GAVILAN COLLEGE

Technology Master Plan
2014 - 2019

Supporting Educational Excellence Today with Tomorrow's Technology in Mind
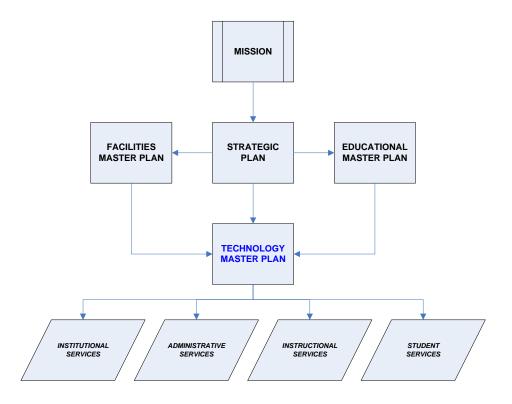
Table of Contents

Gavilan Community College faces many challenges in serving today's students:

A. Managing constrained resources

B. Providing ubiquitous access to all students

C. Keeping current on today's technology in order to ensure that Gavilan students will be prepared to enter the workforce.

D. Properly integrating new technologies into the teaching and learning environment, and ensuring the faculty and staff are properly trained, and programs are developed to assist the faculty in making this transition.

E. Applying appropriate technology in support of Student and Administrative Services

It is recognized that funding resources are limited, and Gavilan College must make critical decisions as to how to best use the resources available. The purpose of the Gavilan College Technology Plan is to provide a prioritization list that the College can utilize when making strategic technology and resource allocation decisions. This list is comprised of the highest priority initiatives, as approved by the various committees formed to develop technology priorities. It identifies the requirements necessary to support Gavilan's **Planning Process**:

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Mission:

In an environment that nurtures creativity stimulates curiosity, and emphasizes student learning, Gavilan College serves its community by providing high-quality educational and support services that prepares students for transfer, technical, and public service careers, lifelong learning and participation in a diverse global society. The basis for each and every plan developed by the college is to provide the guidelines necessary to achieve Gavilan College's mission.
(http://www.gavilan.edu/aboutUs.html)

Strategic Plan:

Gavilan College's Strategic Plan is a three-year plan that expresses the mission of the College, its core values, and specific objectives that support the core values. The Strategic Plan then becomes the central focus for Education, Technology, and Facilities planning.
(http://www.gavilan.edu/strategic_plans/Gavilan_StrategicPlan_2012_2017.pdf)

Educational Master Plan:

Gavilan College's Educational Master Plan is designed to provide a foundation upon which the instructional and support service needs of the college can be addressed and met. It takes the objectives and activities of the Strategic Plan and applies learning outcomes to them.
(http://www.gavilan.edu/master/)

Facilities Master Plan:

Gavilan College's Facilities Master Plan's key initiative is to develop multi-functional instructional spaces that can be used for many different learning environments (i.e., lecture, laboratory, distance learning, etc.) and meet the future diverse growth needs of the campus based on the Strategic Plan. The Measure-E Bond, passed March 2004, allowed for a new Bond Facilities Master Plan to be developed that identifies, organizes, plans and records the capital-outlay to bring the campus into alignment with the goals identified in the other related Plans (see Planning Process chart on Page 4).
(http://www.gavilan.edu/facilities/ - January 9th, 2001)
(http://www.gavilan.edu/bond/brp/brp.html - February 14th, 2006)
(http://www.gavilan.edu/facilities/documents/FMPupdate-20121009.pdf - 2012

Distance Education Master Plan Draft:

The Distance Education Plan draft is meant to be a guide for supporting initiatives that have been identified and developed through our Technology Master Plan, the Strategic Plan, and the Educational Master Plan, as well as through our Distance Education Best Practices document, that will be implemented to best support the overall vision of the campus. This plan will outline and identify initiatives necessary to support distance

learning at Gavilan College. This Plan will be reviewed and updated annually with the input from the Distance Education Committee, who is responsible for the ongoing review and updating of this Plan. Revisions of this document will be performed as necessary based on major revisions of dependent documents, such as the Technology Master Plan, Educational Master Plan, Strategic Plan, and/or Mission.

This Technology Master Plan is meant to be a practical outline for identifying and developing initiatives that will be implemented to best support the overall vision of the campus. This plan takes a more strategic approach (as opposed to operational approach) to outlining and identifying the technology initiatives necessary to support the campus. The Plan is not meant to be a document that has a "completion date." Rather, it is to be a living document that will be reviewed and updated *annually*. The Technology Committee is responsible for the ongoing review and updating of this Plan. Major revisions of this document will be performed as necessary based on major revisions of dependent documents, such as the Educational Master Plan, Strategic Plan, Facilities Master Plan, Distance Education Master Plan and/or Mission.

Acknowledgements

The planning and revision process for the Technology Master Plan involved the time and collaboration of many faculty and staff at Gavilan College. Content Development Workshops were held with campus groups, coupled with e-mail surveys being distributed, to solicit feedback, and one-on-one meetings were carried out with those individuals in Leadership roles to discuss their assigned Initiatives. The following are noted for their participation:

Academic Senate
Associated Student Body
Dean of Career/Technical Education
Dean of Liberal Arts & Sciences
Department Chairs
Digital Media Program Director
Distance Education Coordinator
District Technology Committee
Disability Resource Center
Head Librarian
Institutional Researcher
Media Services
MIS
President's Council
Public Information Officer
Student Services
Teaching & Learning Center
Vice President of Student Services
Vice President of Administrative Services

The purpose of the Technology Master Plan is to prioritize initiatives developed in this process and identify and clarify the technology resources needed to successfully implement these initiatives. This Plan will assist in the strategic decision making process for the District. This Plan was developed to be strategic in nature and, therefore, many of the initiatives involve performing feasibility studies, continuously researching and evaluating developments in technology as they apply to the College through the District Technology Committee and other appropriate groups, and investigating cost-effective improvements to the campus technology infrastructure for inclusion into the annual update of this Plan.

Funding issues were considered to be beyond the purview of this Plan. It is recommended that funding strategies be developed through collaborative discussion between relevant parties.

Planning Assumptions

A. All initiatives contained in the Plan were developed to directly support the visionary educational goals of the College, as articulated in the Strategic Plan, Educational Master Plan, and Facilities Master Plan.

B. The Technology Master Plan is one of the District's key strategic plans and plays a critical role in the success of the Strategic Plan, Educational Master Plan, Facilities Master Plan, and ultimately the College Mission.

C. As the detailed design and planning phases are implemented through the Technology Master Plan, the Management Information Systems (MIS) department will identify technology issues and initiatives to be incorporated into relevant plans.

D. A significant number of demands for technology-related support will compete for limited funding. Consequently, the use of resources allocated to technology will be driven by needs, which are identified and prioritized in this plan as the first step of a selection process involving appropriate campus committees and decision-makers.

The Gavilan College Technology Plan represents the development, refinement, and culmination of technology goals and objectives set by the College in the 1990s. During the 1990s and into the new millennium, the College laid an infrastructure, built a network, purchased appropriate hardware and software, built computer laboratories, provided multiple levels of staff and student training, augmented facilities, and launched technology-based instructional programs. Members of the Technology Committee led technology planning for the Educational Master Plan, and, in 2001, began, with the help of planning consultants, the process of gathering information and identifying goals for the Gavilan College Technology Master Plan 2002-2005.

As the Technology Master Plan 2002-2005 went through a series of phases, there were various levels of involvement from the campus community. Preparatory work included student, staff, and faculty surveys and meetings with deans, leadership teams, administrators, user groups, standing committees, and technical staff. These steps were performed to ensure proper understanding of the resources, needs, and desires of the entire campus community.

