

COLUMBIA COLLEGE



TECHNOLOGY PLAN

Spring 2011

Spring – 2011

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Spring – 2011

Executive Summary	5
Introduction	5
Annual Review	5
College Mission Statement	5
Technology Mission Statement	5
College Vision Statement	6
Technology Vision Statement	6
Definition of Technology	7
Strategic Goals	8
Goal 1: Maximize access to educational opportunities for current and future students.	8
Goal 2: Enhance diverse delivery opportunities and create engaging learning environments.....	8
Goal 3: Increase opportunities for collaboration and strategic partnerships	8
Goal 4: Strengthen Columbia College’s institutional identity in the local community, state, and nation.....	8
Goal 5: Recruit, retain, and reward a diverse quality workforce.	8
Goal 6: Establish base funding levels for technology to ensure efficient management of resources resulting in higher return on investment, safety and security.....	8
Goal 7: Support the Columbia College Master Plan and the California Community College Tech III endeavors	8
Current Environment	9
Technology and Media Services	9
Procurement Procedures	10
Network and Telecommunications	10
Communication and Collaborative Resources	11
Remote Access of Technology Resources	12
Online Student Services	14
Web Site Access and Development	15
Library and Learning Resources	15
Assistive Technology	15
Business Continuity and Disaster Recovery	16
Facilities	16
Review Process	17
Technology Priorities and Goals	<i>Error! Bookmark not defined.</i>
Technology and Media Services	18
Technology Replacement, Upgrade and Maintenance	18
Procurement Procedures	20
Network and Telecommunications	20

Spring – 2011

Communication and Collaborative Resources.....	21
Remote Access of Technology Resources	21
Instructional Technology and Multimedia.....	21
Distance Education	22
Online Student Services	22
Web Site Access and Development.....	23
Library and Learning Resources	23
Assistive Technology.....	24
Business Continuity and Disaster Recovery.....	24
Facilities	25
Conclusions.....	26
Timelines	<i>Error! Bookmark not defined.</i>
Appendices	27
Appendix A – YCCD Board Policy on Computer Use.....	27
Appendix B - Computer Tiers – Replacement of old computers as of April 2010	27

Executive Summary

Introduction

The purpose of this Technology Plan is to establish a technology-assisted framework guided by strategic initiatives that will provide clarity to the vision of the future for Columbia College. This Plan contains strategic goals, procedures and recommendations for technological additions and changes for Columbia College that will occur over the next three years. This Plan will examine the current status of technology-assisted learning within and beyond the Columbia College campus and offer insightful modification for the technology framework of the future containing administrative and procedural recommendations in a concerted effort to maintain the high standard of education Columbia College currently provides.

The plan outlines budgeting requirements that facilitate currency in technology and infrastructure, including recommendations for staffing modifications that are necessary to ensure quality support for student-centric learning. While prescriptive in some of the recommendations, the Plan should be viewed as a "living document" that serves as the strategic guide for current and future technology for Columbia College and will be updated during an annual review to ensure progress is being achieved and vision adjusted for to reflect the current technological, cultural or budgetary challenges. An annually revised report will be submitted by the Technology Committee to the College Council outlining the milestone achievements of the previous year and the updating needs for the next academic year.

The Columbia College's Technology Committee serves as initiator and primary steward of information for this Plan and utilized both internal and external tools and personnel to define and craft the final draft. The Committee's makeup allows for easy access to all academic and administrative areas on campus and serves to provide a steady stream of information and recommendations that are vital for the milestone achievements, structure and enduring success of this Plan. The Technology Committee serves as a sub-committee of the College Council.

Annual Review

The Technology Committee will annually review the existing Technology Plan beginning in the Spring of each year amending the document as necessary.

College Mission Statement

Columbia College is a dynamic institution of learners and creative thinkers dedicated to high standards of student success. We prepare students to be fully engaged in an evolving world by offering comprehensive and high quality programs and services. Columbia College is committed to a culture of improvement through measuring student learning across the institution. We strive for excellence, foster a spirit of professionalism and celebrate diversity.

Reaffirmed by Columbia College Council on September 11, 2009
Approved by the YCCD Board of Trustees on May 9, 2007
Adopted by Columbia College Council on April 6, 2007

Technology Mission Statement

Technology at Columbia College is structured and supported to provide the highest quality technology-based services, in the most cost-effective manner, to facilitate the College mission as it applies to student success, faculty instruction, faculty and staff support, administrative functions, and community service.

Spring – 2011

College Vision Statement

We envision ourselves as an exceptional institution of higher education.

Columbia College will continue to provide comprehensive, exemplary educational programs and services which respond to the individual learning needs of its students and the collective economic and cultural needs of its diverse communities.

Columbia College will be a center for transformational learning promoted through critical and creative thinking that is open to change and personal growth; civic, environmental, and global awareness and engagement; and individual and collective responsibility. We will promote a culture of support for student learning across the institution that adopts a holistic approach.

Columbia College will use leading edge technologies and showcase facilities to enhance teaching and learning. Our vision will be realized through outstanding employees who adhere to high standards of excellence while working in partnership with those we serve.

We envision developing a passion for lifelong learning.

Reaffirmed by Columbia College Council on September 11, 2009
Approved by the YCCD Board of Trustees on May 9, 2007
Adopted by Columbia College Council on April 6, 2007

Technology Vision Statement

The successful implementation and maintenance of this Plan will establish a strong technological presence at Columbia College and give the faculty and staff the necessary tools to incorporate technology into instruction and day-to-day operations. It is imperative that Columbia College remains committed to the advancement of technology in order to provide a productive workplace and an exemplary educational environment where our students receive an education that is current both in content and in technology. Therefore, technology will be designed and supported to:

- Provide direct, universal and appropriate access to information and instructional technologies by students, faculty and staff to facilitate improved learning and teaching;
- Promote students' success in their educational and career goals;
- Improve communication, collaboration and coordination among those who enable students, faculty and staff to make the most effective use of technology resources;
- Sustain and improve instructional, student and administrative support services;
- Promote and expand alternative methods of education that integrate technology into instruction and extend that instruction beyond the physical campus;
- Invest in staff development to increase use and application of technology resources.

