward Dialing) lines are in place to allow direct calling of extensions from off-campus bypassing both the main number and switchboard. Local- and long-distance service is provided through Paytec Incorporated.

The phone system is connected to the campus generator, and the voicemail system is connected to a battery backup unit. This generator should keep the phone system running indefinitely and the backup will maintain the voicemail system for up to 12 hours, depending on the system load.

Backups of the telephone system settings are done weekly by backing up the settings to the campus network and then the backups are transferred to tape.

One Telecommunications Technician supports the District's voice network and the cabling infrastructure for data. The Technician works out of the Facilities Department in close coordination with the members of the Computer Support Services staff. The Technician manages the PBX system through a PC interface and emulator.



Recommendations:

The future of the District's telecommunications network should be to continue support of the College's mission by providing opportunities for teaching and learning with access to the voice, video, and data network (including Internet access and the latest technologies), not only at the main College of the Canyons site, but at any and all off-site locations owned or leased by the District.

To support the increased number of online class offerings and distance education, the District's data network should be expanded to accommodate new technologies including speeds of ten gigabit and faster. The District's Wireless network should be expanded to include all areas of the campus.

Connectivity to off-site locations that support Allied Health, Biotech, the Small Business Development Center, and our Center for Applied Competitive Technologies should be evaluated and considered for connection to the Valencia campus by point-to-point T1. This would allow those employees stationed at those locations to access District Resources as if they were on the campus. In addition, the T-1 line could support voice connections to the district's PBX and voicemail systems, eliminating the need for separate phone systems at those locations.

The Canyon Country Educational Center will be opening during the 2007 calendar year. Connectivity to this center should be accomplished in several different ways.

Our pilot program at Canyon Country Access (CCA) has proven that a single T-1 line for both data and voice is both slow and insufficient to support the needs of a larger center. To that end, the District should investigate separate T-1 lines for voice and data transfer between the new Canyon Country Center and the Valencia campus. In addition, a separate connection to the Internet (T-1 or partial DS-3) should be established at the Educational Center to alleviate the data traffic at the Valencia campus and provide redundancy should either campus experience a loss of Internet access.

A Virtual Private Network (VPN) solution should be investigated to allow employees access to District electronic resources from off-campus. The current system of firewall access or dial-in access is slow and does not provide the access that a VPN setup would offer.

The voice network on the College of the Canyons campus is sufficient to accommodate growth on campus and other off-site locations. However, should newer hardware become available that would increase the functionality of the telephone system, it should warrant consideration over expansion of the current system. The District should purchase the software and hardware necessary to integrate the District email system with the Voicemail system. This integration would allow for email messages to be converted to voicemail and voicemail messages to text-based email.

Based on the current growth of the District and the Santa Clarita Valley, a Proctor E911 system should be deployed to accommodate the emergency 911 systems. Currently, all calls to 911 from within the campus display the main campus address. A Proctor E911 system will provide the 911 operators with location specific information on the caller so that response time by emergency services could be reduced.

As the system grows, the District should investigate expanding the use of the generator to include the voicemail system and the servers maintained by computer Support. The generator could provide lasting power to the systems in the event that power to the campus could not be restored in a timely manner. Otherwise, after the battery backup is expended on the current system, all voicemail boxes and other District Data resources would be inaccessible and the District would have to rely on dedicated telephone lines for communication.

ELECTRONIC MAIL

Background:

The use of electronic mail (email) as a means of communications has expanded rapidly over the last decade. Electronic mail allows for the efficient exchange of information regardless of the distance between the parties. It has become a collaborative tool that allows colleagues to stay in touch and teachers and students to easily communicate. It is also an excellent way to provide information to large groups

of people such as the employees within the District.

Current Environment:

District email is provided using Microsoft Exchange server with Microsoft Outlook or Entourage clients. All full-time faculty and staff have Outlook mail accounts and access is provided for adjunct faculty and part-time employees when requested.

Microsoft Outlook for the PC and Entourage for the Macintosh are the supported email clients for the District. Outlook seamlessly integrates with Exchange and provides greater functionality than other programs with collaboration options, calendar, contacts, and tasks. In addition, the Computer Support Services staff has deployed a Web client for Outlook that allows an employee with an email account to check their mail anywhere in the world that has an Internet connection.

The College email system is setup with a domain name of "canyons.edu". A standard naming convention for all users has been established as first name last name with a period separating the two (example john.smith). This naming convention differs slightly from the logon for the new student information system (Datatel) and the District's network logon.

Each user is provided with 65MB of disk space for their email account. This space is used to store calendar items, contacts and email. Requests for increases in

storage space are made to the Director of Computer Support Services.

The District has adopted policies for acceptable use of the District's computing facilities. Currently, there is a policy governing use of computers by students and another similar policy for staff. These policies were strong first steps in providing guidelines and structure for overall use of computing resources and should be reviewed on a regular basis. A copy of the current policies is located in Appendix A.

Recommendations:

The District should pursue the option of integrating the voicemail and email systems. Microsoft Exchange has the functionality to integrate with current voicemail system to allow a voice message to be converted to text and an email message to be retrieved through voicemail. This would increase the functionality of both systems and provide added benefits to all employees.

The current naming convention for email accounts differs from a user's network logon and their Datatel username. The Technology Committee should develop and discuss alternate naming conventions for accessing all electronic resources that would eliminate the confusion.

The District should look at housing an additional email server at the Canyon Country Education Center to be used in case of power loss or server failure at the Valencia campus. Replication of data

could be performed on a regular basis to keep both systems current.

TECHNICAL SUPPORT

Background:

Prior to 1997, technical support for the District was primarily outsourced or handled by a single computer operator in the Computer Center. The District's technology consisted of roughly 325 stand-alone computer systems; a dozen "dumb" terminals, one administrative server and limited T-1 access to administrative areas. The District's administrative computer system was maintained by one computer operator, an assistant manager, who doubled as a programmer, and the Computer Center Director.

Current Environment:

Since 1997, both Computer Support Services and MIS have added additional staff to address the growing need for technical support within the district. As of July 2006, Computer Support maintained a staff of 8 FTE including a Director, Assistant Director, Online Services Technician, Help Desk Specialist, 2 Technicians and 2 Coordinators. MIS maintained a staff of 8 FTE including a Director, Programmer/Analyst, Web Programmer/Analyst, 2 Associate Programmers, Software Coordinator, Technician and an MIS Specialist.

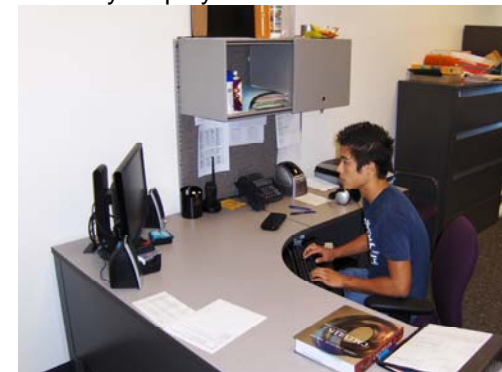
The MIS department currently has 2 vacant positions; A Programmer/Analyst and a Technician. Computer Support has

recently been approved to hire two 60% Technicians for the Valencia campus and one full-time technician for the Canyon Country Educational Center during the 06/07 fiscal year. A current organizational chart is included in the Appendix.

Recommendations:

The District should follow the Chancellor's Office recommendation and adopt a Total Cost of Ownership (TCO) approach to Technical Support staffing. TCO examines technology purchases not only in terms of capital outlay but also in the staff resources necessary to maintain that equipment.