At the beginning stages of this Plan, there were over 100 key initiatives that involved or impacted technology. These initiatives came out of the Educational Master Plan, Facilities Master Plan, Telecommunication Technology Infrastructure Program (TTIP), including Total Cost of Ownership guidelines, and the State Chancellor's Office guidelines for Disabled Student Programs and Services. Initially these initiatives were prioritized as high, medium and low, and technology resources were identified for the highest priority initiatives. In Fall 2002, the Technology Advisory Committee reevaluated the initiatives and priorities based on what had been accomplished in the intervening months and created a Technology Master Plan 2002-2005 draft with a leaner set of priorities. This draft was presented to the full Technology Committee and then to other appropriate campus bodies (the Academic Senate, Department Chairs, the President's Council) for review, discussion, and modification. The result of that process is a final list of initiatives that contains the highest priorities related to the technology needs of the Institution, Instructors, Administrators, and Students. This constituted the main content of the Technology Master Plan 2002-2005. Several years later, on the heels of revisions to the Strategic Plan and Mission, as well as a complete Educational Master Plan and new Bond Facilities Master Plan, a 2nd Edition of the Technology Master Plan was developed with the assistance of a planning/consulting firm and based on a similar process of review, discussion, and modification (identifying completed, in process, and new initiatives) through feedback from the District Technology Committee and appropriate campus bodies. This revised list will be used by appropriate campus organizations to make funding and other decisions for approving technology related projects.

Since 2005, the District Technology Committee has continued to update many items listed in the Technology Master Plan. The major accomplishments during the last several years include:

completion of the major modules of the ERP system (on time and under budget); construction of a new data center; relocation of the MIS department; replacement of phone and voice mail systems with current technologies; and initial implementation of wireless access throughout the campus. Many additional initiatives have been completed campus wide and are listed below.

Completed Initiatives (2012-2014)

The Technology Master Plan 2012-2013 produced results in successful achievement of the following initiatives:

- Developed and adopted a Best Practices in Distance Education document with state guidelines in mind to guarantee that students with disabilities will be able to access Gavilan's distance learning programs.
- Completed the Best Practices in Distance Education document to provide and ensure quality courses for the Distance Education program. This document has been approved by the Academic Senate in April, 2012.
- Provided air conditioning for computer laboratories and classrooms.
- Implemented emergency alert system for faculty, staff and students (RAVE).
- Provided adequate bandwidth to support instruction for both on-campus and off-campus sites.
- Implemented a system to improve retention and support achievement and inform counselors promptly when students are flagged in the early alert process.
- Implemented CCCApply for Admission and Records application process.
- Investigate online assessment placement testing that will integrate with Banner.
- Provide computer support to the student assessment process as appropriate.
- Acquired 2 new copy machines for reprographics.

Initiative Organization

The Technology Master Plan encompasses all functional areas of the campus, and as such, the Initiatives stated herein vary greatly in their content and purpose. In order to successfully manage the Technology Master Plan, a hierarchy was developed. This hierarchy accomplishes the following objectives: (1) assigns Leadership to individuals who are competent in their respective Initiatives, thus providing the necessary structure for follow-up and implementation; (2) assigns Grouping of Initiatives to define the scope of what is covered and how they interrelate to one another; (3) assigns Prioritization so as resources and/or funding are made available, the proper Initiatives can be addressed based on their level of criticality [1 – most critical, 5 – least critical]; (4) assigns Status to each Initiative for tracking progress. This hierarchy is defined below:

Leadership:

Director – Disability Resource Center
- Assistive Computer Technology, Section 508 Resource

Dean – Career Technical Education (Vocational & Technical Services)
- Digital Media Program

Head Librarian
- Electronic Library
- Information Competency

MIS
- Infrastructure (power, network, AC, security, telephones)
- MIS Environment, Staffing, & Technical Support
- Centralized Technology Upgrades & Purchasing (hardware & software)
- Research & Development
- Computer Labs
- Multimedia Classrooms

- *Distance Education Coordinator*
- Distance learning training, support and awareness
- Systems support
- Video Conferencing
- Teaching and Learning Center

Vice President– Administrative Services
- Administrative Systems
- Environmental Conditions

Vice President – Student Services
- Student Services
- Computer-Assisted Student Placement
- Computerized Early Alert
- Distance Learning
- Electronic Data Collection

Grouping:

Student Services	– those Initiatives that directly address the students
Instructional Services	– those Initiatives that directly address the instructors
Administrative Services	– those Initiatives that directly address faculty & staff (not including instructors)
Institutional Services	– those Initiatives that directly embody the campus as a whole

Prioritization:

1 - Safety	– designed to address personal safety in regard to environmental management system (EMS)
2 - Security	– designed to address security (data and human) issues
3- Compliance	– various government laws and regulations demand specific compliance such as Section 508, FERPA, and OSHA. However, these regulations may or may not be safety or security issues where a compliance issue is either safety or security it should be so ranked.
4 - Cost Savings	– designed to provide long-term savings (ROI)
5 - Education	– designed to specifically enhance the educational experience
6 - Operations	– addresses functionality or items not falling under priorities noted above

Status:

Planning	– assigned to a Committee; feasibility study; solution research
Budget	– request for quote; budget allocation request
Acquisition	– purchase order completed; items and/or services ordered
Implementation	–configuration, installation, and/or construction underway; technical writing
Completed	– the Initiative has been put into practice; ongoing maintenance begins

Gavilan Community College Initiatives
STUDENT SERVICES

INITIATIVE	PRIORITIZATION	ESTIMATED COST	FUNDING SOURCE	STATUS
LEADERSHIP: Director – Disability Resource Center				
Reconvene the Section 508 task force to create an implementation plan to disseminate information and increase awareness of purchasing and/or utilizing accessible technology in regard to the approved Section 508 policy.	Compliance	Committee Time		Implementation Ongoing.
Increase the number of accessible stations well above and beyond the minimum percentage until every station affords access to students with disabilities campus-wide and off-site locations. With current technologies, we must centralize applications management and access. Server based software has been purchased when available. New software images will include accessible programs.	Compliance	$30,000	GF	Implementation Ongoing
Ensure that classrooms have the appropriate Assistive Listening Systems (ALS) as required by ADA.	Compliance	$40,000	GF	Planning
Identify ways to provide accessibility for programs such as: Go Print, Degree Works, TimeKeeper, Accuplacer, CybraryN, the library login program.	Compliance	Staff Time	GF	Ongoing
LEADERSHIP: Vice President - Student Services				
Implement an I.D. system with the bar codes, biometrics, and/or magnetic stripes for access to services and facilities and automated capture of attendance information (and integrate with ERP).	Security and Cost Savings	$100,000	GF	Planning
Use technology to provide an alternate way for students to access services such as health services, tutoring, assessment, etc. (including offsite locations).	Compliance Cost Savings	$10,000	GF, Grants	Planning
Provide online access to services for distance education students that are equivalent to the on-campus services.	Compliance Education	Staff Time	GF, Grants	Planning
Provide student email for students to interact with each other, staff, and/ or faculty.	Cost Savings & Education	$25,000	GF, Grants	Planning
Evaluate all new and existing instructional software and systems to determine their effectiveness.	Education	Staff Time	GF, State Funding	Planning
Expand and refine systematic and regular data screening to ensure accuracy; validation system (w/ERP).	Operations	$50,000	GF	Ongoing

Develop a means to identify and contact students who drop out of classes and do not return (integrate with ERP system).	Operations	$5,000	GF	Planning
Develop a system of prioritizing requests for fixes and enhancements to the student database systems (integrate with new ERP system).	Operations	Committee Time	GF	Planning
Provide counseling department with additional laptops to support students with the DegreeWorks program.	Education & Operations	$5000	GF	Planning
Provide counseling department with College Source Transfer Evaluation System .	Operations	$6000 annual fee	GF	Planning
Provide counseling department with Instant Rapport Counseling Chat software that integrates with DegreeWorks.	Operations	$12,000	GF	Planning
Provide counseling department and Career Transfer Center with Eureka Online software.	Operation	$4000 annual fee	GF	Planning
Implement the new version of CCCApply--online Admission Application Process.	Cost Savings & Operations	$18,000	GF	Planning
Replace Microfilm Machine and associated computer and printer for Student Records Transcripts.	Operations	$11,400	GF	Planning