Spring – 2011

Definition of Technology

In this document technology will be defined as follows:

Technology is software, hardware and infrastructure that either directly or indirectly affect instruction, learning outcomes, and services within the Columbia College campus community. Technology can be divided into two areas that share common tools:

- Educational technology is technology used to support the learning process and includes hardware (computers, handheld devices, display tools, printers, digital cameras, etc.), software and content applications (office applications, design and editing tools, productivity software, etc.), and media (the Internet and videoconferencing).
- Administrative technology includes the hardware, information systems, software, networking, telecommunications and electronic tools that are used to support the administrative functions of the college.

Strategic Goals

The Technology Plan is a tool to help Columbia College redefine initiatives and adjust institutional direction and will be shaped with the following strategic goals resulting in formal timelines with clearly defined milestone achievements:

Goal 1: Maximize access to educational opportunities for current and future students.

Utilize technology to reach new and existing populations through a variety of methods with special emphasis placed on the creation of a distance education program to service students both locally and regionally.

Goal 2: Enhance diverse delivery opportunities and create engaging learning environments.

Promote influential learning opportunities and quality instruction through the use of innovative technology closing the service gap in face-to-face offerings vs. satellite programs, blended or hybrid courses in the pursuit of excellent student support.

Goal 3: Increase opportunities for collaboration and strategic partnerships

Seeking grant opportunities, corporate and private partnerships where prudent without impeding institutional or program integrity will enable lower operational costs, stronger program support and allow for enhanced opportunities for more students.

Goal 4: Strengthen Columbia College’s institutional identity in the local community, state, and nation.

Refinement of current programs and introduction of new offerings in support of the local community, state and national trends will result in opportunities for increased FTE count and enhanced recognition as a vital supportive educational institution.

Goal 5: Recruit, retain, and reward a diverse quality workforce.

Enhancing and expanding our workforce to service both internal and external needs by recruiting, retaining and rewarding quality individuals of diverse backgrounds will serve to strengthen Columbia’s vibrant collaborative educational environment.

Goal 6: Establish base funding levels for technology to ensure efficient management of resources resulting in higher return on investment, safety and security

Establishing annual, recurring funding for all operational technology needs will contribute to the lowering of the overall cost of technology and must be coupled with formal review of all technology expenditures; a special focus must be placed on securing information systems against all threats to institutional continuity and to ensure student privacy and data security.

Goal 7: Support the Columbia College Master Plan and the California Community College Tech III endeavors

The Technology III Plan: 2007-2010 (Tech III) articulates a framework and direction for information and communications technologies that support the overall vision in the CCC Strategic Plan. Including initiatives from both plans will ensure local, district and system-wide endeavors are implemented, modified or refined utilizing all potential resources and result in long-range strategic vision. [Tech III Document](#)

Current Environment

Technology and Media Services

Columbia College's Technology and Media Services consists of a Telecommunications Specialist, an Information Systems Specialist, a Media Services Technician and an Online Services Developer, lead by the Director of Information Technology and Media Services.

The College's technology infrastructure now includes over 700 networked computer systems, approximately 10 administrative and instructional servers, three T-1 lines for voice, a Gigabit and T-3 line for data and a VOIP (Voice over IP) phone system with approximately 400 devices provisioned. All which provide for a comprehensive network that includes most of the buildings, offices and classrooms on campus.

Columbia College's technology systems continue to mature in both scale and complexity. Growing needs in all departments, even those that traditionally have not required technology-assisted tools for student instruction, require careful consideration and thoughtful planning to ensure achievement of organizational vision.

The California Community Colleges Chancellor's office report "Real Cost Project" in September 2003 advocates, "computers to be purchased, operated and replaced on a Total Cost of Ownership basis, at \$3,506 each per year." The Committee believes that computers and their respective peripherals maintain a functional life of two to five years, depending upon the designated use for each computer. Software and related technology equipment follow a similar pattern of three to four years. The Information Technology Office has developed, and the Technology Committee annually reviews, a tier-designation for computers that is centered on the intended use of the system. (See Appendix B: Computer Tier Plan – 2010) This approach designated an optimal maximum life expectancy for computers and serves as a guide when budgeting for and replacing computer systems. While this plan details computer replacement models, it does not address all aspects of the technology equipment on campus and significant investment in technology, media equipment, and software for all departmental needs remain crucial for the provision of student-centric support and success of institutional learning objectives.

Technology Services provides all faculty and staff with a computer for their work area. The College operates in a standardized PC environment that supports administrative and instructional applications. The current standard of the College provides for a minimum configuration of a computer Intel® Core™2 Duo processor or better system with some faculty, staff and student labs possessing systems with a Intel® Core™2 Quad processor or better. The College has tried to maintain currency in student computer labs by purchasing newer technology for these labs and taking the older machines, which in most cases are newer than those used by the College's employees, and passing them on to College employees based on need.

The College is developing procedures for printers and other peripherals that identify the type and capacity needed based on location and intended use. A networked printer is placed in those areas where multiple users can benefit and in all student computer labs. Individual printers are targeted to employee offices where a larger workgroup printer would not be cost effective.

Most classrooms have basic media equipment, overhead projector, screen, and TV & VCR/DVD. Video/Data projectors have rapidly become a standard in classrooms as well with over 60% of the classrooms having equipment permanently installed or stationed on media carts. Those classrooms not equipped with permanent installation or have media carts permanently assigned are serviced by media

Spring – 2011

equipment that can be quickly setup and connected for learning environment optimization. Many classrooms are being updated with permanently mounted computers, SmartBoards, document cameras and projectors under a Title III grant.

