Table of Contents

Introduction

Technology, in all its forms, plays an ever-increasing role in the instructional and operational areas of Los Medanos College (LMC). Proper planning for the allocation and use of technology resources is critical for the long-term support of student learning and institutional effectiveness at the college. This Technology Strategic Plan is designed to provide guiding principles and directions not only for the term of the plan (2012 to 2017), but well beyond. By separating out an Implementation Grid and other appendices from the main body of the text, this plan can be modified in the long-term to accommodate trends in use of technology in the classroom and administration of the college. Short-term needs that have been identified through the planning and review process will be documented in the Implementation Grid and other appendices.

Background

In 2001, Los Medanos College developed its first draft of a technology plan. The plan was updated in 2006-2007. In 2008, the Shared Governance Council (SGC) tasked the LMC's Technology Advisory Group (TAG) to update the plan. At that time (2009), a draft was created, but was never fully reviewed by the various campus constituencies and, as a result was adopted only on an unofficial basis. The work of updating the plan became a continuing task for TAG with this version of the plan which was started in late 2010 and passed through the review process in fall of 2014. This version of the plan took a different approach in the structure of the plan. The primary difference is that the body of the plan has been developed to be truly strategic and long-term, thus requiring less major updates in the future. Areas that may need to be modified are contained in an implementation grid and other appendices which can be more readily updated on an as-needed basis. These appendices will be reviewed annually and updated as needed.

Los Medanos College Mission

Los Medanos College is a public community college that provides quality educational opportunities for those within the changing and diverse communities it serves. By focusing on student learning and success as our first priorities, we aim to help students build their abilities and competencies as life-long learners. We create educational excellence through continually assessing our students' learning and our performance as an institution. To that end, we commit our resources and design our policies and procedures to support this mission.

Los Medanos College's Technology Advisory Group

LMC's Technology Advisory Group (TAG) was established in 20XX by the Shared Governance Council (SGC). The Group consists of members of the student, faculty, classified staff, and management constituencies. TAG members are appointed by the various shared governance bodies of the constituencies – student members by the Los Medanos College Associated Students (LMCAS), faculty members by the Faculty Senate, classified staff by the Classified Senate and managers by the College President. TAG meetings are open to all members of the LMC community and regular meetings are scheduled.

TAG investigates, discusses and provides guidance to the college on all aspects of technology. Topics addressed by TAG in the past include:

- Investigating the need for incorporating new or expanding and existing technologies. Examples are the development of a Macintosh computer user's plan and the expansion of LMC's wireless network;
- Obtaining feedback from campus constituencies relating to various topics such as emerging technologies and the current level of satisfaction with various areas of technology on campus;
- Developing and presenting policies for the implementation, use and maintenance of technology.

In fall of 2009, TAG was tasked by the SGC with updating the college's Technology Renewal Plan.

Los Medanos College's Information Technology & Services Department

The LMC Information Technology & Services Department (IT&S) takes a leadership role in assuring the campus is continually moving forward with regard to all aspects of technology. These include, but are not limited to:

- Working with campus entities in identifying, procuring, deploying and supporting campus computer hardware and software and other technology resources;
- Providing development of applications for campus use;
- Maintaining and updating the campus network and server infrastructures;
- Keeping the campus informed of emerging technologies.

In addition, IT&S maintains the college's Help Desk. Day-to-day help requests, technology purchases and application support are tracked through the Help Desk in conjunction with the District's trouble ticket system.

Planning and Development Process for the Technology Strategic Plan

In 2009, TAG was tasked with updating LMC's Technology Renewal Plan. At that time, the current Technology Renewal Plan was unofficially adopted as an interim document with the intent to develop a completely new Technology Strategic Plan to replace the Technology Renewal Plan after its expiration in 2012. TAG started work on the current version of the plan in spring of 2010 with the development of technology goals and the creation of the implementation grid. Over the course of several meetings, the goals and grid were developed using a consensus model for approval. Once the structure and content of implementation grid were complete, the text of the Plan was created, discussed and modified using the consensus model of approval. As the Plan was developed, additional area of discussion arose. The result of these discussions is the information contained in Appendices C through E

Much of the work on the Plan was performed off-line using the District's InSite portal. Through the InSite portal, members of TAG were able to collaboratively work on the Plan and make suggestions or

changes outside of regularly scheduled meetings. These changes could then be reviewed and accepted or deleted during discussions in regular TAG meetings.

Once completed by TAG, the Plan was presented to the College constituency groups – LMCAS, Faculty Senate, Classified Senate, and President's Council and Cabinet. After compiling and incorporating comments from the constituency groups, the Plan was presented to SGC for final approval.

Los Medanos College Technology Goals

Technology goals for LMC have been developed by TAG to support educational and administrative goals as outlined in the college's Mission and Educational Master Plan. The current set of technology goals were created using the goals stated in the Technology Renewal Plan 2009-2012 as starting points. The goals presented here have been refined and expanded to be truly long-term.