Gavilan Community College Initiatives
INSTRUCTIONAL SERVICES

INITIATIVE	PRIORITIZATION	ESTIMATED COST	FUNDING SOURCE	STATUS
LEADERSHIP: Dean - Liberal Arts & Sciences				
Modernize the audio-visual systems in the classrooms. See Appendix D for classroom prioritization list and completed classrooms. Determine the appropriate time for equipment upgrades and identify funding sources for them.	Education		Measure E General Fund/Grants	Campus Renovation Ongoing
Provide appropriate equipment for the new Film and Television degree courses and Gavilan instructional video production.	Education	$20,000	GF/Grants	Planning
Provide document cameras as appropriate for instructional facilities.	Education	$10,000	GF/Grants	Planning
Upgrade TV Studio to high definition (HD).	Education	$50,000	GF/Grants	Planning
Provide 20 laptops with cart for mobile lab for student academic support.	Education	$25,000	GF/Grants	Planning
Provide new overhead project for ART 102.	Education	$6000	GF	Planning
Provide camera setup for ART department demonstrations.	Education	$21,000	GF	Planning
LEADERSHIP: Dean - Career Technical Education				
Upgrade monitors in BU110, BU111, BU118, MHG8, MHG 5, HOL 3.	Education	$40,000	GF	Planning
Upgrade classrooms in Morgan Hill and Hollister to "smart classrooms" with a ceiling-mounted projector and computer in each classroom.	Education	$30,000	GF	Planning
Purchase updated power cord and wire management system in HOL 3.	Education	$2000	GF	Planning
LEADERSHIP: Head Librarian				
Update the Library Technology Plan in accordance with state requirements.	Education	Staff Time	GF	Planning
Replace old laptops and batteries and include laptops for student learning and research in College's Technology Replacement Plans	Education	$36,000	GF	Planning
Provide air-conditioning for the library	Operations	$60,000	GF	Planning
Establish stable funding sources for electronic databases.	Education	$15,000	GF	Ongoing
LEADERSHIP: Distance Education Coordinator				
Provide training, awareness and support for faculty who want to engage in distance learning instruction.	Education	Staff Time	GF	Implementation is on-going
Provide Learning Management System (LMS) technical support for faculty and students.	Education	Staff Time	GF	Implementation is on-going
Research the feasibility and explore the possibility of shared instruction via video conferencing for our satellite sites to increase FTES for future funding.	Education	Staff Time	GF Grants	Planning

Develop and maintain the Distance Education Master Plan.	Education	Committee Time		Implementation is on-going
Provide a Gavilan Online Teacher Training Academy to ensure instructors are creating content that maximizes effective contact and ensures quality.	Education	Staff Time		Implementation
Continue the Distance Education Committee's purpose of planning, implementation and evaluation of policies, procedures, regulations, and best practices in Distance Education and forward its recommendations to the Academic Senate.	Education	Committee Time		Implementation is ongoing
Expand and develop online student services support for distance education students.	Education	Staff Time		Planning Implementation
Purchase, Implement and maintain media server	Operations	$10,000	GF	Planning
LEADERSHIP: Teaching and Learning Center, Instructional Technologist - Trainer				
Provide for regular staffing and leadership of the Teaching and Learning Center.	Education and Operations	$40,000	GF	Budget
Develop and deliver staff development and training.	Education	Staff Time		Planning Ongoing
Define and publish the mission and goals for the Teaching and Learning Center.	Operations	Staff Time		Planning
Establish a minimum maintenance budget for the Teaching and Learning Center.	Operations	$2500	GF	Budget
Provide 8 new faculty PC computers per current college standards.	Operations	$7000	GF	Budget
Purchase an additional wireless access point for the library's existing access point to provide the ability for faculty and staff to successfully access our wireless network while working in the Teaching and Learning Center.	Operations	$600	GF	Budget

Gavilan Community College Initiatives
ADMINISTRATIVE SERVICES

INITIATIVE	PRIORITIZATION	ESTIMATED COST	FUNDING SOURCE	STATUS
LEADERSHIP: Vice President - Administrative Services				
Provide adequate staffing support and library security.	Safety Security	$45,000	Measure E	Planning
Implement a document process allowing for electronic signatures. Implement Banner Workflow once a new version is available through Ellucian.	Operations Cost Savings	$50,000	Measure E	Future Implementation
Evaluate use of all new and existing facilities, upgrade equipment, and implement improvements.	Education	$200,000	Measure E	Implementation in progress
Identify computer staff needs and recruit/hire as appropriate to meet the state TCO guidelines (*Improve response times and support for campus users. Note: See TCO Section, Appendix B, for detail on technical support initiatives.*)	Operations		GF	Some staff were hired, but still short of TCO standards
Continue funding for IT contract personnel with cost-effective measures in place.	Operations	$150,000	GF/Measure E	Ongoing costs depend upon the changing needs.
Complete library climate control project.	Operations	$600,000	Measure E	Budget In progress
Acquire outdoor electronic message boards to display pertinent information about the college, placed in strategic areas for public viewing.	Operations		GF / Grants	Planning
Implement flat-screen "message boards" throughout the campus as a method to keep students, staff, & faculty abreast of events and important information.	Operations			In progress

Gavilan Community College Initiatives
HUMAN RESOURCES

INITIATIVE	PRIORITIZATION	ESTIMATED COST	FUNDING SOURCE	STATUS
Establish minimum technology competency levels for staff and faculty.	Operations	Committee Time	GF	Training is available, but levels have not been established.
Include the minimum technical competencies that are needed to do the job in the job announcement and apply those competencies during candidate selection.	Operations	Staff Time	GF	Planning

Gavilan Community College Initiatives
BUSINESS OFFICE

Analyze cost for bringing payroll processing "in house" by integrating it into the existing Banner system.	Operations	$260,000	GF	Planning

Gavilan Community College Initiatives
INSTITUTIONAL SERVICES

INITIATIVE	PRIORITIZATION	ESTIMATED COST	FUNDING SOURCE	STATUS
LEADERSHIP: Public Information Officer				
Implement a Content Management System (CMS) for the Gavilan website.	Compliance Cost Savings Education Operations	$100,000	GF	Planning
Transition from primarily print-based to web-based publications such as: schedule of classes, catalog and other district print materials.	Compliance Cost Savings Education Operations	Staff Time $10,000 Server	GF	Planning On-going
Establish standards and guidelines for electronic publishing. This information will be included in the Gavilan College Style Guide.	Compliance Education Operations	Staff & Committee Time		In progress
LEADERSHIP: MIS				
Prepare a disaster recovery strategy. Provide backup and recovery hardware and software to provide network services following a disaster.	Security Operations	Staff Time $250,000	GF Grants	Planning & Implementation
Add a remote desktop management system.	Cost Savings	$75,000	GF	Planning
Upgrade to a voice-over-IP (VOIP) system.	Cost Savings and Operations		GF or Grants	Planning
Purchase a network management system for server monitoring.	Cost Savings and Operations	$50,000	GF	Implementation
Develop a technology resource clearing house for monitoring and coordinating equipment and site license purchases and maintain an up-to-date list of college equipment holdings so that sharing, exchange, and redistribution of resources can be easily coordinated (Asset Management System).	Cost Savings Operations	$15,000 (50%)	GF	Planning
Ongoing implementation of the technology renewal program.	Operations Education	$800 / PC $900-$1200/laptop	GF Grants	Ongoing Budget &