With the number of Faculty, Staff and Student computers increasing annually the occurrences of unlicensed software have increased dramatically. The ability to monitor and control administrator access for users to install software as well as what software is installed is compromised without the proper tools. Installing either unknown software or software without proper licensing puts the college at risk, potentially opens holes in the network and increases the workload for the Technology & Media services department.

Procurement Procedures

The College continues to require a formal review from Technology Services prior to the initiation of a purchase requisition for all computer technology and media systems³ purchases. This will allow the College to maintain compatibility and standardization with existing technology.

Formal review is defined as requesting a Datatel approval from the Director of Information Technology and Media Services. The Director needs a clear equipment description and if possible, a brief explanation of the intended use of equipment. The Director or appropriate designee will review the request within three working days to ensure compatibility and appropriate standardization within the existing technology and College infrastructure.

Computer technology is defined as standard accepted computer systems, all computer software, all established computer components and peripherals, and all networking components.

Media Systems are defined as any system used to project, display or capture data and/or video and any sound equipment needed to augment this equipment.

Network and Telecommunications

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 telecommunications network is critical if the College 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.

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

The data network consists of Cisco BFR 4507 & 7206 routers and Cisco Catalyst 2950 series switches, which provide the backbone for a Fast Ethernet network. Network connectivity between Columbia College and YCCD is via VPN Tunnel over our Gigabit Fiber Connection. Internet access is supplied to YCCD and separately to Columbia College, by dedicated Gigabit fiber connection and DS3 connections to CENIC. The network encompasses all of the primary and ancillary buildings on campus and totals over 25 pieces of network equipment. Connection between the buildings is established through single and multimode 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, staff work locations and classrooms. A Cisco PIX firewall is in place at YCCD to protect the systems from outside intrusion and

Spring – 2011

virtual LANs are used within the campus to segment the student access machines from those used by employees.

A new network is being installed to replace much of the aforementioned network. Cisco Catalyst 3750E series switches will provide POE (power over Ethernet) to Cisco VOIP (Voice over Internet Protocol) phones. CENIC will provide gigabit connectivity to the college via Gigamon. Routers and firewalls are being upgraded. Battery backup UPS's (Uninterruptable power supply's) will provide more reliable power to the Catalyst switches in all buildings thus ensuring dial tone on the new VOIP phones.

To ensure reliability of the data network, battery backups are installed in key locations to reduce downtime in the event of a power outage. The campus network backbone and all related network equipment necessary to maintain our network are attached to battery backups that will provide several hours of uninterrupted run time. Barring a protracted event, this system should be sufficient to outlast most planned or unplanned power interruptions.

All video conferencing equipment transmits through the campus LAN. The College has one off-site location for instructional purposes. The Nursing Center in the old Sonora Community Hospital is all connected to Columbia College by way of a T1 line.

The College's voice system infrastructure consists of a VOIP (Voice over IP) Cisco Unified Call Manager and Unity voicemail servers, each campus maintains a mirrored copy of the call manager server at YCCD district offices for redundancy. YCCD currently maintains the only instance of the Cisco Unity voicemail system; the voicemail system is incorporated into each full-time end-user's work location. The voicemail system has several advanced features including selective greetings and phone trees. The campus receives phone service via two T-1 lines used for both inbound and outbound calls. 600 DID (Direct Inward Dial) lines are in place to allow direct calling of extensions from off-campus bypassing both the main number and switchboard. Connectivity to Modesto Junior College and YCCD are accomplished via a WAN (Wide Area Network) between campuses.

A generator provides power to the data & telecommunications equipment in the event of a power interruption from PG&E. Also a battery backup is provided for both the telephone and voicemail systems, which will run for approximately 8 hours, depending on the system load. The telephone and voicemail systems are backed up monthly and stored in an off-site location.

The college provides a secure wireless network that consists of Cisco Aironet series lightweight access points and a Cisco wireless controller. Wireless technologies currently available are 802.11abg with speeds up to ~54Mbit/s and 802.11n with speeds up to ~144Mbit/s. Access points are deployed building-by-building to provide maximum coverage both inside and around each building on campus.

Communication and Collaborative Resources

Email and the additional resources provided through the Microsoft Exchange Server are a central communication tool that allows colleagues to stay in touch, instructors and students to easily communicate, and is an excellent way to provide information to large groups of people such as the employees within the College. All full-time faculty and staff are provided Outlook mail accounts and access is provided for adjunct faculty and part-time employees. The College email system is setup with a domain name of "yosemite.edu" and a standard naming convention for all users has been established as last name and first initial. Outlook provides collaboration options, calendar, contacts, and tasks. In addition, the Web client for Outlook allows an employee to check their email anywhere in the world through an Internet connection.

Spring – 2011

The College has adopted policies for acceptable use of all College's computing resources. Currently, there are board policies governing use of computers by students and staff as well as a formal Acceptable Use Plan. These policies are viewed and an important step for providing guidelines and structure of the overall use of computing resources. A copy of the current policies is located in Appendix A.

Students are provided official email accounts through Windows Live. All students will be granted a “student.yosemite.edu” address for their email usage.

Remote Access of Technology Resources

Remote access to the electronic resources of the College has been limited to use through personal Internet connectivity. YCCD CSIT maintains a Cisco VPN solution that allows approved full-time employees of the College remote access directly to the campus LAN. Once connected, the user can perform tasks as though they were on campus. Faculty and staff can retrieve their email while off-campus through a Web server running Outlook Web access. This server allows access to their Outlook schedule, contacts, and email information. ConnectColumbia allows faculty and staff secure access to student information while off-campus. This system provides class rosters, leave accruals, contact information, and budget reports that are viewable in an easy-to-use Web format.

Instructional Technology and Multimedia

Instructional Technology is defined as the use a mechanical aid to assist in or enhance the learning objectives. Multimedia is a broad term used to describe any combination of two or more of the following elements: text, image, animations, sound, speech, video, and computer programs. The elements are digitally controlled and enhance the information for better communication and understanding. As the need for technology in the classroom has grown over the years, Columbia College has attempted to keep pace with the development and usage of multimedia on campus evolving to include IP video conferencing, the Internet and IP connectivity.