Student Access

The goal of providing student access is to provide resources – software, hardware, supporting infrastructure, etc. – that meet the course-related needs of all students. Student access includes services available in a secure method both on-campus and off-campus from Internet-connected computers and other devices. The following are areas covered under student access:

- Campus computer labs with up-to-date and relevant software to be used for course-related work;
- A wireless network that provides access throughout the Pittsburg and Brentwood campuses;
- Access to a learning management system for access to fully online and hybrid courses and online supplements to face-to-face courses;
- Off-campus access to support services such as admissions, registration, financial aid, counseling, library resources, and transcripts;
- Compliance with Section 508 to the fullest extent possible.

Instructional Technology

The instructional technology goal's primary function is to assure that technology provided for instructional use at the college is up-to-date and serves the needs of the students and employees of the college. In addition, relevant training on existing technologies and soon-to-be-implemented technologies will be planned for and delivered.

- Planning for the use, maintenance, upgrading and support for the various hardware required to support the instructional activities on both campuses;
- Investigate emerging technologies with the goal of determining the viability of these new technologies at LMC;
- Develop and deliver training that is relevant to existing and soon-to-be-implemented technology to support the delivery of instruction using technology;
- Develop and maintain policies and procedures to assure that hardware and software used for instruction remains suitable for the purpose for which it is used.

Administrative Computing

For administrative computing, the focus is on providing planning and implementation of technology for administrative purposes and general support of the campus. As with all goals, institutional effectiveness is a primary concern with administrative computing.

- Develop processes and procedures for the development of specialized applications to support administrative computing needs;
- Develop and maintain standards for technology-related hardware and software used for administrative purposes that include purchasing, installation, support, and replacement;
- Maintain competitive contracts with outside vendors to assure that the most economic pricing for hardware, software and technology-related services;
- Ensure that policies and processes are in place to provide reliable service and support of college technology.

Technology Infrastructure

Technology infrastructure includes the campus local area network, servers, wide area network connections to the District Office and other services such as backup and disaster recovery. Reliable function of the college's technology infrastructure is critical to all of LMC's instructional and administrative functions.

- In conjunction with District IT, develop and maintain standards for networking equipment (wireless, local area network, wide area network, and Internet connectivity) and services to ensure that the network connectivity needs of the campus are needed;
- Through network monitoring and management, assure that our campus network and Internet connections are used efficiently and not open to compromise by malfeasance;
- Assure that server infrastructure, both physical and virtual, meet the needs of the campus and that standards are created and implemented to assure planning, maintenance of, and replacement of LMC's servers;
- Assure that student and administrative computer workstations meet the needs of users through the development and implementation of a computer workstation replacement schedule;
- Develop, implement, and maintain backup and disaster recovery plans to ensure continuity of services in the event incidents ranging from accidental data loss to a major disaster.

Technology Support

Technology support covers the resolution of day-to-day trouble tickets as well as major projects such as updates to student computer labs and computer-based classrooms and deployment of new computers based on replacement schedules. Maintenance of the college's technology infrastructure is also the responsibility of the technical support staff. Adequate support for technology is required for the continued functioning of all instructional and administrative functions at the college.

- Assure that an effective and responsive Basic Help Desk is maintained in order to deliver timely and efficient support to both college campuses;

- Assure that there is a process for the timely escalation for issues that are beyond the ability of the Basic Help Desk;
- Staffing levels, both classified staff and management, are evaluated annually and levels are maintained to adequately support campus needs.

Digital Communications

Digital communications play an ever-increasing role in the instructional and administrative functions of the College and are used to facilitate the flow of information between constituencies both on and off-campus. This area is constantly evolving and must be continually assessed and refreshed.

- Implement unified communications to integrate voice-mail, e-mail, and emerging technologies;
- Continually investigate emerging communications technologies to determine their usefulness for instructional and administrative purposes;
- Centralize communication from the campus using the District's InSite portal, student's InSite e-mail and the Office 365 e-mail accounts that are available for all District employees;
- Maintain the college's web site with current information as a communication tool for providing information about the campus, its services and instructional and administrative departments;
- Develop and maintain infrastructure to provide time-sensitive notifications through multiple media channels in the event of emergencies.

Professional Development

Professional development for faculty and classified staff is critical to the effective delivery of instruction using technology and the functioning of administrative services in both Pittsburg and Brentwood. In conjunction with LMC's Professional Development Advisory Committee (PDAC), needs for professional development in all areas related to technology will be assessed, planned and delivered.

- Ensure that adequate resources - both staffing and funding – are made available to fulfil the technology-related professional development needs of the College;
- Ensure that sufficient training opportunities for faculty on the use of technology resources for the delivery of curriculum;
- Ensure that sufficient training opportunities for training all employees in the use of productivity technologies (Microsoft Office suite, CCCCD's InSite portal, Colleague, etc.);
- Regularly evaluate and identify training requirements for the use of instructional technologies by both students and faculty and design and implement training programs to meet these needs;
- Annually evaluate the need for professional development related to technology.

Ongoing Planning, Implementation and Evaluation

To facilitate continued improvement and to keep up with changes in technology, a cycle of planning, implementation, and evaluation will be followed.