The Chancellor's Office commissioned a study on TCO in 2000 which resulted in staffing recommendations for Technical Support positions based on the technology they were required to support. Their results are listed in the table below and as an example assumes that there should be one technician for every 150 computers supported. Based on our current inventory of over 1800 workstations, that equates to more than 12 technicians. The district currently employs four.



Position	Assumptions
Technical Management	1 Staff per 500 Computers
Web Administration	1 Staff per 12,000 FTES
Technical Support Staff	1 Staff per 150 Computers
Network Technical Support	1 Staff
Application Development	2 Staff
Network Systems Admin and Wiring	1 Staff per 300 Computers

In order to properly support the current and future technology both at the Valencia campus and other District locations, the District should work towards the following staffing levels in the Technology areas:

- Technical Management:
 - MIS: The addition of an Assistant Director or Project Manager to share the day-to-day responsibilities of the department.
 - Computer Support: An additional Assistant Director or Supervisor responsible for technical support to assist in the coordination of support activities.
- Technical Support Staff:

- MIS: One additional technician over the next 5 years to provide support to end users.
- Computer Support: Three additional technicians over the next 5 years to support the increase in technology brought on by enrollment growth and the opening of new buildings and off-site locations.
- Network Technical Support
 - Computer Support: A Systems Administrator to maintain over 25 servers and a Network Technician to oversee network upgrades and security.
- Applications Development:
 - MIS: The addition of 1 programmer to handle the increased load associated with a growing District with information needs.
 - Computer Support: A Web Programmer who would work with District employees to develop web applications and a Web Developer to assist in the development and maintenance of content on the website.
- Network Systems Admin and Wiring:
 - Computer Support: 1-2 Network Technicians to pull cable and maintain the cabling infrastructure of the District.

These additional positions will allow the District to adopt new technology as it becomes available, provide support for faculty and staff in integrating technology into their curriculum, and provide security and stability to the Districts technology infrastructure. In addition, with the growth of online courses, the District should investigate 24 hour technical support for both students and faculty. Students who enroll in online courses tend to work on their assignments in the evening and early mornings. 24 hour technical support would allow the student's to resolve any technical issues and provide an after-hours resource to our online population.

BACKUP PROCEDURES AND DISASTER RECOVERY

Background:

The District's technology group is separated into two departments, MIS and Computer Support Services (CSS). Each group operates autonomously from one another with MIS supporting the campus relational database and Computer Support Services providing hardware, software and network support for the entire campus.

Current Environment:

Computer Support Services and MIS have been combined under the Institutional Development and Technology department. This realignment allows for greater collaboration between the two groups and creates a more centralized information technology infrastructure.

Computer Support Services maintains and operates over fifty servers (See Appendix for list of current servers). These servers provide services to the campus from Internet access to email and file sharing. CSS utilizes an automated backup system to archive the data on its servers. This automated backup runs an incremental backup of all the servers nightly with a full backup run over the weekend. The first, full backup of each month is removed from the campus and stored at the residence of the Director. Subsequent incremental and full backups are housed within the CSS office. Full backups are maintained for a maximum of 90 days.

MIS maintains and operates two servers. CISAR, which is the District's primary server for student information, human resources and financial services and EPOS which provides touch-tone registration to students. A full backup is run on CISAR each weeknight with special archive backups run before any major system change. Two bootable Ignite tapes (tapes used with Hewlett Packard Ignite system) are made after the system's kernel is regenerated. The EPOS system is backed up approximately once a month with special archival backups performed prior to any major upgrades.

Backup tapes are stored daily in the Admissions and Records vault. The full backup that runs Friday night is stored at the residence of the Director or the Vice President of Institutional Development and Technology. Full backups are maintained for a period of 30 days with some "select"

backups maintained indefinitely depending on the content of the backup or legislative mandate.

Recommendations:

The District should investigate the possibility of an off-site system as part of a disaster recovery plan. In the event that a situation arises that cripples the District's ability to conduct business and cannot be restored in a timely manner, the off-site system could be set up to provide computing resources that would allow for a minimal operating environment. This would ensure that basic registration and business services functions could continue until such time as the District's facilities and resources are available. Another alternative would be to establish a failover system at the new Canyon Country center. This could provide basic system access should the Valencia campus be unavailable. Additionally, a paper copy containing the current contact information for all students and employees should be available and secured in a safe location should the need to contact some or all of our students and employees arise and electronic communication systems are unavailable.

Both MIS and Computer Support should evaluate their current backup strategy and tape retention policy. In some areas, data may need to be stored for a longer period of time. In addition, as the amount of data that needs to be backed up grows, both areas will need to invest in faster backup technologies including tape and disk to tape solutions.

The tapes from server backup for both MIS and Computer Support should be stored at a secure off-site location. Several vendors offer pick up and drop off service for a nominal cost. Storage off-site would protect the data and insure the integrity of the information.

As more and more information is stored electronically on individual computer systems, a desktop backup solution should be investigated to backup specific folders on an individual's computer system to protect the availability and security of District data.

ACCESSIBILITY AND ASSISTIVE TECHNOLOGY

Background:

The District's population of students requiring assistive technology has grown dramatically over the last ten years. Disabled Students Programs and Services (DSP&S) has been able to meet the needs of this population through its "High Tech Lab". The High Tech Computer Lab consists of 16 computers, 2 printers, 5 scanners, and software to assist people with visual or hearing impairments. The staff of DSP&S provides support services to those students with disabilities to assist them in effectively completing their educational goals. DSP&S enrollment has risen by 72% since 2001. The DSP&S Department has taken great strides to ensure the District is in compliance with Section 508 of the Americans with Disabilities Act, a federal and state law

requiring, among other things that all electronic information created, maintained, or deployed by the District to be accessible. The DSP&S Department has created and filled the position of Access Coordinator, maintains staff trained to assist students with disabilities, and holds trainings for faculty and staff regarding Section 508 compliance and other disability issues to increase awareness within the District.

Current Environment:

College of the Canyons is growing rapidly. We are growing and expanding our campus as well as building a new satellite campus. The District also has a third campus that is growing at a rapid pace. This third campus is made up of our online education courses, and as this appears to be a large part of the future of education, special attention needs to be focused now on accessibility requirements, particularly captioning and alternate media.

Currently, the majority of the students with disabilities who take classes within the District receive services and support through the DSP&S Program, although students with disabilities are not required to enroll in the DSP&S program or accept DSP&S services. Standardized Access Stations have been made available in many computer labs on campus to ensure accessibility in terms of facilities, furniture, and computer stations. Standardized access stations include: 19" flat panel display, adjustable desk that raises and lowers, speakers, headphones, trackball

mouse, natural keyboard and assistive software.

Special TTY phones are available in the Administration building, DSP&S, and Facilities for hearing-impaired students and staff. The District maintains two Braille printers, a document reader, scanners, and assistive auditory devices. The District also maintains screen reading software, voice recognition software, text to speech software, screen magnification software, and text grabbing software to accommodate a certain population of the District. In addition, the Windows operating system provides the ability to adjust screen colors and resolution, as well as font size and contrast, with accessible web browsers such as Opera and Mozilla Firefox to provide access to visually-impaired users. The District also maintains Macintosh computers and Macintosh computer labs, which feature built in accessibility options such as zoom, keyboard navigation, sticky keys, speech recognition, and visual alerts.

The staff of the District's DSP&S Lab is trained on the proper use of assistive technology and provides information when needed to other faculty and staff. Trainings for faculty and staff are held throughout the year and cover a variety of topics including Section 508, Accessible PowerPoint, Disability Etiquette, and other topics that cover accessibility within the District.