Columbia College provides basic support for campus-wide use of multimedia as a medium where instructors can enhance student learning outcomes with Internet access, PowerPoint presentations, Blackboard (Course Management System), and videos. Since not all College classrooms have video/data projectors, Media Services will set-up video/data projector & laptop for multimedia presentations anywhere on campus. This service is provided to faculty, staff and students. The Title III grant will help to fund additional classroom enhancements with equipment such as SMART Boards, which are interactive white boards.

Columbia College offers advanced multimedia capabilities and access in the Instructional Technology Center located in the new Learning Resource Center. The newest capabilities provide faculty, staff and students, under supervision of the Distance Education Coordinator, an opportunity for multimedia production. The room is equipped with 12 video-editing computers, Internet access, digital and video cameras, projection and lighting systems, an audio system, cassette players, multimedia software applications and the ability to play and produce different media ranging from VHS to DVD.

The Technology Committee currently maintains protocol and provides support for the Instructional Technology Center (ITC). The goal of the committee is to develop a strong dialog concerning instruction and technology on the Columbia College campus and how to use both to meet faculty and student needs. In addition to the equipment provided through the ITC, the Information Technology Center and Media Services provides limited checkout of technology equipment to faculty and staff. The hope is to

Spring – 2011

perpetuate multimedia technologies and make it possible to address instruction among students with diverse learning styles and increase student motivation for class work and assignments.

The Information Technology Center (ITC) most critically issue is related to the lack of full-time staffing as the Distance Education Coordinator and a 20-hour temporary assistant provision current support. Without vital full time staffing the instructional technology training needs of faculty, staff and students are not met and educational opportunities are compromised.

The adoption of new departmental programs, initiatives and the implementation of the Title III grant for Distance Education underscore the growing critical support services that the ITC provides. The current budgetary expense and investments utilizing instructional technology are inefficient. Without an investment in staffing, comprehensive training programs, and increased hours faculty, staff and student needs will continue to be unmet.

Distance Education

According to California Community Colleges Distance Education Regulations and Guidelines, distance education is defined as instruction in which the instructor and student are separated by distance and interact through the assistance of communication technology. Distance Education at Columbia College has evolved into synchronous and asynchronous instruction. Synchronous delivery of distance education from Columbia College is delivered through video conferencing systems and asynchronous delivery is centered online and delivered through Blackboard. These two distinct instructional delivery methods allow Columbia College to explore and develop educational initiatives using advanced communication and computing technologies to address student access issues related to geographical, cultural, disability or facility barriers. It is recognized that distance education through synchronous delivery will continue at Columbia College for the foreseeable future. However, due to the expensive nature of video conferencing, the limitations of the synchronous model, the growing technology available to students at home, and the shifting expectations and needs of the student population the majority of the Distance Education resources will be focused on increasing asynchronous (online) course offerings utilizing a course management system, Blackboard.

Currently, all instructors are encouraged to have a Web presence through Blackboard for their courses and to use online technology to facilitate their instruction. The Yosemite Community College District has contracted with Blackboard to provide a hosted implementation of the Blackboard course management system. The advantages of a hosted system are:

- Increased Reliability.
- Increased Availability for both faculty and Students.
- The system is up-to date with current release and patch levels.
- Instructor coursework is secured and backed up daily.

Password protected logins ensure that Faculty and Student information and coursework is secure and private. Blackboard is available for all Faculty at Columbia College not just for online instruction, a Faculty member teaching a face-to-face class may request an enhancement shell to augment instruction within their class. This also increases the availability of information to students. The use of Blackboard has made online instruction facilities independent by allowing Faculty and Students to build and participate in a course from anywhere on almost any web enabled device. With the award of the Title III grant in 2008, Columbia College has the opportunity to convert 25 of our classrooms to technology-enhanced classrooms. Columbia College is committed to Distance Education and providing all of the tools necessary for faculty member to succeed. The classroom improvements include the tools necessary for Faculty to create coursework and components of their online of hybrid courses.

Spring – 2011

Distance Education at Columbia College is moving forward with the increased development of online course offerings. Since Columbia College was awarded the Title III Grant in fall of 2008 appropriate support, training, staffing and infrastructure for increased growth of our current Distance Education offerings has grown and helped to provide a new vehicle for student recruitment and retention resulting in higher FTES.

A Distance Education Addendum (DEA) form, approved by the Curriculum Committee, is available for the development of courses delivered through distance education. The protocol for requesting Blackboard shells and curriculum approval is clearly defined. A formal Distance Education plan was finalized and submitted to the Columbia College president in March 2008. The Distance Education Plan is designed to document the beginning stages of Distance Education development and beyond with elements that include documentation of practices and procedures that were established prior to its creation, adoption of effective standards and practices in use in model Distance Education programs across the California Community College System, and suggestions for teaching and learning that will ensure student success. The action plan segment addresses specific items that the Distance Education Committee considers integral to the development of a high quality distance education program; addressing faculty and staff training, infrastructure and staffing needs, marketing suggestions, and necessary student services issues. We recognize technology and the plan is always evolving and the Distance Education Committee will review and revise as needed; with the review process taking place no less than once a year.

This plan is critical for Columbia College to be able to move rapidly into more distributed learning modes and Distance Education's success is directly linked to the ability of Columbia College instructors to provide a high quality, inclusive, dynamic, feature-rich, structured online educational environment. It is clearly understood that for distance education to increase and succeed, technology support of distance education will be critical.

Columbia College's Distance education plan is located at: <http://www.gocolumbia.edu/documents/de/>

Online Student Services

Online student services provided through ConnectColumbia include college applications, course registration, current schedule, student educational plans, transcripts, grades, financial aid information, student email account information, and fee payment. Services available through the college website include access to online library resources and databases, college bookstore and textbook purchasing, general events through announcements and online college calendar, and course and assignment information from instructors using the college website to augment course information.