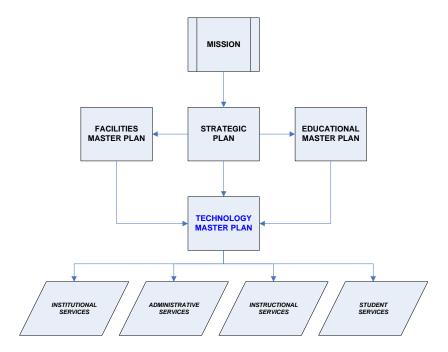|				Acquisition
Provide funding for infrastructure, including spare parts, memory upgrades, data drops, phone drops and new equipment.	Cost Savings and Operations	$100,000	GF	Budget & Acquisition
Implement routine, scheduled maintenance for network hardware.	Cost Savings and Operations	$50,000 per year	GF	Planning
Provide training program for MIS technicians on computer hardware & software being utilized on campus.	Cost Savings and Operations	Staff Time $20,000	GF	Ongoing
Develop a formal MIS/end-user education & communication plan.	Cost Savings and Operations	Staff Time	GF	Ongoing
Ensure all faculty & staff members have computers to match level of need, including laptops as appropriate.	Operations	$900 / PC $900-$1200/laptop	GF	Ongoing Budget & Acquisition
Provide a satellite video conferencing facility and distance education classroom. (Video conferencing courses currently held in Library 100).	Operations	$50,000	GF or Grants	Planning
Provide 24 x 7 operations and maintenance of the technology infrastructure.	Operations	$90,000	GF	Budget
Establish information technology guidelines and procedures.	Operations	Staff Time	GF	Ongoing
Perform periodic security assessments.	Operations	Staff Time	GF	Ongoing

Appendices

A. Technology Master Plan Survey

B. Statewide TCO Technical Support Guideline Comparison

C. Online References

D. Smart Classroom Prioritization List February 4, 2003

E. Standards for Hardware, Software, the Web, Network Management and Wireless

F. Desktop Computer Replacement Plan

G. 2002-2005 Completed Initiatives

H. 2006-2008 Completed Initiatives

I. 2009-2011 Completed Initiatives

Survey Report

In order to acquire feedback as to the technology needs of the campus for inclusion into future updates of this Plan, the following survey has been provided. To assist in this process, the following general questions have been provided to stimulate thought in this matter, as well as the workflow of the document planning structure for Gavilan College:

Please note that this survey is not meant to be exhaustive, so feel free to provide additional feedback as necessary. All information is to be submitted in e-mail format to help@gavilan.edu. The Gavilan College technology staff would like to thank you in advance for your time and participation in this endeavor!

1) What technologies would enhance the student educational experience on campus?
2) What technologies would make daily administrative tasks more efficient?
3) What technologies would assist in better instructor-student interaction?
4) What technologies would be beneficial for preparing students better for the workforce?
5) What technologies would appeal most to potential students deciding on a college?
6) What technologies would help staff members collaborate most effectively?

Overview:

The California Community College Chancellor's Office (CCCCO) has developed a Statewide Technology Plan commonly referred to as Technology II. A key section of the CCCCO Technology II Plan addresses the fact that "When educational institutions acquire computer hardware and software, they generally do so without factoring in the costs to support the equipment and infrastructure. As a result, there is often a lack of support to maintain, repair and improve performance of the equipment, as well as a lack of staff for training faculty, staff, and students. This creates delays and inefficient use."[1]

The concept of determining the full cost of ownership (one-time and on-going costs, support, training, and replacement) is called Total Cost of Ownership (TCO).

Gartner Group and the Telecommunications and Technology Advisory Committee (TTAC) worked to determine the appropriate TCO model for the community college environment. The purpose of this model is to serve as a guide for developing a baseline minimum requirement for Information Technology TCO. TTAC will review this model annually to determine adjustments to it as appropriate.

As an example of TCO, the cost estimate for a PC is $3,506 per PC. This cost is comprised of the following model[2]:

TCO Components	Cost	Percent of TCO Cost
Hardware and software	$1,794	51%
Systems management support	762	22%
End user support	417	12%
Development support	148	4%
Communications support	60	2%
Training	325	9%
Total	**$3,506**	**100%**

Therefore, as a college purchases a computer (i.e., $1,794), they should also budget for and allocate an additional $1,712 to support that computer over its expected useful life of 3 years. For more information on the TCO model, please refer to the CCC Technology II Plan.

The TCO initiative model is categorized into four "Computing" areas: Student, Faculty, Administrative and Classified Staff, and Support Baselines (staffing). These areas identify the recommended minimum computing hardware, software, and support levels that Community Colleges should be providing.

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[1]CCCCO Tech. II Plan; Cost to Implement the Technology II Strategic Plan, pp. 21.
[2] CCCCO Tech. II Plan; Cost to Implement the Technology II Strategic Plan, pp. 23.

Because technical support is such a critical area to this campus, the TCO section of the Technology Plan will focus on the number of technical staff required to provide adequate support to the Gavilan campus community. In order for Gavilan's Philosophy and Vision Statements, as well as its Educational Goals to be successful, technical support issues must be addressed.

The chart on the following page summarizes the technical support staff guidelines, and compares this guideline with current Gavilan College technical support levels.

Statewide TCO Minimum Technical Support Baseline Initiatives

The following Chart summarized the statewide-recommended minimum baseline staffing requirements under which a Community College should be operating. The intent of this chart is to show the comparison of the minimum recommended levels of support staffing with current levels of Gavilan Community College. The chart can be summarized to reflect that compared to the statewide minimum operating baseline recommendations, Gavilan College has a technical support staffing shortfall of approximately 20 technical support positions.

*FTE(S or F) = Full-Time Equivalent; S = Staff, F = Faculty

TCO Support Staff	State Guidelines	Gavilan (State Recommended)	Gavilan Actual as of 2/14	Gavilan Deficit
Computer Technician	1 Tech/ 125 computers	8	4	**-4**
Computer lab Monitor	1 Lab Monitor/75 Computers	10	0	**-10**
Network Engineer/ Technician	1 Network Eng./ 500 Computers	2	1 (contract labor)	**-1**
Webmaster/ Administrator/ Designer	1/4000 FTES	1.5	1	**-0.5**
Instructional Designer/ Technology Sp.	1/100 FTEF	1.3	0	**-1.3**
Multi-media Technician	1/300 FTEF	0.5	.75	**+.25**
Multi-media Production Sp.	1/200 FTEF	0.5	.75	**+.25**

TCO Support Staff	State Guidelines	Gavilan (State Recommended)	Gavilan Actual as of 2/14	Gavilan Deficit
Technical Training Sp.	1/300 FTE (fac and staff)	1	0	-1
Instructional Application Developer	1/ 200 FTEF	1	1	0
Communications Tech.	1/1000 FTE	1	0	-1
Help Desk Technician	1/1000 FTES	1.2	0	-1.2
Technical Manager	1/ 500 pc's	2	1.5	-0.5
Administrative Systems Support	1/2000 FTES	.5	.5	0
Total w/ Approved Hires		30.5	10.5 MIS=9.0 including contract	-20.0

The TCO Support Staff Positions Definitions:

Computer Technician: Installs, configures, repairs, and maintains computer hardware and software including servers and assistive technologies. Maintains network connectivity and provides customer support.

Computer Lab/Classroom Technical Assistant: Provides simple technology maintenance and assists faculty and students during and out of class with technology issues.

Network Engineer/Technician: Designs, installs, configures, repairs, and maintains campus backbone(s), networks, and WANs.

Webmaster/Web Administrator/ Web Designer: Designs and maintains the district's/ college's Web infrastructure and Web site.

Instructional Designer/Technology Specialist: Assists faculty with integrating technology into curriculum.

Multi-Media Technician: Installs, configures, repairs and maintains multi-media equipment (satellite downlink, broadcast equipment, microwave, head-end delivery, etc.)

Multi-media production Specialist: Supports faculty with multi-media production, delivery, and operations.

Technical Training Specialist: Trains staff and faculty. Runs a technology-training center.

Instructional Application Developer/ Administrator: Designs, installs, configures, repairs and maintains software applications to support instruction (e.g., systems analyst, programmer, systems administrator roles) to include support for email, library systems, course management software, list serves, and news-feeds.