Recommendations:

The District is progressing rapidly in support of assistive technology and people

with disabilities. In particular, Section 508 and Online Education are a focus for training to ensure proper implementation and accessibility. In this regard, the District needs to ensure that all online courses and materials are accessible according to section 508 guidelines (Section 508 of the Rehabilitation Act of 1973), including the District's web page. The District should also continue to focus on accessibility and Section 508 compliance in traditional classes. The District should plan to:

- Create a system that will accomplish the daily captioning needs of the District's Online and Distance Education programs.
- Ensure accessible technology is annually inventoried and updated when necessary.
- Create a culture of disability awareness and understanding by conducting training workshops regarding disability issues.
- Provide an access station in every student computer lab that includes: 19' flat panel display, adjustable desk that raises/lowers speakers, headphones, trackball mouse, and assistive software.
- Create a position or assign to a current position official duties of ergonomic and accessibility counseling for Faculty and Staff.
- Create an Alternate Media Production Specialist position to fulfill the District's growing captioning and alternate text needs.

- Replace all third party, non accessible service machines (Ex. ATMs, Phones, and any third party electronic devices) with accessible service machines.
- Create and maintain a book creation program to ensure the District will be able to provide books on CD for students and community members with disabilities.
- Create adaptive curriculum in the PE field, consisting of adaptive athletic machines designed specifically for people with disabilities, or courses designed for rehabilitation or general fitness for people with disabilities.
- Ensure accessible, electronic doors are installed in vital areas, such as the Student Health Office, Admissions and Records, Library Services, and Student Services.
- Conduct a semi annual review of the Districts Web Page to ensure compliance with accessibility standards.

DISTANCE LEARNING

Background:

The Distance Learning (DL) program began in the Fall of 1987 with the introduction of College by Television (CTV) courses. The CTV component of the DL program remains largely unchanged since its creation. For the past five years it has offered close to 30 classes in the fall and spring semesters. The first online courses were offered in the spring of 1999.

However, prior to 2000 the use of virtual classrooms and online teaching at College of the Canyons was limited to a few early adopters. These individuals experienced little or no institutional training opportunities in the use of online teaching tools and in online teaching pedagogy. In 2000 College of the Canyons had 14 approved online courses and had 249 students enrolled in online courses. The District did not offer any student technical support.

Current Environment:

In spring 2006, the District had over 100 approved online courses and had 1,688 online students. Since 2000, the college created a Distance Learning webpage and has established a full-time staff member dedicated to updating and revising the page and assisting online faculty and students. The title for this position is: Instructional Media Technician II-Distance Learning. The DL program maintains a comprehensive website that offers a listing of all online courses and online faculty, including faculty orientation letters which provide students with important specifics related to each course. The page also offers a host of useful information, such as online student recommended technology, student self-assessment tools designed to help them determine if online learning is suitable to them, self-paced tutorials on the use of commonly utilized course management systems, and contact information for the Instructional Media Technician II-Distance Learning staff member. The page also provides similar information for students regarding the College by Television program.

In 2000, the District created a Distance Learning Coordinator's position. This individual was responsible for helping to market the DL program to the service area, provide training opportunities for faculty, assist in designing curriculum, supervise the Instructional Media Technician II-Distance Learning staff member, and promote the use of web-based teaching tools across the campus.

In Summer 2006, the district created the administrative position of Dean, Distance Learning Programs and Training. This position supervises a number of instructional delivery methods, beyond distance learning.

The Educational Technology Committee was re-founded in Fall 2001. The Educational Technology Committee has proven an important venue for the development of distance learning in the District. This committee's mission is to set priorities, evaluate faculty needs, and develop policy recommendations regarding online teaching and learning and uses of educational technology. Membership is open to all members of the campus community and is currently comprised of faculty, classified staff, and administrators.

The District has also supported the college's Institute of Teaching and Learning Program, which offers courses in the use of technology in the virtual classroom and in online teaching pedagogy. Faculty who successfully complete one of the IT&L courses can earn salary advancement or FLEX credit. Since

2002, over 120 full and part-time faculty have completed the Institute course “Successful Strategies for Online Teaching and Learning.” The District has created an “Online Instructor Certificate Series” awarded to faculty who complete the following activities: EDU090 Strategies for Success in Online Teaching; Blackboard Training Workshops 1, 2, 3; FrontPage 1 Workshop; Section 508 / Accessibility workshop. The Educational Technology Committee developed and the Academic Senate has adopted an “Instructor Readiness Checklist” to guide faculty seeking experiences to prepare them for teaching online courses and to guide departments in hiring qualified online faculty. Most recently, in Fall 2006, the Academic Senate adopted a set of “Online Instructor Readiness Requirements.”

In 2001 the college purchased an account with Blackboard, a premier course management system. At the beginning of the spring 2006 semester, over 3000 “seats” within the Blackboard virtual classrooms were filled by online students. Retention rates in DL courses are nearly equal to those in traditional formats.

Beginning in Spring 2006, the TLC has provided learning support to students enrolled in distance learning. For students enrolled in online classes, technical support is available via telephone during the normal operating hours of the TLC; email inquiries may be submitted at any time with staff responding during normal operating hours of the TLC. For students enrolled in online English classes, tutoring inquiries may be submitted via email at any

time with staff responding during normal operating hours of the TLC. The TLC Director and Dean of Distance Learning are exploring how to expand tutoring for students enrolled in online classes in other disciplines.

Recommendations:

Based on current trends, the demand for online courses will continue to increase. However, the District should recognize that the online program faces competition for students from other colleges that is uncommon to virtually any other COC program. Online students have a wide variety of opportunities to complete online course work. “Distance,” as we traditionally think of it, is nearly irrelevant to an online student, so too is the notion of geographic or “brand” loyalty. The fact that students in our service area are seeking online courses does not mean they are compelled by traditional external factors—such as location—to seeking them from College of the Canyons. This means that in order to attract online students from its service area, the District will need to effectively market to students a quality DL program that is convenient for students to access and that provides key student support features. In addition to so many other components, part of the college’s marketing strategy should be focused on improving the overall design and information provided at the DL homepage. Increasing the DL program’s visibility on the COC homepage should also be acknowledged and acted upon.

In summer 2006, the District deployed a more sophisticated version of Blackboard, one that offers faculty and administrator more features and that do not have an established seat limit. This means that in the immediate future any COC faculty wishing to utilize a Blackboard shell now can. Promoting the use of Blackboard web classroom tools in non-online courses will generate an overall level of expertise in the use of Blackboard that will help prepare faculty and their students for transitioning to hybrid or fully online courses. As the DL program continues to grow and dependent upon District resources, the college should strive to provide the highest quality course management systems for delivery of online course content. Obviously, with the growth in numbers of faculty utilizing web classrooms, the need for additional faculty training will increase. Dependent upon District resources, it will be helpful to reward expert faculty who lead these workshops with something other than FLEX credit, which is the current practice.

The District should adopt an online instructor guideline policy that more specifically describes the necessary qualifications online faculty should possess prior to teaching online courses and that will guide Human Resources and individual departments as they staff online courses. Additionally, the District should adopt a policy for evaluating online faculty. Procedures should be devised to allow student evaluations of online faculty. The entire evaluation process should be possible in an entirely digital format. Dependent upon the availability of District resources, the college should establish a

student technology support service. Just as importantly, if resources are available for allocation, it should also provide faculty with an in-house resource for help designing online class lessons and more general technology support. Currently, COC faculty must enroll in an IT&L course or FLEX workshop or complete training elsewhere. The District should develop procedures that allow online faculty to complete all required paperwork for the daily operation of their classes from remote locations. Online faculty should not be required to arrive on campus to complete forms related to the teaching of their classes.