With the hiring of our Online Services Developer through the Title III Grant, Columbia College continues to invest in strategies and online services that will result in the mirroring of all local support services and make them available online. This will increase access for current and future students and ensure the success of the Distance Education program. Online resources to provide academic advising/counseling, degree audit, student orientation, placement testing, Extended Opportunity Programs & Services (EOP&S), Disabled Students Programs and Services (DSPS) and health services continue to be developed and supported. These online services will meet or exceed those services available to students who come onto the campus to conduct business. The technology infrastructure to provide and support these services are being identified and developed and are overseen by the Online Services Workgroup. The Online Services Workgroup is comprised of faculty, administrators, the distance education coordinator, tech team members, and the online services developer.

Spring – 2011

Web Site Access and Development

The Columbia College website serves as a medium that allows the College to store, present, and gather information to and from audiences on campus, in our community, and around the globe. The College has come to depend upon the web resources as a central tool for external communications. The official College website is designed and tested to easily display on Microsoft Internet Explorer and Mozilla Firefox. Access to create pages and sub-sites on the web server is maintained within the OMNI Update content management system and is available to academic departments and administrative offices. Some instructional course material including syllabi, course outlines, course notes, and course assignments are available to students and are posted on faculty or department pages located in the general website.

The Columbia College's URL is: <http://gocolumbia.edu>

Library and Learning Resources

The Library maintains a web “Gateway to Information” to facilitate access to the online catalog, electronic databases, eBooks, and links to important academic and reference websites. The Library provides a web-based catalog of materials shared with Modesto Junior College. The catalog is also a gateway to our growing collection of more than 15,000 electronic books available to students and employees both on and off campus.

Approximately forty-five online databases are available for student use. They provide access to more than 16,000 full-text journal and magazine titles and 250,000 streamed MP3s, several comprehensive encyclopedias, and detailed automotive diagnostic and repair information. Our databases and electronic books are available to students and staff from off-campus via our EZProxy authentication system.

Eighty computer stations are available in the Library for patron use. Thirty of the computers are located in the Demonstration Area, which can be reserved for library orientations and subject-specific library research classes. Two computers are outfitted with adaptive technology to assist disabled users. Five computers are loaded with programs used by computer science and GIS students. Printing is available from all of our computers and is controlled by our GoPrint system, which collects 10 cents per page.

The Library maintains a blog in an effort to promote its materials and resources to our community. The Library currently offers online tutorials that describe how patrons can use our various resources and services.

The Library has an automated method of emailing welcome messages; hold notifications and overdue notices to patrons.

The Library is currently staffed by the following positions, all of which support student use of technology and use technology to carry out every day job functions: one Faculty Librarian (32 hours/week), two Library Media Technician IIIs (100%, twelve-month), one Library Media Technician III (100%, eleven month), one vacant Administrative Secretary position currently shared with Technology/Media Services, and between zero and up to five student aides, depending on funding availability.

Assistive Technology

The College population of students requiring assistive technology has grown dramatically. Disabled Students Programs and Services (DSPPS) have been able to meet the needs of this population. Through its

Spring – 2011

"High Tech Center" (HTC) the staff of DSPS have provided assistive technology that allows students with special needs to effectively complete their educational goals.

The majority of the students with disabilities who take classes within the College receive services and support through the DSPS Program. Accommodations have been made in several computer labs and classrooms to ensure accessibility in terms of facilities and furniture. The staff of the College's DSP&S Lab is trained on the proper use of assistive technology and offers information when needed to other faculty and staff. All Distance Education course conducted through video conferencing are captioned through Live Captioning to enable access for all students to course information delivered in this manner. All new video materials are purchased with Closed Captioning, or when it not available, attempts are made to caption the materials after purchase.

Business Continuity and Disaster Recovery

Business critical data that is stored on the CCMANZAN1 file server is currently backed up to an external USB hard drive, on a recurring schedule, at least 3 days a week. Drives are rotated on a weekly basis.

Business critical data that is stored on other file servers is currently backed up via a server-to-server (or server-to-workstation) file transfer that occurs automatically, on a daily basis. Other business critical data stored on the file servers can be backed up using this method, in addition to other backup technologies, such as tape drive and/or portable USB hard drive.

As a first step toward a comprehensive document management system, a dedicated file server has been installed and will be used to provide automatic daily backup of data for all administrators and key administrative support staff. An important goal of this process is to establish a comprehensive document management system that will include document storage, indexing, searching and tracking and will assist Columbia College to meet all regulatory requirements for the access and storage of electronic information.

A cooperative effort between Columbia College and YCCD CSIT is being developed that will allow for off-site storage of backup data for each entity to be stored on servers at the other's site. This will allow for secure off-site storage of data that would be quickly available to aid for disaster recovery.

Facilities

The physical plant that encompasses all of the structures and equipment owned or leased by the College is vital to the success of this Plan. Certain technological considerations must be included to support the future technology growth of the College. Since the facilities of the College fall under their own master plan and it would be redundant to go into great detail. Below is a list of identified requirements necessary for this Plan to be successful:

- Adequate power supply to smart classrooms, server rooms, and data closets.
- Power receptacles that meet building and fire codes in type, quantity, and location.
- Proper environmental conditions for heating, ventilation, and air conditioning.
- Security measures including secured classrooms, key control, and video surveillance.
- Sufficient storage facility to safely house computer equipment and peripherals.
- Office and workshop locations for Technology Team Staff.
- Smart classrooms and computer labs built to ensure functionality and mobility.
- Proper accessibility that either meets or exceeds ADA requirements for persons with disabilities.

Spring – 2011

Review Process

As mentioned throughout this Plan, technology is constantly changing. In order for this Plan to maintain currency and effectiveness it will be reviewed annually. The Technology Committee will schedule a review of the Technology Plan during the Spring semester. In the review process the Technology Committee will evaluate the progress the College has made since the last review, identify current trends in technology and education, and make recommendations for modifications or additions to any part of this Plan.