Communications Technician: Installs, configures, repairs and maintains communications systems and wiring.

Helpdesk Technician: Provides a central point of contact to receive reports of technical problems from students, faculty, and staff. Documents all requests and notifies appropriate service area. Provides technical answers to questions.

Technical Manager: Manages technical personnel and sub-functions.

Director or higher-level manager who supports instructional systems: Manages overall instructional technology function. Acts as liaison with academic administration.

Appendix C: Online Resources

Gavilan's Library Technology Plan

http://www.gavilan.edu/library/techplan.html

Gavilan's Distance Education

http://www.gavilan.edu/disted

Gavilan's Disability Resource Center

http://www.gavilan.edu/drc

California Community Colleges Chancellor's Office

Access Guidelines for Students with Disabilities, January, 2010

http://www.htctu.net/dlguidelines/dlg_index.html

California Community Colleges Chancellor's Office

*Guidelines for Producing Instructional and Other Printed Materials in
Alternate Media for Persons with Disabilities*, August. 1999

http://www.htctu.net/publications/guidelines/altmedia/altmedia.htm

Gavilan's Disability Resource Center Section 508 Website
http://www.gavilan.edu/drc/Gavilan508.html

Voluntary Product Accessibility Template (VPAT)
Voluntary Product Accessibility Template (VPAT) or
http://www.gavilan.edu/drc/VPAT_State_v1.6_12655.pdf

Smart Classroom Prioritization List

May 17, 2013

Completion Scheduled Summer 2011 with Measure E Funding

	Room	Item	Cost	Comment	Total	Cumul.Cost	Completed
1	MHG 3, 4, 5, 8, 10, 11, 12, 13	Standard Multimedia	2,500	Resources Needed	20,000	20,000	
2	ART 103	Drop-in Lab	35,000	Title V	35,000	55,000	In Process
3	MA 101	Studio Classroom	12,000	STEM	12,000	72,000	In Process
4	MA 103	Projector Upgrade	8,000	STEM	8,000	80,000	In Process
5	HOL 1, 6	Standard Multimedia	2,500	Resources Needed	2,500	82,500	
6	TH 125	Lecture Hall Multimedia	22,000	Title V	22,000	104,500	In Process
7	PS 101, 102, 105	Studio Classrooms	TBD	STEM	TBD	104,500+	In Process

Completed and/or Renovated Classrooms: Library, MH, SS 210, LS 101, HU 102, HOB, MU 101, APE 120, APE 121 as of 2011.

Completed and/or Renovated Classrooms: Library Computers, Laptop Batteries in Library, SS 214, SS 214, SS 210, SS 203, SS 205, SS 206, Art 103 Projector, LS 101, LS 102, LS 103, LS 106, MA 102, HOL Laptop, 3 TV/VCR/DVD

The utilization of Measure E Bond funding under the Bond Facilities Master Plan permits Gavilan College to fully implement Smart Classrooms campus-wide.

Appendix E: Standards for Hardware, Software, Web, and Network Management

The Technology Master Plan 2002-2005, Initiative 3B, stated that there should be "Establish standards for hardware, software, Web, and network management". The following Appendix items address those points.

Exhibit E-1   Hardware Standards

Exhibit E-2   Software Standards

Exhibit E-3   Web Standards

Exhibit E-4   Network Management Standards

Exhibit E-5   Portable DLP/LCD Projector and Smart Classroom Standards and Specifications

Exhibit E-6   Wireless Hardware and Management Standards

Exhibit E-1: Hardware Standards

Procedures for Hardware Purchases

Addressing the hardware purchases, any hardware purchased for Gavilan College must be approved by the MIS department. This will insure that the hardware will be compatible with our existing hardware, software and network. Only Gavilan College hardware, including Associated Student Body and TJ Owens Gilroy Early College Academy (GECA) hardware approved by MIS, will be connected to the Gavilan computer network. Use the following procedures to initiate new purchases.

1. Contact MIS for a current hardware quote or to discuss appropriate configurations for computers, printers and any other computer hardware required. On-site support contracts for 3 to 5 years must be included in the purchase.

2. The vendor must ensure that their product meets the 508 standards and/or has the capability to use assistive software and hardware. Attach statement of compliance or Voluntary Product Accessibility Template (VPAT) with purchase requisition.

3. Attach the quote provided by MIS to your Purchase Requisition, and obtain required budget program numbers and signatures.

4. Forward the completed Purchase Requisition and quote to MIS for signature.

5. MIS will forward the signed, completed Purchase Requisition to the Purchasing Department for ordering. The Purchasing Department will forward to MIS any Purchase Requisitions for hardware that are not signed by MIS.

Macintosh Computers:

If a specific lab, course, or occupation requires software that can only operate on, or is the industry standard for a Macintosh computer, that lab and the faculty assigned to teach courses in that lab will be allowed to purchase an appropriate Macintosh computer. Exceptions must be brought to the District Technology Committee for discussion and recommendation. The recommendation will then be forwarded for administrative consideration.

Laptop Computers:

Only current Gavilan College laptops can be connected to our network. Laptops are a convenience and are not recommended as desktop replacements because they cost more, have a shorter life, MIS support is more expensive and time consuming, and they can be taken off campus, outside of our firewall and virus protection. MIS is able to support the laptops checked out at the Library because they all have the same configuration which can be imaged, and user data does not have to be backed up and restored. Laptops will not be a standard desktop replacement. Exceptions must be brought to the District Technology Committee for discussion and recommendation. The recommendation will then be forwarded for administrative consideration.

Handheld Wireless Devices:

Handheld wireless devices, such as mobile phones and tablets (iPAD, iPhone, Android, Blackberry, Windows Mobile phones, smart-phones, etc.) are not supported as Gavilan enterprise devices. These are treated as personal devices, and their support is the responsibility of the individual purchasing the item. If these devices are purchased with Gavilan funds, a 3 to 5 year support contract must be included with the purchase. Exceptions must be brought to the District Technology Committee for discussion and recommendation. The recommendation will then be forwarded for administrative consideration.

MIS can provide information and instructions on how to configure the devices for our Internet and email access only. Assistance with user's functionality and training can be obtained at the Teaching and Learning Center.

Streaming Media:

There is a need for streaming media to enhance the course work especially for distance learning courses and students. Questions still remain on the feasibility of infrastructure and server capabilities to provide streaming media services. In addition, current MIS staffing cannot support the needs of streaming media.

Hardware Grant Proposals:

Any grant proposals for new hardware or software need to follow the procedures for hardware and software purchases in Appendix E-1 and E-2 prior to submitting the grant.

Exhibit E-2: Software Standards

Procedures for Software Purchases

Addressing the software purchases, any software purchased for Gavilan College must be approved by the MIS department. This will insure that the software will be compatible with our existing hardware, software and network. Use the following procedures to initiate new purchases.

For individual software purchases:

1. Contact MIS for a current software quote or to discuss appropriate configurations for your software requirements. Annual software support must be included and will be the responsibility of the ordering department.

2. The vendor must ensure that their product meets the 508 standards and/or has the capability to use assistive software and hardware. Attach statement of compliance or Voluntary Product Accessibility Template (VPAT) with purchase requisition.

3. Attach the quote provided by MIS to your Purchase Requisition, and obtain required budget program numbers and signatures.

4. Forward the completed Purchase Requisition and quote to MIS for signature.

5. MIS will forward the signed, completed Purchase Requisition to the Purchasing Department for ordering. The Purchasing Department will forward to MIS any Purchase Requisitions for software that are not signed by MIS.

6. Following implementation, evaluate the software and systems to determine their effectiveness and submit evaluation to your administrator.