In order to ensure that the college fulfills its mission to provide access to all students, the college should offer online students counseling and student services support comparable to that which its on-ground students receive. At some time in the near future, this will need to include 24/7 student technical assistance.

The Institute of Teaching and Learning will continue to develop online teaching courses and other courses useful to online educators.

Due to the ongoing changes inherent to any DL program, the job description for the "Instructional Media Technician II-Distance Learning" should be revised, as deemed necessary by the District.

The position of Instructional Designer/Trainer should be developed to provide support to faculty who teach online. This position would assist with the

development of the online courses and offer training to faculty and staff on hardware and software currently used by the District.

Further, the District must consider how to encourage and support faculty to integrate the evolving array of multi-media delivery options into their courses, ranging from high-quality graphics to webcasting and podcasting. In order for faculty to maintain currency in delivery methods and for the College's instructional programs to remain appealing to prospective students, the District will need to provide substantially expanded training opportunities and incentives and/or to fund a position of instructional designer.

Finally, in order to realize the growth potential in distance learning, the District might consider establishing "COC Online" as an educational center. This COC Online site could provide uniquely branded delivery of the District's instructional programs and serve as a central driver of the following key services:

- Assistance with curriculum and course design
- Faculty and staff development
- Promotion of new teaching technologies
- Promotion of best practices
- Maintenance Web-based destination
- Marketing
- Coordination with student service providers
- Development of procedures and policy recommendations via the

Educational Technology Committee

ONLINE SERVICES

Background:

Online Services offer key resources for students taking both online and on ground classes. It has been the goal of the Student Services division to automate as many of the services we offer as possible. This allows our students to complete the majority of what is necessary to attend College of the Canyons anywhere they have access to the Internet.

If students do not have technology available to them, they are provided with access to the many computer labs found in various locations on campus like the career center, the library and the student services building. Trained staff is available in the labs to answer students' questions on how to access the services needed to complete students' educational goals. In addition, we still offer telephone and in person services for the students not yet comfortable with the web.

Since the last technology master plan was created, we are happy to report the majority of our first time students use the suite of services located on our website to apply for admission to the college, complete an assessment test and orientation, make an appointment with a counselor, determine the classes they wish to complete, register for those classes,

view their financial aid award, pay their fees, and print a receipt.

Students continue to use additional services throughout their tenure at the college as the need arises. Some of these services include dropping classes they no longer wish to attend, changing their email address or phone number, viewing a registration appointment for next term, checking on a pending financial award, enrolling in counseling workshops, applying for a scholarship, exploring a new career option, and printing an unofficial transcript.

In addition to online services for students, we have also created new online services for faculty teaching both online and on ground classes. Faculty can now submit their grades online, access their class roster online, which includes student contact information, and submit actual hours of attendance online. The majority of our faculty members are using online technology for these services.

Staff in student services have completed extensive training in all of the new technologies introduced since the last master plan was completed. We have created full training sessions for new staff, and continue to offer training to existing staff when bringing on new technological features. Staff uses the latest versions of technology to complete their work for students. All full-time staff in student services is hired with expertise in MS Office that includes, Word, Excel, Access and Outlook, as these products are used in their daily work. In addition, new systems

have been instituted to increase work efficiency and reduce the time to produce students' requests for various services.

Communication between student services staff and students and faculty has also changed dramatically since the last plan. Most communication with students and faculty is now completed using email, instead of snail mail. We have also begun using automated call systems (SARS call) for both registration messages as well as counseling messages.

Current Environment:

Admissions & Records:

Admissions & Records has continued to expand its automated offerings to assist students complete their varied transactions online.

- The majority of students now apply for admission online using the CCCApply application. There are 68 other California community colleges also using the same application product. Much of the student information entered into the application for admission will transfer into related CCCApply products like the online Board of Governor Waiver form soon to be implemented in Financial Aid. This will save students a great deal of time not having to re-enter the same information.
- Students use Web Advisor, the online interface provided by Datatel Colleague for the following online services: registration,

payment, search for open classes, grades, changing educational goals, addresses, phone numbers and email addresses, and the newest addition, printing unofficial transcripts.

- Students also have the ability to request enrollment verifications and degree checks using a third party software, Degree Check, purchased from Credentials, Inc. This service allows students to make requests 24 hours per day, 7 days per week to verify enrollment or degree status requested by 3rd party entities like insurance companies or employers, and has eliminated the researching and distribution of this type of information by Admissions & Records staff.
- The degree audit module was built by Admissions & Records staff in Datatel Colleague over four years ago. It took over two years to compile and enter the correction information. The Degree audit module holds requirements for all Associate Degrees offered since 1995. Student coursework is integrated into the Degree Audit computer program to issue an informative report of a student's progress towards degree completion. The degree audit report provides students with information that indicates what classes they have completed towards their chosen academic program, and includes coursework

taken from other colleges and also courses currently in progress here at College of the Canyons. The report also shows students what they still need to complete in order to obtain their Associate degree or certificate.

- In 2005, a document imaging system from Hershey Systems, Inc. was installed that allows electronic record storage and retrieval. The product was purchased as part of a Title 3 grant because the system has an interface to Datatel Colleague. After creating templates for other colleges, the system will allow us to upload academic transcripts scanned in from other colleges directly into a student's course history record. This information would then automatically appear on a student's degree audit report.
- Faculty also use the Web Advisor product to access class rosters, obtain student contact information for their classes, as well as submit their grades and positive attendance online.
- Email has become the main communication mechanism between Admissions & Records and students. Students are now contacted by both email, and automated phone blasts to their cell phones for important information regarding applications status, registration appointments,

and enrollment from waitlists into classes.

- The Admissions & Records website provides information to potential and current students to assist them in all facets of college life, from application for admission and registration to classes, to obtaining grades, relevant academic policies and basic information to assist them to be successful as a student.

Career Center:

The Career Center has developed and implemented many new online services for both students and employers. Students can access the following services depending on their career needs.

- The Career Center has moved the career assessment and exploration program "Discover" from one that could only be accessed on campus to one that students can access anytime, at their convenience, with the online version of "Discover."
- The Job & Career Fairs held twice per year are one of the College's largest events. In past years, job seekers had to stop by the Career Center to pick up the list of employers planning to attend. By making the list available online, job seekers can now see the complete list of attendees as it grows daily. The information is organized in a way that includes the types of jobs employers are hiring for, and links to those employers' websites.

- Students who qualify for Federal Work Study can search for various positions that are posted by on-campus supervisors using the online program that has been developed. The program allows students access to Federal Work Study openings anytime and anywhere they have access to Internet.
- A new online program called, "Perfect Interview" will allow students to practice and fine tune their interviewing skills wherever they have Internet access. A computer station has been setup with a web cam so students can tape and view their progress.

Online services for Employers have also been added to enhance communication and access.

- An online form is available that allows employers to fill out a job order and submit it directly to the Career Center.
- In addition, the Career Center has automated the Job Fair Process, which now permits employers to sign up for the job fair online. Both services significantly cut back on phone calls and faxing of forms.

Counseling Department:

The Counseling Department has expanded its online offerings in the following ways.