Once the review is complete, all modifications will be submitted by the Technology Committee for review by College Council before being submitted to the President of Columbia College.

Technology Priorities and Goals

All specified costs are estimates only; actual costs will vary as implementation timelines, equipment and staffing may vary.

Technology and Media Services (Estimated cost \$110,000 annually)

1. Create a comprehensive technology informational training program with specific departmental refinements to ensure proper utilization of campus-provided technology.
2. Establish a training “line item” budget for the professional development of technology staff to attend seminars, conferences, and vendor training programs to deepen knowledge and to ensure mastery over implemented and future campus technologies. Utilization of @One, CVC, and CCC Confer programs as listed in the CCC Tech III plan will be strongly encouraged. (Estimated cost \$10,000)
3. Establish a capital “line item” funding model for campus technology support providing for annual expenditure and calculated replacement of campus infrastructure.
4. Establishment of a reserve “line item” budget to address un-anticipated campus needs, refinements and program support necessary to ensure student, faculty and staff support are not compromised.
5. Historically the most striking omission from past technology plans has been a realistic model of technical staffing as few planning teams have recognized that the maturity of the College’s technological environment will require a substantial group of trained professionals to properly address campus demand. With the anticipated inclusion of very technology intensive programs like distance education it is recommended that the following position be established:
 - a. Information Systems Specialist, 100%, 12 months (Estimated cost \$100,000 including benefits)
6. The College should establish a market-based approach to determine competitive compensation for key positions in the Technology and Media Services department to ensure retention of key personnel is maintained.
7. Refinement of the organizational model of shared support with the Yosemite District Central Services division resulting in either:
 - a. Increased access, responsibility and authority for Columbia College technology personnel to address critical campus needs
 - b. Further localization of equipment and systems to the Columbia campus ensuring organizational productivity to function as a fully integrated campus institution.
 - c. The Director of Information Technology and Media Services referenced as a key decision-maker for all campus technology-assisted solutions.
8. Increase wireless infrastructure installation and support across campus to leverage access in non-traditional technology areas in support of the enhanced gathering areas listed in the Campus Master Plan and other areas on campus without access to campus provided technology.

Technology Replacement, Upgrade and Maintenance (Estimated cost \$200,000 annually)

1. Equipment must be replaced on a regular cycle to maintain a proper standard level of service to end-users. (Estimated cost \$100,000)
 - a. End-of-life equipment is more than a budgetary concern and failures can factor into security.
 - b. A preventative maintenance program is needed to ensure that current equipment meets the three to four year functional life as set forth by this Plan.

Spring – 2011

2. Utilize fund replacements through the capital “line item” budget rather than relying on passing a bond issue every five years or end-of-year funding that does not allow for sustained, prescriptive replacement.
3. Permanently mount video/data projectors connected to computers, VCR/DVD’s, and document cameras in 100% of classrooms as part of the Title III Grant.
 - a. All media equipment should be capable of showing closed caption media if required. Currently digital computer projectors do not have the capability to show captioned material, so special captioning decoders should be purchased to allow the use of captioned material through the use of digital computer projectors. (Estimated cost \$50,000)
4. Address growing needs of traditionally non-technology departments such as Health and Human performance by funding the implementation and on-going support of equipment for data capture and analysis in support of program needs. (Estimated cost \$50,000)
5. The College should strive for further standardization of general-use, College-licensed software. The basic setup includes:
 - a. Microsoft Office including Outlook for email
 - b. TrendMicro Antivirus
 - c. Internet Explorer and Firefox web browsers
 - d. Microsoft operating systems
6. Standardized adoption of accessibility software necessary to ensure compliance with federal and state regulations:
 - a. The compatibility of assistive software programs and campus wide programs for students should be considered when new software, upgrades and maintenance are considered. The College should be responsible in keeping the assistive programs upgraded to the level of compatibility when new software upgrade and maintenance is considered. If the current assistive software is not compatible with the campus-wide software being purchased, upgraded or maintained, the compatible assistive software upgrade cost will be included in any purchasing, upgrading or maintenance.
7. Upgrades and new applications should be evaluated for functionality, system requirements, investment value, and feasibility of cross-platform operation.
 - a. Creation of a comprehensive software list with version history and quarterly maintenance of this list will be established to ensure technology implementation projects meet or exceed current standards in the production environment
 - i. All technology implementations will have a certification process to ensure compatibility with current production software installations. This includes:
 - (a) SARS
 - (b) Datatel
 - (c) EMS (resource management scheduler)
 - (d) Blackboard
 - (e) SIRSI
 - (f) ClassTracks
 - (g) CurricUNET

Spring – 2011

- b. The expertise for identification of possible systems meeting the requirement resides with the department requesting the software with selection and installation provisioned by Technology Services.
 - c. Creation of a central software-licensing model for campus implementation that only allows for the installation of properly licensed software that has been selected by the institutional departments.
 - d. Tracking metric for the proper installation and maintenance of accepted software.
 - e. Removal of all unlicensed or unapproved software to ensure security and accessibility requirements are maintained.
8. Creation of hardware and support positions as program expansion requirements allow with staffing models of the CCC Tech III plan as a guide.

Procurement Procedures (Estimated cost \$10,000 annually)

1. Addition of departmental software to be included in the formal review procurement procedures.
Departmental Software: Technology and Media Services define Departmental Software as any application loaded on local workstations, equipment or peripherals that fall outside of the technology department maintained standard application list. The technology may incur additional budgetary responsibilities for licensing as software is added to the maintained list.