For Gavilan computer lab purchases:

1. The Deans and Department Chairs responsible for the various labs will meet with MIS prior to the end of each term to discuss new software requirements and to collect the software needed for each lab for the upcoming term. The schedule for this is:

    - December for the upcoming Spring term
    - April for the upcoming Summer term
    - May for the upcoming Fall term

2. Any new software purchases for labs will follow the items 1 through 4 (above) for individual software purchases.

3. MIS will create, test and deploy any new software images required for the various student labs prior to the start of the new term. This will be scheduled during the semester breaks.

Exhibit E-3: Web Standards

Web Standards

The District aims to ensure that all official pages on the District website are accurate, up-to-date, and accessible (see Section 508 Standards.)

1.0   Official Web Sites may be created by the District, college, and the divisions, departments, and other subdivisions therein. The official home page is the web page that serves as the initial entry point to the institution's web site.

    1.1   Official web pages may be established only for legitimate educational purposes to enhance the District's educational mission and to facilitate the educational process of the District. Official web pages are created for the express purpose of disseminating District educational and administrative information.

    1.2   These web pages are the property of the District and are intended to be closed forums. As such, the district reserves the full right and authority to regulate and limit access to them, and to regulate the content of the items posted so they are consistent with the educational purposes of the District.

    1.3   Persons wishing to post items on an official web page pertaining to the educational mission of the college may do so under the supervision of the responsible administrator, director, or advisor.

2.0   Faculty, staff, and students of the District may establish "personal" web pages that utilize the District's electronic communications systems if the web page is consistent with District standards and does not violate applicable laws, and is established for legitimate educational purposes to enhance the mission of the District.

    2.1   Web pages utilizing the District's electronic communications systems are not intended to constitute open forums. The District reserves the right and authority to regulate use of District servers to be consistent with the educational purpose of the District.

3.0   Standards and guidelines for the development and maintenance of web pages are established to provide consistency and accuracy of information published on the internet.

    3.1   The District reserves the right to require use of content or design elements on District pages, including, but not limited to logos, templates, navigational bars, college colors/fonts, and links to the home page. These requirements are detailed in the Gavilan College Style Guide.

4.0   The internet is a fluid environment that offers access to a wide range of information. While the district assumes responsibility for the accuracy and appropriateness of official District web pages, the District is not responsible for personal web pages. Users who believe the content of a personal page is offensive, obscene, violates District policy, or is inconsistent with the generally accepted norms for web page content may register a formal complaint by contacting the Director of Public Information at (408) 848-4724.

5.0 Links to other web sites contain information that is created, published, maintained, or otherwise posted by organizations independent of the District. The District is not responsible for the content of linked web sites and does not endorse, approve, certify, or guarantee the accuracy of any such information.

Exhibit E-4: Network Management Standards

Network Management Standards

The District aims to ensure that all network management standards are accurate, up-to-date, and accessible for instruction, student services and administrative services both on campus and off-campus.

- Usability-The system does what it is supposed to do ensuring efficiency from the user's perspective.
- Reliability -The system meets availability requirements. (24/7 uptime)
- Performance-The system performs in an adequate manner based on contemporary standards.
- Security-The systems ensures data security, integrity and appropriate access.

We need adequate bandwidth to support instruction for both on-campus & off campus sites *Discussion with the Chancellor's Office needs to be addressed to update our DS-3 with CENIC.*

1.0 Plan to increase the speed of the network backbone. *The minimum standard for any new or renovated buildings should be at least 10GB per second.*

2.0 Standardize network hardware including switches and be consistent with vendors.

3.0 Ensure that we have QoS (Quality of Service) enabled equipment that will let campus needs determine service levels.

4.0 Establish wireless capability for the college district at the current wireless standards or to match the student's current hardware.

5.0 Establish remote centralized management by testing and monitoring all our networking equipment to facilitate efficient tech support. *Automatic alerts need to be sent to network managers.*

6.0 Establish equipment redundancy to eliminate single points of failure in order to attain our service levels, i.e. 24/7 availability, UPS battery backup protection.

7.0 Provide secure, remote access for Gavilan employees to work from remote locations.

8.0 Provide a system-wide notification of changes in system operations and maintenance schedules.

9.0 Provide a secured environment to ensure integrity and privacy to comply with government standards to include physical connectivity to the network.

10.0 Plan for a network that includes the capability for new technology services and/or infrastructure. For example, this may include video and voice over IP, i.e. convergence.

11.0   Establish the capability of supporting network intrusion, detection, prevention and logging. This includes network access accounting.

12.0   Continue to incorporate anti-virus software and malware protection for the network and desktop stations.

13.0   Control Gavilan network access to external networks.

Exhibit E-5: Portable and Permanent/Fixed DLP/LCD Projectors and Smart Classroom Standards and Specifications

The following specifications describe minimum requirements for DLP/LCD Projector and Smart Classrooms:

Portable DLP/LCD Projectors:

Portable DLP/LCD Projectors will have at a minimum: A contrast ratio of greater than 220:1 and brightness greater than4000 Lumens with inputs for 1-VGA, 1-DVI, 1-"S-Video" and 1-composite video, 1024 x 768 minimum Display Resolution, and audio input for each. Each must also have built-in Closed Caption Decoding capabilities.

The following products currently meet minimum standards: Sharp PG-D50x3D, Sharp PG-D45x3D, and Sharp PG-D40w3D.

Permanent DLP/LCD Projectors:

DLP/LCD Projectors for permanent Smart Classroom installations will have at a minimum: A contrast Ration of greater than 2500:1 and Brightness greater than 4500 Lumens with inputs for 2-VGAs, 1-DVI and/or HDMI, 1-"S-Video", 1-composite video with audio input for each and have a 1024 x 768 minimum Display Resolution. Each must also have built-in Closed Caption Decoding capabilities. Lecture Halls/Theater may require a long throw lens to cover the distance from the projection booth to the video screen.

The following products currently meet minimum standards:
Projectors with fixed lenses: Sharp PG-D50x3D, Sharp PG-45x3D, and Sharp PG-D40w3D. Projectors with Interchangeable Lenses: Sharp XG-P610x, Sharp XG-PH70x, Sharp XG-P560W and Sharp XG-C465x-L.

DLP/LCD Projector Control Panels:

DLP/LCD Projector Control Panel will manage all aspects of the Instructor's Desk/Station and its components. Desktop and Laptop Computers, Blu-Ray/DVD/CD Player, Sound System, Motorized Projector Screens, Document Cameras, Live Video Cameras/Decks, Microscope Cameras, etc.

Lecture Halls/Theater will have separate Audio Mixer to manage the volume for the Control Panel, Desktop and Laptop Computers, Blu-Ray/DVD/CD Player, Cable TV Tuner, MP3 Player, Wireless Instructor's Microphones, and Assistive Listening System into a three zone Stereo Audio Amplifier.

Each Instructor's Control Panel Desk/Station will have a Blu-Ray/DVD/CD Player, a separate TV tuner wired with Cable TV, 2-VGAs, 1-DVI-I and or HDMI, S-Video, and composite video signals wired through the walls to the DLP/LCD Projector. Stereo sound from each will reach a stereo audio amplifier and stereo speakers or powered speakers. The control panel and/or input

panel shall be located nearest the front of the room within reach of the presenter and safely away from students and instructors classroom traffic.

The following products currently meet minimum standards:
Projector Control Panel: Smart Panel or Pixie

Three Zone Audio Mixer: Behringer Ultrazone ZMX82103 Zone Audio Mixer

Stereo Audio Amplifier: Crown Audio XLS 1500

DPL/LCD Projector Mounts:

DPL/LCD Projector Mounting systems will be universal (so as not to obsolete the mount for future DPL/LCD Projector replacements) and use the same locking system/key throughout campus.

The following product meets minimum standards: "Chief RPMAU" Universal Locking Keyed (Chief # 701) Security Projector Mount with mounting kit.

Sound System:

The sound system shall be wired for stereo playback and have enough volume appropriate for the room size. Typical classrooms can use powered speaker systems rated at 100 watts or greater. Larger Lecture Halls/Theater need powered speakers greater than 300 watts or a separate stereo amplifier system greater than 300 watts with separate speakers rated for over 300 watts of continuous power.