- The SARS counseling appointment software was expanded in fall 2005 to include new functionality

called ESARS. This feature of the SARS software allows continuing and returning students to schedule their counseling appointments online up to 10 days in advance, resulting in a reduction of long lines and in-person visits to the Counseling Office. The ESARS feature also includes a new program called SARS CALL, which reminds students by phone of their upcoming counseling appointment. SARS CALL also logs both successful and unsuccessful attempts at contacting students. The goal of SARS CALL is to reduce no-shows for appointments and increase the number of students that counselors see each week.

- Enrollment in counseling workshops is now available online for students for New Student Advisement, Academic CPR and Intensives for students in academic dismissal status.
- Three counseling courses have been created and offered in the last few years. COUNS 070, "Becoming a Successful Distance Learning Student," assists students to acquire the basic skills necessary to be successful in an online environment;" COUNS 111, "Introduction to College and Strategies for Success," is an on ground class being offered online for the first time in Fall 2006. COUNS 085, "Career & Job Search Preparation," takes

students through the exploration and job search process.

- Communication between students and counselors is being handled much more frequently using email than in years past. The Counseling Department website directs students to the ESARS counseling appointment screen, provides information for degree and transfer requirements, and shares helpful related links to assist students to achieve their academic goals.

Financial Aid:

Since the last technology master plan, the Financial Aid Office has completed and implemented these milestone technological projects.

- An online scholarship application process, which collects student information electronically, was launched in 2001-2002. As a result, the Financial Aid Office staff has been able to match students to the scholarships that they qualify for, rather than have students choose the scholarships for which they think they might be eligible. The new data collection process increased the number of candidates available for a particular scholarship, and thus, provides more opportunities to give money to students.
- Collecting student data electronically for the scholarship application led to a natural extension that could include a

mechanism for the scholarship committee members to evaluate and rank the candidates for each scholarship. The process was implemented in 2002-2003, and has streamlined the screening process so that it can be completed in a much reduced period of time, thus making it easier for committee members to participate.

- In 2003-2004, online registration for student loan workshops was implemented. The new registration process allows students the ease of registering from home, saves staff time from fielding phone calls and entering data, and because of the data integrity checks implemented in the program, ensures only eligible students are registered in the workshop.
- In addition, the following improvements have been made to the Financial Aid website. The website provides helpful information regarding financial aid eligibility, the cost of attending college, the grants, waivers, loans and awards available, how to apply for financial aid, a link to the online federal financial aid application (FAFSA), standards of progress to maintain financial aid awards, a Frequently Asked Questions section, and links to other relevant financial websites.

- As of this year, Financial Aid has a section added to the Web Advisor menu in Datatel Colleague, where students can view their financial aid by year or term, their award letter, the documents they have submitted so far for a pending award, and other financial aid forms.

Matriculation:

The matriculation program uses the following technological systems to assist students.

- Accuplacer, the Computerized Placement Tests (CPTs), that new students take prior to registration, was developed by the College Board to provide information about the level of skill in reading, writing, and mathematics that is required for success in college. By assessing students' ability in these areas, Accuplacer helps to determine the reading, writing and mathematics courses most appropriate for each individual student.
- A new state of the art online Orientation was launched for students in spring 2006. The purpose of the orientation is to give students an introduction to our excellent teaching faculty and the wide variety of courses we have, inform them of the resources available to them, and teach them how to set up their classes for the next term.

- In fall 2006, online registration through the counseling website was implemented for COUNS 090, an in person advisement course. The course expands the information students receive by completing the online orientation.

Student Development

The photo identification card system was moved from a stand alone computer system to a dedicated server with data backed up on a regular basis to provide an improved level of security for students' personal information stored there.

Recommendations:

The following recommendations should be considered as potential new modes of technology to the online services areas:

Admissions & Records:

- Create a user friendly online version of the degree audit report for students to access on Web Advisor using Title 3 funds. Counseling & Admissions & Records staff will work together on report specifications.
- Research the feasibility of creating a process for faculty to drop students from their classes online. This would need to include all education code requirements regarding deadline dates as well as checks and balances necessary for accuracy when creating the programming to accomplish this task.

- Research the possibility of an Online Transcript Request system that would allow students to order and pay for official transcripts online.
- Research the possibility of transmitting official transcripts to other colleges using Electronic Data Interchange standards (EDI).
- Provide a computer lab in the Admissions & Records lobby for students.
- Research and consider a formal document hierarchy and an associated plan for implementation to scan over 3 million paper student records into the Hershey System document imaging system.

Career Center:

- Consider the likelihood of creating a Student Employment Matching system. Ideally, consider a database where on campus supervisors could post available positions, and students could post their interests and qualifications. Career Center staff would then match the qualifications with the supervisor's needs for the best match, based on actual skills and interests. This process is currently done manually by Career Center staff trying to match job postings with student skill levels.
- Investigate the possibility of placing their current in-house job database, or a modified version of the database online, while protecting local employers from a barrage of direct calls.

- With the addition of Career Advisors in the Career Center, consider using the SARS appointment program for student notes and progress.

Counseling:

- Research of the feasibility of allowing new students to access the current ESARS program to make counseling appointments.
- Create a user friendly online version of the Student Education Plan currently created manually on a paper-and-pencil form by a counselor for a student. The Student Education Plan provides a semester by semester planning tool outlining all the courses a student will need to complete their educational goals.
- Pursue an online counseling program for student appointments. The description, goals, and format of this service will be developed in conjunction with the anticipated revision of the Standards of Practice for California Community College Counseling Programs, which will include “online counseling” as a service component of a counseling department.
- Consider converting the popular “How To Choose My Classes” workshop to an online format. The online version would allow for teaching the basics of educational planning to students unable to take an on ground course.

- Expand online Counseling course offerings.

Financial Aid:

- Create an online version of the Board of Governor’s Fee Waiver (BOGW) form using CCC Apply so that information supplied by students on their admission application can be auto filled into the BOGW form. After meeting certain criteria, many students apply for this financial aid waiver program, which pays for certain levels of student fees.
- Consider expanding the number of financial aid forms available for students to complete and submit online.
- Automatically email every student’s financial aid award letter annually the amount and types of aid available for the student as a result of submitting their FAFSA application and other appropriate documents.

Health & Wellness Center:

- Consider an adaptation of the SARS counseling program for students who need to make medical appointments in the Health and Wellness Center. This would eliminate the current paper-and-pencil system in place.

International Students:

- A library of former students could be organized by the first semester and year of attendance at the

College and filed electronically. This would allow improved communication with international student alumni, which in turn, would strengthen the programs connections.

Matriculation:

- Research the possibility of creating a Virtual Learning Lab for students. An interactive website could be designed to teach students how to learn. One cluster could address how to become an efficient online learner, another cluster of topics might attend to in-depth learning strategies, and another series might target how to succeed in the field of health sciences. Each cluster should have at least one or two ½ hour interactive video tutorials. The Virtual Learning lab could be designed as an organic product that would expand and grow. Future segments might include a library of tutorials designed by faculty, a place for online counseling, and a news or current information section.

Student Development:

- Determine the viability of upgrading the software and hardware of the current photo identification program and ensure the same services are offered at Canyon Country Educational Center and that the same students’ data can be accessed on both campuses.

- Consider upgrading the current photo identification card to “smart card” technology that allows students to attach funds to their identification card that could be used to pay fees at various venues across campus like the cafeteria, the library copy machines, the bookstore, the coffee cart and other like services.