Network and Telecommunications (District Provided Equipment)

1. The College's telecommunications network will continue to support 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).
 - a. All off-site locations maintained or leased by the College
2. Expansion of the College data and video network needs to continue to support the needs of growing bandwidth intensive applications.
 - a. Continued segmentation through the use of VLANs or other means to ensure optimization of local connectivity should be maintained
 - i. Historical performance metrics for the Datatel system connectivity will be maintained to ensure system performance is not compromised.
3. The voice network on the Columbia College campus is sufficient to accommodate some growth on campus. However, should newer hardware become available that would increase the functionality of the telephone system, the College should consider functionality over expansion of the current system.
 - a. Voice-over-IP (VOIP) technology has been approved and purchased. Deployment is complete as of Fall 2010
4. Enhancement of the wireless pilot project to become a full production system available to all faculty, staff, students and guests of Columbia College.
 - a. Strong encryption and network protection protocols in place to ensure privacy of personal information and security of campus data are paramount to any system.
 - b. Network policy or access control hardware and software should be investigated, piloted and implemented to ensure systems connecting to the YCCD system are free of viruses, have the latest security updates and comply with all system requirements.

Spring – 2011

Communication and Collaborative Resources (Estimated cost \$5,000 annually)

1. Columbia College will continue to participate in district discussions concerning decisions and improvements throughout the evolution of our Email system.
2. Columbia College, through YCCD District IT, will provide a college-based email account for each enrolled student to enhance formal communications between the students and the College.
 - a. The use of the Columbia College email should become the primary communication vehicle for formal student contact.
3. Research and piloting of alternate communication protocols should be investigated.
 - a. Options like text messaging, blogging, and chat systems should be reviewed for possible institutional use as student participation in these systems outside of the college has reached the mainstream.
4. Implement new ways to communicate campus conditions and situations with all students, faculty, staff and administration at Columbia College. Tools like Facebook, twitter, AlertU and others.

Remote Access of Technology Resources (District Provided Equipment)

1. Virtual Private Networks (VPN) connectivity will be maintained and, as appropriate, extended to all trained staff and faculty.
 - a. Investigation, pursuit, piloting and implementation of a SSL VPN gateway are recommended.
 - i. Allows for ease of client-system use by requiring no software installation.
 - ii. YCCD-controlled access to systems and client configuration is localized to a single gateway ensuring flexibility for network security and configuration changes to be quickly implemented.
2. Investigation into portal technologies to allow for web access to institutional systems.

Instructional Technology and Multimedia (Estimated cost \$205,000 annually)

1. Staff will need continuous training and support as they integrate technology into the curriculum such as multimedia and presentation software in order to prepare demonstrations and collaborative projects with their students.
2. As the College renovates upgrades and constructs both new traditional classrooms and computer labs, investment in the equipment is necessary to create additional multimedia classrooms for a more functional technological infrastructure that focuses on current and emerging information technologies.
Title III
3. Creation of budgetary support for staffing the ITC with a full-time permanent faculty position to allow for maximum use of the facility.
 - a. Instructional Technology Coordinator, 12 months (Estimated cost \$100,000 including benefits)
 - i. Full-time management staffing of the Instructional Technology Center
 - ii. Coordinate all faculty requests
 - iii. Design, schedule and deliver instructional technology training sessions for Columbia personnel.

Spring – 2011

- b. Alternate Media Specialist, 10 months (Estimated cost \$70,000 including benefits)
 - i. Closed-captioning requirements and faculty digital creation requests for both local and online educational opportunities.
- c. Student Media Technician, student position (20 hours per week staffing) (Estimated cost \$10,000)
4. Encourage increased utilization of video conferencing tools.
 - a. Currently 3 sites are all under-utilized and very expensive equipment is not in use.
 - i. A course with no videoconference need scheduled in video conferencing rooms does not enhance or encourage use.
5. Establish a budget for the purchase, and maintenance of student multimedia tools: video cameras, digital audio recording devices, external hard drives will all serve to enhance educational learning objectives by giving students access to costly equipment and provide proper training on use. (Estimated cost \$15,000)
6. Utilize “train-the-trainer” programs by sending ITC staff to necessary training provided by @One, CVC, CCC Confer programs, and/or vendor-provided training to ensure Columbia College continues to implement sound educational technologies that are supported from the beginning of program implementation to the finalization of student learning objectives. (Estimated cost \$10,000)

Distance Education (Estimated cost \$5,000 annually)

1. The Technology Committee will work closely with the Distance Education Committee to ensure that the necessary equipment and program support is available for the requirements of the Distance Education Plan. (Title III Grant)

Online Student Services (Estimated cost \$170,000 annually)

1. Create an online Advising/Counseling system
 - a. Create an online Degree Audit system. (Estimated cost \$100,000)
2. Create an Online Orientation system
 - a. Creation of online self-service assistance, frequently asked questions (FAQ) and step-by-step tutorials for common problems will ensure proper system use is achieved.
3. Create an online Assessment system
 - a. Creation of a system to allow for the access to an online advisor for assessment questions should be pursued to allow for seamless process for students that may never visit the Columbia campus.
4. Increase the online Financial Aid resources
 - a. Augment the system for assessment advising to include all Financial Aid needs.
5. Augment online Library support services
 - a. Commitment to online tool investment such as online database subscriptions, electronic periodicals and other Library-directed investments should continue to be funded in a coordinated fashion.

Spring – 2011

6. Review, augment and expand the EMS and SARS system capabilities to ensure integration with the Datatel system. (Estimated cost \$20,000)
7. Explore opportunities to remotely provide EOPS and DSPS services to students.
8. Explore opportunities to remotely provide Health Services information to students.
9. Investigation, pilot, and implementation of a Document Management system for campus use that has bridges to the online systems are recommended. (Estimated cost \$50,000)

Web Site Access and Development (Estimated cost \$125,000 annually)

1. Establish budgetary support for the funding of the following position:
 - a. Web developer, 100%, 11 months (Estimated cost \$100,000 with benefits)
2. Recognizing that the web is an essential 24-hour, seven day-a-week services, the District must invest in additional backup hardware, software, and server security and staffing to ensure local needs are met in a timely fashion.
3. The College will identify and maintain funding sources for critical online resources previously funded through the Telecommunications and Technology Infrastructure Program (TTIP).
4. Update site for the use of a content management system and train faculty and staff on the use the system for maintenance and updates.
5. Since the Web is a public medium and the easiest way for the general public to access the College information the College will make a concerted effort to keep the technologies in use on its Web site as current as possible. Possible augmentations are:
 - a. Web cameras that provide real time views of the campus and events (Estimated cost \$25,000)
 - b. Virtual tours that invite potential students to “visit” the campus
6. The Web must be designed with accessibility to persons with disabilities and be compliance with current state and federal accessibility standards.
 - a. Periodic review of compliance should be documented to ensure new innovations and implementations comply with this mandate.