Lecture Halls/Theater will have separate Audio Mixer to manage the volume for the Control Panel, Desktop and Laptop Computers, Blu-Ray/DVD/CD Player, Cable TV Tuner, MP3 Player, Wireless Instructor's Microphones, and Assistive Listening System into a three zone Stereo Audio Amplifier. The three zone Audio Mixer will feed the sum to the classroom's Stereo Audio Amplifier, Assistive Listening System transmitter, and an output for a future auxiliary video audio feed.

In Lecture Halls/Theater, instructors will have wireless microphones for use with the classroom's sound system. A three zone Audio Mixer will control each of the instructor's wireless microphone.

The following products meet minimum standards:
Powered Speaker System: Cambridge, Extreme 2.1 or current equivalent.

Minimum Separate Speaker System: JBL MRX512M 12" Speaker

Three Zone Audio Mixer meeting minimum standards: Behringer Ultrazone ZMX8210

Separate Audio Amplifier with minimum standards: Crown XLS 1500

Wireless Instructor's Microphone standard: Senniheiser EW312/335 G3A ("A" frequency range)

Blu-Ray/DVD/CDPlayer with separate Cable TV Tuner:

Multi-Format Blu-Ray/DVD/CD Player with a separate Cable HD TV tuner will be used at all Instructor's Desk/Station.

The following Blu-Ray/DVD/CD Players meet minimum standards: Sony BDP-S580 3D Blu-Ray Disc Player.

Separate Cable TV Tuner meeting minimum standards: Extron AVT 200HD

Video Screen:

Video projector screen should be standard white square format with a High Contrast Matte White fabric and appropriate for the number of people and the size of the room. Typical size classroom can have pull down screens, however, Lecture halls and screens larger than 8 feet should be motorized with a Remote and Automated Screen control with the Projector Control Panel.

The following products meet minimum standards:
Pull down screens: Da-Lite Model "C" with CSR" Square Video Screen with High Contrast Matte White fabric.
Motorized screen: Da-Lite Contour Electrol Screen Square Video Screen with High Contrast Matte White fabric and requires a Da-Lite Wall Mounted and Automated Remote.

Assistive Listening System (ALS):

Lecture Halls/Theater will have built in independent Assistive Listening System for the Hearing Impaired. Transmitter shall broadcast audio from the instructor and projector sound system (Desktop and Laptop Computers, Blu-Ray/DVD/CD Player, Cable TV Tuner, MP3 Player, Wireless Instructor's Microphones, Assistive Listening System) to a minimum of 8 individual receivers no less than 70 feet. ALS shall also transmit to no less than six separate channel/frequencies with headphones and inductive neck loops for hearing aid users. Rechargeable battery and charging station shall also be included as well ADA Signage for each classroom.

Minimum equipment standard: Senniheiser SR 2020-D -US with EK 2020 Bodypacks

Procedures for Portable DLP/LCD Projectors and Smart Classroom Purchases

Gavilan College Media Services will check and approve all purchases for portable DLP/LCD Projectors and permanent Smart Classroom installations. Compliance with the following Gavilan College standard will ensure compatibility with the college's current hardware, wiring and provide efficient A/V support with a minimum of down time.

Use the following procedures to initiate new purchases.

1. Contact Media Services for a current hardware quote or to discuss appropriate configurations for portable DLP/LCD Projectors or Smart Classroom with approved vendors.

2. Attach the quote provided by Media Services to your Purchase Requisition, and obtain required budgetary program numbers and signatures.

3. Forward the completed Purchase Requisition and quote to Media Services for signature.

4. Media Services will forward the signed and completed Purchase Requisition to the Purchasing Department for ordering. The Purchasing Department will forward to Media Services any Purchase Requisitions for portable DLP/LCD Projectors or Smart Classroom installations that are not signed by Media Services.

Exhibit E-6: Wireless Hardware and Management Standards

1.0 Gavilan College will have a standard wireless LAN backbone, securely and efficiently supporting its entire on-campus student population with the following capabilities:

- Campus-wide wireless network availability to students supporting the latest standards
- Control over rogue wireless network access points and approved RF frequencies
- Management of multimedia applications via QoS configurations on the wireless devices
- Low power consumption to comply with California State "green" initiatives
- Seamless roaming capabilities as students move from one campus location to another
- Failover capabilities for 24x7 functionality
- Load balancing among wireless devices to evenly distribute use when possible
- Support of multiple VLANs and multiple SSIDs

2.0 Gavilan MIS department has complete control of the wifi spectrum within the Gavilan district.

Appendix F: Desktop Computer Replacement Plan

Gavilan Community College faces many challenges in serving today's students, including budgeting, staffing, regulations, and technology management. Most of the issues related to technology have been discussed and prioritized in the Gavilan Technology Master Plan, which was approved by the Gavilan College Board of Directors.

Some of the challenges mentioned in the Technology Plan Executive Summary:

    A. Managing constrained resources.

    B. Providing ubiquitous access to all students.

    C. Keeping current on today's technology in order to ensure that Gavilan's students will be prepared to enter the workforce.

    D. Properly integrating new technologies into the teaching and learning environment, and ensuring the faculty and staff are properly trained, and programs are developed to assist the faculty in making this transition.

    E. Applying appropriate technology in support of Student and Administrative Services.

The Chancellor's Office has stated in its Technology II Plan that a computer has an expected useful life of 3 years.

Gavilan's Technology Plan states that computers in classrooms should be replaced every three years in order to keep pace with the level of instruction/proficiency demanded by industry and education.

This document demonstrates continuation of a plan for the implementation of new computers in the classrooms, and for an upgrade of faculty/staff computers as a result of reusing technology leaving the computer labs during the implementation process.

The Measure E bond had set aside monies for computer replacement and this was used during the past four years to keep the campus computers updated. The computer replacement bond funds that were originally defined in the 2009-2014 Technology Plan have been fully expended. At the start of the first three-year cycle, the campus purchased newer computers with increased capacity because of the replacement plan. Since then, funding has not been available to continue the three-year cycle of keeping the computers current.

In 2014, additional Measure E and instructional equipment funding was allocated to continue implementation of the computer replacement plan.

Gavilan is striving to be the "College of Choice". The modernization of the computer infrastructure on campus is needed to comply with that directive, and to remain competitive in the near future.

Implementation

Background:

The Gavilan College Technology Plan prioritizes computer needs, and it states that computer classroom labs should be updated first and maintained current as funding permits. Once the labs are properly equipped, money can be spent on other areas such as faculty/staff computers. As part of the plan, it is suggested that the computers in the labs be recycled for use as a faculty/staff computer if possible.

Gavilan has approximately 1100 computers on campus. With an expected life of three years, that means 330 computers need to be replaced every year to keep the machines current.

Figure 1 below shows the age of lab computers on campus.

All of the district's machines can currently run the latest versions of Office, anti-virus and spyware software under the Windows XP operating system. Most labs have been upgraded to Windows 7, and any new computer systems purchased will be loaded with Windows 7 as well. Older machines will need to be upgraded with memory to run the Windows 7 operating system, and most will need to be replaced. Since Windows XP as an operating system is nearing end of support, we will prioritize the replacement of Windows XP machines.

Implementation Plan

A gradual implementation is suggested to minimize disruption of instructional services and to ensure MIS Support time to configure and install the computers. Some areas such as classroom labs can only be upgraded during a break between semesters or during spring break, etc.