WEB SITE ACCESS AND DEVELOPMENT

Background:

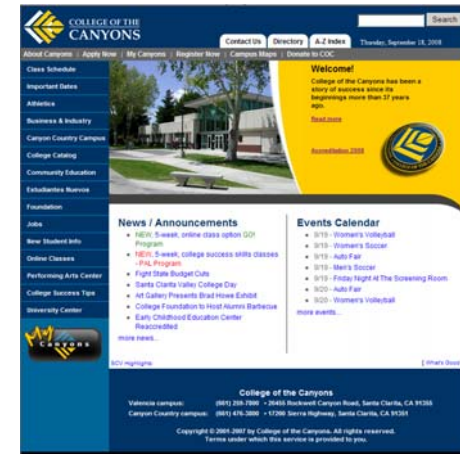
The World Wide Web (WWW) serves as a medium to distribute and gather information to and from audiences at the College, in our community and around the world. Due to the widespread utilization of the “Web” by the community at large and the low cost of implementation, the web server provides an extremely high return on investment when used as a marketing tool. In addition to marketing, the web server is used to provide information exchange and online registration for students and information collaboration among employees. To this extent, the web server has served as a tool for converting existing “paper” processes to “paper-less” processes and saving the district untold expenses in printing.

The District began its World Wide Web (WWW) presence utilizing the Internet Service Provider (ISP) Santa Clarita Valley NET (SCVNET). Then in 1996, the District began to host its web site internally using a Macintosh LC575 with support from

Marilyn Todd (Design Team), Sue Bozman (PIO) and Doug Forbes (Electronics). In 1997 the District web site was relocated to a Digital Electronics Corporation (DEC) Alpha system running Windows NT 4.0 and Internet Information Server 3.0, in order to provide true server support and 24x7 system uptime. At this point in time, responsibility for the maintenance and upkeep of the server was transferred to the newly formed Computer Support Services. Finally, in 1998, the District purchased a Micron NetFrame 6201 running Windows NT 4.0 and Internet Information Services 4.0 in order to serve as a dedicated web server. This server has been serving as the acting web server of the District for seven years and is still running.

Current Environment:

The District, utilizing Microsoft Internet Information Server 4.0 running on a single server, provides WWW hosting services. WWW browse access is provided to District employees, students and community members. Authoring access to create web sites on the web server is provided to all faculty, academic departments, administrative offices and several special purpose groups using File Transfer Protocol (FTP), Microsoft FrontPage and Local Area Network (LAN) access.



The District’s WWW Uniform Resource Locator (URL) or web address is currently <http://www.coc.cc.ca.us> which is provided by the California Chancellor’s Office. In addition, the District opted to register the address <http://www.canyons.edu> for simplicity and chooses to promote this address as its primary.

A basic naming convention has been established for web addresses for all administrative “offices”, academic “departments” and individual faculty web sites (“users”). The web address convention for the academic departments is in the form of <http://www.canyons.edu/departments/> + department abbreviation as listed in the class schedule. For example, the web address for Anthropology would be <http://www.canyons.edu/departments/antho/>. The web address convention for the faculty web sites is in the form of <http://www.canyons.edu/users/> + the last name of the instructor concatenated with

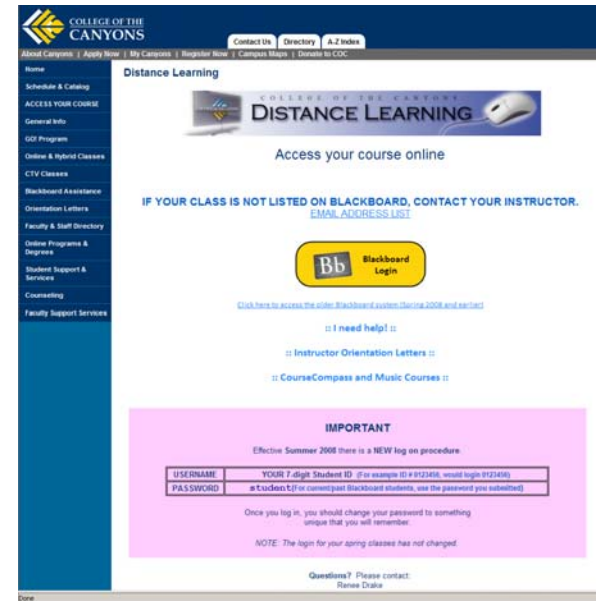
the first letter of their first name. For example, the web address of the faculty member John Doe would be <http://www.canyons.edu/users/doej/>. The web address convention for the administrative offices is not quite as refined as the others but it is generally in the form of <http://www.canyons.edu/offices/> + the name of the administrative office with no spaces. For example, the web address for the Civic Center would be <http://www.canyons.edu/offices/CivicCenter/>. There is no established convention for web address of special purpose web sites that do not belong to any particular office or department and are therefore unique.

In addition to the standard web addresses, a simplified address convention has been established for simplicity and marketing promotions. The general form of this convention is <http://www.canyons.edu/> + [department abbreviation as listed in class schedule] [the name of the administrative office with no spaces] [the promotional title]. For example, the simplified URL for the Anthropology department would be <http://www.canyons.edu/anthro/> and the simplified URL for the Civic Center would be <http://www.canyons.edu/CivicCenter/>. Several promotional URLs were established for marketing purposes. For example, <http://www.canyons.edu/Money4College/> directs the user to the Financial Aid office.

In addition to the main web server, the District has opted to add additional web servers to provide a variety of web services to the College. These services include online course management, online

registration and bill paying, online grade reporting and roster generation, online curriculum management, an online work order system for Facilities and limited web hosting for students. By providing dedicated servers for each of these services, the stability of each service is not dependent on another service and therefore the overall stability and reliability of the services is increased.

<http://bb.canyons.edu/>
College of the Canyons offers many courses in various online formats. Some of the course material is provided as web pages on the main web server, but a large majority of the courses are provided on a separate Course Management System (CMS) server. The District has been piloting its online course offering through the use of a third party provider known as the California Virtual College (CVC) for three years. The CVC provided hosting services which offset the cost to the College. Now that the District's online program has taken off and expanded, it has reached a point at which the CVC can no longer provide hosting services and thus the College has invested in purchasing a new server in order to provide this support. This server is a Gateway 9515 series 2U server running Microsoft Windows Advanced Server 2003 and Blackboard CMS 6.3.1.374.



<http://os.canyons.edu/>
Online registration and bill paying has become a standard service that colleges provide to their students. College of the Canyons provides this service using a Gateway 9315 series 1U server running Microsoft Advanced Server 2003 and Datatel's WebAdvisor 2.16 suite. In addition to registration and paying their registration fees online, students are also able to get their Student ID number, change their educational goal, change their email address on file with the College and retrieve their unofficial transcript.

<http://wa.canyons.edu/>
To simplify end of year grade submission for faculty, the College provides a Gateway 9315 series 1U server running Microsoft Advanced Server 2003 and Datatel's Web Advisor suite. In addition to submitting

their grades, faculty is also able to discover their user ID, generate rosters for their classes and download those rosters in order to import the data into Micrograde, a popular grading software package.

<http://webcms.canyons.edu/>

Curriculum management has long been a convoluted “paper” process of submitting proposals up through a hierarchy of levels for approval and back down through the hierarchy for revision. This entire “paper” process has been converted to an online system called Web Curriculum Management System (WebCMS). By providing this service online, the process is much more manageable as there are no papers to lose and nobody has to remember who the documents should go to next. As an added benefit, having the final, approved course curriculum content online allows the College to provide this information electronically to the public so that other institutions can compare the College’s courses with their own.

<http://tamis.canyons.edu/>

With the increasing size of the campus and the increasing staff in facilities, a better method to assign and track work requests was needed. Tamis, an outside consulting firm was contracted to build a customized web application that would allow employees of the College to submit work requests online and then be able to track those requests themselves.