Library and Learning Resources (Estimated cost \$95,000 annually)

1. Continue improving the Library’s website for greater ease of use.
2. Hire technology/computer lab assistant to help students with computer hardware/software problems since they have an 80-computer lab the largest computer lab on campus. (Estimated cost \$25,000)
3. Create additional online tutorials for our web-based resources.
4. Ensure that the entire staff can take advantage of various technology-related staff development opportunities relevant to their job duties. (Estimated cost \$10,000)
5. Provide community patrons with off-campus access to our article and research databases and eBooks. (Estimated cost \$10,000)
6. Implement a Library- (i.e. Sirsi-) compatible system by which students can update their contact information online. (Estimated cost \$50,000)

Spring – 2011

Assistive Technology (Estimated cost \$50,000 annually)

1. The College will access and maintain funding sources to purchase required assistive technology, specialized software, and ergonomic support equipment to accommodate all users. (Estimated cost \$50,000)
2. DSPS, in concert with the technology staff, will be responsible for ensuring that computer assistive technology is deployed College-wide and will inform the Office of Instruction and Learning Support Services regarding accessibility compliance issues; all instructional media is produced in alternative formats upon request; the faculty/staff are educated on the needs of the disabled population and the College stays within compliance of local, state and federal laws pertaining to students with disabilities.
3. The YCCD District-led initiatives will be referenced, implemented and maintained.

Business Continuity and Disaster Recovery (Estimated cost \$70,000 annually)

1. All business critical data shall be backed up to at least 2 alternate media types on a recurring schedule daily with weekly rotation of media. (Estimated cost \$10,000)
 - a. USB Hard drives or other hard disk based technologies should be used daily with weekly rotation of media drives if portable devices are used.
 - b. Long-term archive media such as magnetic tape should be utilized for monthly, disaster recovery, and annual backups to ensure data integrity.
 - c. Off-site storage of monthly or semi-annual data should be placed at the YCCD Central Services area and another suitable off-site location identified.
2. Formulation of business continuity requirements for critical business operation centers should be formulated to ensure proper services could be administered during an emergency or crisis.
 - a. Business Office operations should be reviewed to allow for the operation of office functions in a remote environment to preserve the ability to service essential student functions. (Estimated cost \$10,000)
 - i. Laptop computers, portable printers, wireless alternate connectivity options should all be addressed, defined and documented to provide for Business Office operation.
 - b. All departments on the Columbia College campus will write a basic disaster recovery plan detailing all business-critical data locations, specialized equipment, and process requirements that serve as the essential function of departmental business.
 - i. A copy of the file will be kept on file in Technology Services.
 - ii. Updated process should be submitted bi-annually to ensure proper documentation of essential functions is maintained.
3. Investigation, pilot, and implementation of a Document Management system for campus use that has bridges to the online systems and will assist in disaster recovery. (Estimated cost \$50,000)
4. Work with YCCD to develop a secondary datacenter at Columbia college to maintain continuity during connectivity disruptions with the main district datacenter

Spring – 2011

Facilities (Estimated cost \$5,000 annually)

1. Continue to address facility issues through the Facilities Committee and align with the Facilities Master Plan, keeping in mind the above requirements for the success of the Technology Plan.
2. Ensure that Disaster Recovery plans include facility requirements or drawbacks in detailing business continuity plans.
3. The Security Master Plan initiatives will be referenced, implemented and maintained.
 - a. Special attention to the technology requirements of facility-installed solutions will be researched, implemented and maintained.

Conclusions

The intent of the Columbia College Technology Plan is to focus on technology needs and direct technology implementation and expansion over the next three years. This Plan contains a comprehensive view of current technology within the College and how that technology framework supports the College to achieve its mission. The Plan identifies seven strategic goals that will serve as guidelines for future technology support, replacement and expansion. While some goals are being actively addressed, others require serious planning, preparation, and budget. Adequate staffing acts as a restrictor for several key areas of growth and should be addressed as soon as budgetary supports can be realized. Overall, without proper investment in staffing, training and basic equipment, the College's technology framework will struggle to meet the needs of our expanding programs over the next three years.

Therefore, the College needs to establish a consistent funding process for basic technology needs. As additional funds become available funding should be set aside for technology infrastructure, maintenance, upgrades, and other routine changes. It should be recognized that technology has a built-in obsolescence period and must be upgraded regularly to ensure proper functionality while mitigating security risks. It must further be recognized that technology support requires a rapidly changing knowledgebase and must provide regular training opportunities and resources to staff and faculty.

It is important to remember that this Plan should be viewed as a living document. Annual reviews are imperative to the success of this Plan. The Technology Plan, if properly executed, should provide a dynamic structure for technology as it pertains to education and the business services of the College. Columbia College will continue to support the Information Technology and Media Services staff and the Technology Committee as they work to:

- Ensure that existing technology is appropriately supported to maximize its effective lifespan.
- Oversee the implementation of the Technology Plan and appropriate expansion of the technology infrastructure.
- Properly align the Technology Plan to the Educational Master Plan and other planning tools as appropriate.
- Continue to investigate emerging trends in technology and educational technology.
- Update the Plan annually.

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

Spring – 2011

Appendices

Appendix A – [YCCD Board Policy on Computer Use](#)

Appendix B - Computer Tiers – Replacement of old computers as of April 2010

Appendix C - [Columbia College Distance education Plan](#)

Spring – 2011