New computer purchasing should begin immediately, at the rate of approximately 150/year, spread out over the year in small implementation groups as follows:

2013-2014 School Year	Quantity
Computer Place	53
LI 171	31
MH Drop-in Lab	3
EOPS Drop-in Lab	3
ESL Computer Lab	36
Aviation Lab	2
Aviation Lab – Mac	2
Business 118 Lab	25
Teaching and Learning Center	8
A&R Office	10
FA Office	9
Total Purchases	182

2014-2015 School Year	Quantity
Hollister Lab	25
Hollister Drop-in Lab	5
Hollister InfoComp Lab	7
Welcome Center	4
Business Office	8
Rambler Lab	10
DRC/HTC Lab	25
Faculty	50
Total Purchases / Upgrades	134

2013-2014 Total Replacements: 182
Approximate Cost: $163,800

2014-2015 Total Replacements: 134
Approximate Cost: $120,600

2015-2016 School Year	Quantity
Fine Arts Mobile Lab - Mac	20
CGD Lab – PC	22
DM Lab – Mac	26
BU 110	25
BU111	35
Allied Health Lab	31
LS Mobile Lab	30
MH Classroom 8	25
Faculty/Staff	30
Total Purchases/Upgrades	219

2016-2017 School Year	Quantity
MA Mobile Lab	30
CH Mobile Lab	30
MH Mobile Lab	30
HOS Mobile Lab	30
Library	23
Writing Center	13
Math Lab	21
MH Classroom 5	25
TV Studio Lab	8
Faculty/Staff	40
Total Purchases/Upgrades	240

2015-2016 Total Replacements: 234
Approximate Cost: $210,600

2016-2017 Total Replacements: 250
Approximate Cost: $225,000

At the end of four years, the plan specifies that all campus computers will have been upgraded. The computer classrooms will have all new equipment, and the faculty/staff machines will have been upgraded with slightly used computers from the classrooms. In the next four years, the cycle will start over, and in the school year 2017-2018, classrooms that were upgraded in 2013-2014 will need to be upgraded again.

Appendix G: Completed Initiatives (2002-2005)

The Technology Master Plan 2002-2005 produced results in that the following initiatives were successfully achieved:

- Uninterruptible Power Supplies (UPS) devices supporting all network switches were upgraded.
- TRIO wireless technology was implemented in areas of the campus.
- Internet access was expanded from T1 to DS3.
- A comprehensive campus policy for computer technology purchases & support was established.
- Standards for technology hardware & software were established.
- A technology renewal program was established based on a three-year cycle.
- Training for all staff on basic level of technology competency.
- Incentives, such as stipends, professional growth, or flex credit, provided to encourage additional training.
- Technological advancements were implemented to provide alternate ways for students to access counseling, orientation, and book purchasing services.
- Phone registration was implemented.
- Web access to faculty and students for grade recording & lookup is being completed Spring 2006.
- Computer lockout put in place for students who do not pass prerequisite courses.
- District Technology Committee formed with representatives from student services, academic affairs, business services, and MIS/Tech Support to prioritize project requests/enhancements for all software systems and applications.
- Found an integrated solution for student records, general ledger, payroll, human resources, inventory control, and accounting.
- Consideration given to outsourcing all or part of the campus-wide software and hardware functions, including MIS state reporting requirements – solved by ERP system being implemented.
- Library Technology Plan 1999-2003 implemented.
- Library automation system in daily operation.
- Access to electronic resources provided for multiple concurrent users.
- Access provided for students that matches level of research and informational needs.
- Member of several consortia providing networking and regional/state collaboration.
- Distance learning program developed and implemented.
- Training, awareness, and support provided for faculty who want to engage in distance learning instruction.
- The online orientation plan for first-time online students begins Summer '06.
- Provided assistive technology and awareness training for core technical personnel and user assistance.
- Identified & evaluated existing software programs for total access, furniture, and equipment needs for students with disabilities.
- Assessed the need to establish a new Learning Assistance Center.

- Created preliminary drawings, cost analysis, and funding strategies for computer labs, computer classrooms, tutoring facilities, office space, and computer service areas through the Minimum Standards for Classrooms & Labs.
- Assessed the need for a second PC lab at the Morgan Hill site.
- Determined appropriate levels of technology required in each classroom.
- Established a technology renewal program for classrooms that was included in the original Technology Master Plan.
- The District Technology Committee considers the most cost-effective and innovative methods of delivering and supporting instruction based on this Plan.
- Programming schedule for Gavilan Channel 18 created.
- Established guidelines for Gavilan Channel 18 programming.
- Working group to curate programs established for Gavilan Channel 18.
- Staff assigned to produce shows and manage day-to-day programming operations.
- Creation of a crew to shoot and edit campus projects for Gavilan Channel 18.
- Gavilan Channel 18 budget established.
- Program to assess student information competency needs and integrating such information competency into the curriculum developed.
- Implemented state recommendations and professional standards for Information Competency requirements.
- Virtual library resources via the web (ex. e-books) to support information competency.
- Offering select workshops for faculty, such as web authoring.
- Resource center publicized via e-mail and the online calendar.
- Resource Center representatives take active roles in campus committees and regional technology committees.
- Resource Center supplied with the most current technology.
- Provided a support system on the Intranet for staff access to institutional data.
- Institutional researcher was provided with access to all databases.
- Digital Media courses developed to keep up with technological developments.
- Digital Media program established in a space that allows the merging of digital media arts.
- 4CNet video conferencing capabilities developed.
- Partnerships with technology companies in the District developed.
- Technology internships established with local area businesses.
- Appropriate coursework to meet business needs and student career objectives offered.

Appendix H: Completed Initiatives (2006-2008)

The Technology Master Plan 2006-2008 produced results in that the following initiatives were successfully achieved:

- Developed Alternate Media Guidelines in accordance with the Chancellor's Office to meet the legal obligation of making instructional materials and other information resources.
- Implemented on-line and Web registration.
- Added appropriate equipment to digital media classroom/lab.
- Developed a statement of appropriate use for MACs and PCs. See Appendix E.
- Provided adequate facilities for existing and future MIS personnel and equipment (New Data Center completed in 2007).
- Implemented the integrated system for student records, general ledger, human resources, inventory control, and accounting. Payroll will continue at the County Office of Education.
- Provided distance learning support for student services, library/resources, and technical assistance (ex: streaming video server infrastructure w/kiosk).
- Added remote access for faculty and staff (ex: e-mail)
- Upgraded the existing PBX phone system including a new voicemail system (overcome telephone deficiency on campus).
- Implemented and published security standards for network and equipment. (See attachment E-4)
- Established standards for the Web and network management. (See attachments E-3 & E-4)
- Allocated server space for faculty and staff data backups with Active Directory.
- Replaced the HP 3000 system hardware due to end of life (Student Services, HR, Financials, etc.) in 2006.
- Provided financial aid/scholarship applicants and recipients with web and/or telephone access to information regarding the status of their application and award; student access to transfer information (integrated with ERP system via self service Banner).
- Implemented a network login environment using Active Directory.
- Developed security standards for network and equipment. (See attachment E-4)

Appendix I: Completed Initiatives (2009-2011)

The Technology Master Plan 2009-2011 produced results in successful achievement of the following initiatives:

- Established a comprehensive Section 508 policy (AP 6365) for electronic and information technology purchases and support. See attached policy on the following website: http://www.gavilan.edu/drc/Gavilan508.html. A DRC Accommodation Bulletin is developed each semester to educate the faculty on creating accessible course materials. Faculty (both full-time and part-time) orientations include Section 508 information.
- Modernized technology in the classroom to support the delivery of instruction and to ensure 508 compliance by providing appropriate technology to enable deaf students to communicate by real-time captioning by adding wireless capability.
- Ensured that all placement test information is promptly available on the campus database (integration with the new ERP system).
- Acquired software (DegreeWorks) to enable counselors to develop student educational plans and conduct degree/certificate audits. This software program is integrated with the Banner system.
- Implemented the Luminis portal which provides an "online community", such as e-mail or web newsgroups for students to interact with each other, staff, and/or faculty.
- Upgraded the network backbone.
- Completed the wireless implementation to offer a secure, campus-wide wireless network.
- All funds for the Measure E computer replacement plan have been expended and current computers in labs and offices are within the 3 to 5 year computer replacement plan cycle.