<http://intrepid.canyons.edu/>

As the College’s Computer Information Technology department expands its offerings, the need arose for the College to

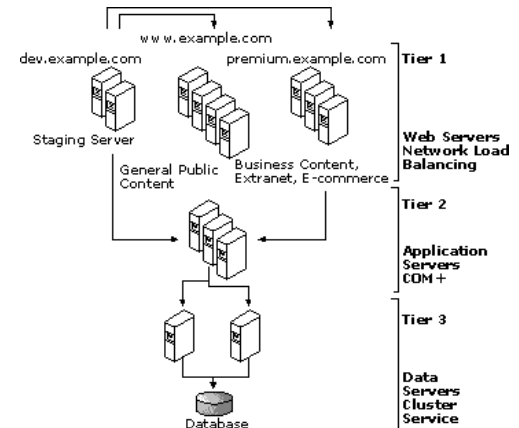
provide web hosting services to students enrolled in web site design courses. To this end, the College provides limited web hosting to only those students enrolled in specific CIT courses. In addition, the web sites are password protected so that the students may not use the server as a general web hosting server.

The District has adopted policies for acceptable use of the District’s computing facilities. All of these web services and the District’s main web server are part of this computing facility and should therefore be considered when making changes or additions to these policies.

Recommendations:

In order to provide reliable, failover service to students, employees and the community at large, the District must invest in clustering servers and redundant, off-campus backup servers. Clustering servers, also known as web farms, is a method of using 2 or more servers to provide the web services. Each server in the farm provides access to the same web services as all the other servers in the farm. Then the network traffic is distributed among all the servers in the farm. This way, if a server in the farm fails or is taken offline for maintenance, the other servers will assume the additional load. Although the utilization of a web farm will protect against a single server failure from crippling the District’s web presence, it will not protect against a complete failure of the

District’s Internet connection. This type of failure is most typically caused by a scheduled or unscheduled campus power outage but could also be caused by a combination of other factors that may be beyond the control of the District. In these sorts of situations, the only possible solution to providing reliable service is to “co-host” a redundant server at an external hosting facility that will automatically assume responsibility for web traffic directed at the District web server when the main web server is not available. It is important to consider all existing web services when considering these types of solutions as any single web service on a dedicated server could be affected by these types of issues. Providing redundancy for one server does not necessarily mean that redundancy is automatic for all servers.



When building a Web cluster, the District should choose three-tier Web architecture (consisting of Web server programs, COM+ applications, and database

applications). The advantage of three-tier architecture is that the following layers can be separated onto different servers, rather than combined on one server:

- Publishing content
- Running applications
- Accessing databases

Currently, the College's web services make use of several SQL database back end services. These services are running on the same server as the web service and are dedicated only to the application for which the server is intended. By utilizing the three-tier Web architecture, these database services could be moved into the third tier, providing better reliability and up-time.

In an effort to increase the stability of the main web server, the District should invest in a staging server in order to provide a method for web authors such as faculty members to upload content changes to their web sites without unintentionally uploading faulty code that could disable the main web site. In addition, by utilizing a staging server, it is possible to implement a screening process by which content changes could be submitted for approval by the author rather than being posted live immediately.

In order to provide better service to our employees, the District should implement the newly released UIWeb from Datatel. UIWeb is a web interface to the District's student information system and as such provides a cross-platform compatible interface that is accessible to employees on and off campus.

With the introduction of online courses, the potential student population for the College is world-wide. However, this is also the same target student population for every other college and university that offers online courses. Therefore, College of the Canyons is in direct competition with those institutions for said students. Since the same online courses and tools that are utilized to offer those courses can potentially be available to all institutions, what will set one institution apart from another will be the services, in addition to the online course, that the institution provides to the online students. These services may include: chat rooms, community discussion forums, student work galleries, online shopping, online internships, etc. The goal should be aimed at giving the online student a real identity so that it provides more of a sense of community. If the District intends to continue to expand its online curriculum and directly compete with these other online institutions, it will be essential to begin developing the infrastructure for these additional services immediately. Eventually even these services will become commonplace on all campuses as the technology becomes more widespread. In order to maintain a competitive edge, College of the Canyons will need to invest in a research and development team that will strive to utilize new technologies and develop new services to provide to the online community.

In the past few years, developing online services has been the major focus of the District's web presence. Due to the

technical demands of these services, the corresponding design efforts have suffered. The design of a web site adds to its credibility and popularity. It has come to the point where the District must focus equal attention, if not more, on the design aspects of its online services. New design possibilities and new technologies should be developed and utilized throughout all services and the main web site.

Technologies include: Cascading Style Sheets, Section 508 and Web Accessibility Initiative design guidelines, etc. Thought should be put into how to best utilize the available tools and a standard convention should be developed so that all services and web sites exhibit a standard design style.

In an effort to further the development of online services, the District must expand its web development team by hiring a web designer and a web programmer. The web designer would be principally responsible for the face or image of the College in relation to its web sites and services. This would include not only the general design of the sites and services but also the organization of its content. The web programmer would be responsible for the construction of back-end processes involved in providing services to the end users. This would include the programmatic processes involved as well as the database integration with Colleague and other databases. These two positions will work together closely in order to develop and offer new services and redesign old services to provide new features and improved design.

TRAINING

Background:

Training in technology was almost non-existent in the eighties and early nineties. Computers represented less than 5 percent of the instructional equipment found on most college campuses. Mainframe systems were widely used and restricted to administrative areas and student services.

Presently, computers and technology can be found in every aspect of education from classroom to laboratories to student orientation. Students' currently taking classes have increased technical sophistication over those just a few short years ago. In some cases, students' technological knowledge even exceeds that of their instructors.

Current Environment:

The District, through the Office of Professional Development, provides support for faculty, staff and managers to receive technology training. The Director of Professional Development, working with three committees representing management, faculty, and classified staff, plans events and advertises upcoming workshops both on- and off-campus.

Workshops are offered in both the spring and fall semesters to provide employees with on-campus instruction in a variety of software programs. These workshops are both one-day and multiple-session courses of varying skill levels and intensity, from a

basic overview of a product's features to a more comprehensive multi-day session where certain components of a program are highlighted and explained in greater detail.

Since faculty has little time during the semester to attend training classes, Professional Development offers a Spring Flex session and a Fall Flex session. The Spring Flex session is held in January before classes resume for the spring, and the Fall Flex session is held before classes begin in August. During FLEX, faculty is provided with a variety of classes hosted by trainers, District staff, and even publishers. These workshops are meant to highlight new technology and give faculty an opportunity to view up-and-coming trends in education.

All offerings through Professional Development are geared to support a broad audience from the technologically challenged to the true "techie".

In 1997, a faculty/staff Technology Center was opened. This center provides a location where employees can receive formalized training as mentioned above, drop-in to "play around" with the equipment and software, or receive one-on-one instruction from a Computer Support Services staff member or Professional Development trainer. The Technology Center maintains the latest in technology both in hardware and software. This allows employees to "test drive" certain application programs, Web sites or computer hardware before implements

new technology in their classroom or work location.

Recommendations:

Computers, the Internet and technology in general continue to be integrated in all aspects of instruction and administrative support. In order to use this technology properly and efficiently, the District needs to provide ongoing training for employees. Technology is constantly changing and it is the District's responsibility to ensure that the faculty and staff are prepared to meet those changes head on. The District must ensure that a balance is maintained between technology-based innovation and traditional forms of instruction.

The District should continue to support the professional development of employees in areas of technology. Professional Development must receive adequate funding to provide technology training opportunities to employees both on-campus and at off-campus. Being able to provide technology is only half the battle. Training people to use it effectively is just as important. In addition, off-campus training provides opportunities for employees to connect and network with colleagues from other institutions in order to share ideas and see how others have integrated technology into their areas.

Technical support staff and Professional Development trainers should be readily available and current on new technology to provide on-demand support to both faculty and staff. Assistance in the development of classes that integrate technology into

curriculum and how to use technology in the classroom is crucial for the success of any technology initiative. A lack of readily available user assistance and technical support is a primary barrier to the successful adoption of new technology.

Technological literacy is a survival skill that is needed by students no matter what field they pursue and by faculty members to ensure that the classes offered meet the demand of today's world and by District employees to keep pace with change.

Learning Resources

Background:

The primary components of Learning Resources are the Library, the Tutoring/Learning/Computing (TLC) Lab and the Reprographics Center. The goal of these components is to support the College curriculum by providing services and materials to assist instruction and enhance student success.

The Library maintains a collection of print, non-print, and electronic resources to meet the information demands of the District. The collection is accessed by an online catalog, which we share with California Institute of the Arts. This arrangement allows students and staff to have access to the resources of both institutions. Besides the online catalog, the Library also provides access to a variety of electronic databases including ProQuest, a full-text database that provides access to over 10,000 periodicals; Encyclopedia Britannica Online; Daily Life Through

History; CQ Researcher Biography Resource Center; CountryWatch; and Issues and Controversies. These databases are available on all networked computers throughout the campus. The Library includes 43 student computers, 18 of which are in the Open Computer Lab. Except for eight dedicated computers for the online catalog, all other computers provide unrestricted Internet access.

The Reprographic Center provides printing services, including digital copying, for the entire College. Faculty members have access to a walk-up copier for short jobs and to create masters for longer jobs. The Center will soon begin use of Digital Storefront, a computer program allowing instructor to submit job requests virtually. In terms of software used in-house, Macintosh is also the primary computer format.

The TLC Lab provides tutorial services to students enrolled in math, English, and a variety of other subjects. The Lab also includes the largest number of general-use computers on campus (38). All of these computers have controlled Internet access, due to the fact that they are primarily used for instructional programs. The Lab also has an adjoining open lab with 18 computer stations



Current Environment:

Every component of Learning Resources has used computer technology for some time; however, in 1997 when the new Library opened, the availability of this technology increased significantly, especially from a student perspective. Now students have access to a number of online databases that put a vast amount of information at their fingertips. As new databases are added and print and non-print collections are maintained, the Library will need to continue to expand its bibliographic instruction program to ensure students' information competency. To meet this challenge will require appropriate staffing, technical support and additional funding.

The Reprographic Center has been charged with authorizing all copier purchases for the College. We are installing an online job request program (Digital Storefront) that will allow all District personnel to send print requests electronically to the Center. The Center's

ability to offer more services is compromised by our current facility.

In the TLC Lab the demand for tutorial services has increased with student enrollment and our current facilities are reaching their limits.

Recommendations:

The pervasive use of the Internet and World Wide Web and their positive impact on information retrieval has positioned Learning Resources as an efficient, timely, and cost-effective resource provider. To that end, Learning Resources must continue to:

- Systematically replace and upgrade computers and software for student, faculty and staff use in all Learning Resources areas.
- Work with Computer Support Services to ensure that sufficient bandwidth is available for the increasing use of the Internet in all Learning Resources areas
- Work with Computer Support Services to increase technical support in all Learning Resources areas.



- **Library**

- Maintain an automated library system with broad functionality
- Provide adaptive software/hardware to ensure access to learning resources for disabled students, faculty and staff
- Provide on – and off-campus access to the library’s electronic databases
- Assess the Library/Learning Resources support service needed by distance learners and address these needs as appropriate.
- Maintain an effective staff and student technology training program
- Participate in the community college consortium and the Library of California multi-type

- library network to purchase electronic resources at advantageous rates.
- Provide leadership in establishing campus-wide information competency standards.
- Increase the number of student computer stations as enrollment expands.
- Add computer stations and new software to the Open Media Lab to accommodate new language program teaching learning methods.
- Purchase and install computers, media players and other technology items needed to begin service to students and staff at the Canyon Country Education Center.

- **Reprographic Center**

- Implement Digital Storefront, a program that allows for virtual transactions from instructors to reprographics
- Expanding office with additional photocopiers to accommodate faculty members and staff.
- Explore the possibility of locating additional copiers in walk-up locations throughout the District.

- **TLC Lab**
 - Enhance distance-learning support for students through Web-based interactions.
 - Expand current facilities to accommodate the increased tutorial and computing needs of the campus.
 - Enhance support for student use of classroom software.
 - Purchase and install computers and other technology items needed to begin service to students and staff at the Canyon Country Education Center

FACILITIES

The physical plant that encompasses all of the structures and equipment owned or leased by the District is vital to the success of this Plan. Certain technological considerations must be included to support the future technology growth of the District.



Since the facilities of the District fall under their own master plan and it would be redundant to go into great detail, below is a list of requirements necessary for this Plan to be successful:

- Adequate power supply to smart classrooms, server rooms, and data closets.
- Cabling that meet District standards and reflect current trends in the industry.
- Provisions in new buildings for future technology including additional conduits, larger equipment rooms, and easily accessible spaces.
- Wiring closets that are sufficiently large properly ventilated and secured.
- Power receptacles that meet building and fire codes in type, quantity, and location.
- Proper environmental conditions for heating, ventilation, and air conditioning.
- Connection to generator power for critical elements of the data and voice network.
- Security measures such as secured classrooms, key control, and video surveillance.
- Sufficient storage facility to house computer equipment and peripherals.
- Office locations for MIS and Computer Support Services Staff that provide secure 24-hour access, room for expansion, and other considerations listed above.

- Smart classrooms and computer labs built to ensure functionality and mobility.
- Proper accessibility for people with disabilities that either meets or exceeds ADA requirements.

CONCLUSION

The District's Technology Master Plan is intended to focus on the technology needs of the Santa Clarita Community College District over the next five years. This document will assist in the planning and sculpting of the information technology efforts to an end that is both beneficial and functional for the District.

The Master Plan is a comprehensive view of technology within the District and how technology supports our mission. The Plan breaks down several important issues and lists recommendations for future enhancements and changes. While some of these issues are already in practice, others require serious planning, preparation, and budget. Overall, the District's technology infrastructure is well positioned for the next five years.

In support of this Plan, the District should continue to make funding for the purchase and replacement of technology a priority. Funding should be based on a percentage of the College's capital outlay, maintenance, and operational budget. A minimum of three percent of the total operation budget should be set aside for technology, maintenance, upgrades, and changes. The District must acknowledge that computer technology has a built-in

obsolescence period and must be upgraded regularly. The simple analogy is that computers are like chalk, only more expensive.

It is also important to remember that this Plan should be viewed as a living document. The annual reviews are imperative to the success of this Plan and the technological health of the District. This Master Plan, if properly executed, should provide a dynamic, structured view of technology as it pertains to education and the business services of the District. The District should continue to rely on and support the Technology Committee and Computer Support Services as they monitor the success of this Plan, continue to investigate emerging trends, and update the Plan accordingly.

Should the Santa Clarita Community College District Board of Trustees and administration maintain and support the technological growth as they have in the past, this District should be well poised to support the academic and administrative goals of the students, staff, faculty and administration throughout this Plan and beyond