Ongoing Planning

Technology is continuously changing and evolving, ongoing planning will be essential to providing tools and services that the college and its students require to be successful in meeting their goals. Through coordination with the College's student groups, academic and administrative departments, the Office of Instruction, management, and TAG, the IT&S department will identify new technologies and areas of interest that have the potential to increase institutional effectiveness, instruction and, as a result, student success.

Ongoing planning will include the following:

- Continuous planning and review to ensure that goals related to technology infrastructure and professional development will be met;
- Examination of emerging technologies for use in instructional and administrative areas and planning to implement those to be adopted;
- Providing forward-looking cost projections to ensure that funding is available to support the regular evaluation and updating of campus technology;
- The continual evaluation of staffing levels to ensure that technology support, training and planning can be provided in a stable and reliable manner;

Implementation

Most of the implementation of this Technology Plan will be executed through Program Review (PR) and the Resource Allocation Process (RAP) and coordinated through the IT&S Department. As with most community colleges, LMC has limited resources and must balance the use of those resources for the greatest benefit of the students and college.

Through the use of PR, the college will ensure that technologies implemented at LMC will remain aligned with and relevant to the needs of the instructional programs and administrative departments that have identified the need for these technologies. New and emerging technologies can be identified at the instructional program or administrative department level. Implementation of these new technologies will be coordinated between the program or department, the IT&S Department, and the Technology Training and Development Coordinator/Office of Instruction. Evaluation of the total cost of ownership of the various technologies (continued hardware and software updates, etc.) will be monitored through the PR process. In addition, technologies that are identified as no longer need by programs or departments can be identified in PR and then discontinued.

Making funding decisions through RAP allows the college to prioritize the allocation of funds to serve the college as a whole. Each year, instructional programs or administrative departments submit requests for funding to support needs identified through PR. Funding requests should include:

- New technology-related projects;
- Continued support of existing technologies;
- Training that cannot be provided by the Technology Training and Development Coordinator, District resources, Department or other college funds;

- Additional staffing to support technology.

The combination of PR and RAP will ensure that the needs of instructional programs and administrative departments will be balanced with available funds for the benefit of the college as a whole.

Evaluation

Evaluation of the effectiveness of this plan will be performed through a combination of the following:

- Completion of tasks identified in the Grid;
- Annual PR and RAP;
- Annual customer satisfaction surveys administered by LMC's IT&S Department;
- Feedback collected through campus constituencies and daily interactions between users and the IT&S Department staff;
- Surveys conducted by the District;

Through this combination of feedback mechanisms, TAG will be able to make updates to the appendices on an annual or as-needed basis and obtain input for the development of the next Technology Strategic Plan.

Appendix A – Technology Goals and Strategic Actions (The Grid)

Technology Goals and Strategic Actions:

1. **Student Access**: Provide universal and secure student access to learning resources and support services for all college locations.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
1.A	**Identity management**: Implement a new student authentication system that requires students to individually log onto college network resources such as the wireless network or lab computers. Use InSite (AC.Portal) student accounts for authentication.	• Technology Systems Manager	• LMC IT&S • District IT	• Authentication system is complete. • Fall 2015 for complete implementation	• Students access campus wireless and identified student computing resources using InSite credentials.	• Development of student domain that is connected to the AC.Portal domain (complete). • Identification of student computing resources that require authentication	• District and LMC IT staff to design, develop and implement authentication system (complete). • LMC IT to work with departments to determine which campus computing resources require authentication. • Available staff required to develop and implement student resource domain that uses AC.Portal domain for authentication.
1.A1	**Wireless Network:** Require authentication for student access to wireless system at both campuses using InSite student accounts	• Technology Systems Manager	• LMC IT&S • District IT	• Completed summer 2014	• Wireless system integrates with InSite authentication.	• Development of student domain that is connected to the AC.Portal domain (complete).	• District and LMC IT staff to design, develop and implement authentication system (complete).

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
1A.2	**Computer Labs:** Work with campus departments in both Pittsburg and Brentwood to identify student computing resources that require authentication and implement authentication for those resources using InSite usernames and passwords.	• Technology Systems Manager	• TAG • LMC IT&S • District IT • Campus Instructional and Administrative Department Leads	• Fall 2015	• Identified computer lab workstations and other computing resources require students to authenticate using InSite account username and password.	• Development of student domain that is connected to the AC.Portal domain (complete). • Identification of computing resources requiring authentication	• Staffing to develop and implement student domain. • Participation from campus departments in identification of student computing resources requiring authentication.
1.B	**Computer lab operations:** Develop and implement college standards to adequately staff and support all current and future student computer labs at both the Pittsburg and Brentwood campuses. Staffing plan to identify staff levels, responsibilities of specific positions and interfaces and communication paths between instructional/administrative areas and LMC IT&S.	• Technology Systems Manager	• LMC IT&S • TAG • Business Services • President's Cabinet • SGC	• Fall 2014 for development of plan. • Fall 2015 for start of implementation of plan.	• A staffing plan for all computer labs has been developed and implemented. • Annual review of staffing needs during PR/RAP process.	• Completion of initial staffing plan. • Budget availability for staffing identified in plan.	• Staffing to develop initial plan to be recommended to TAG. • Funding to support approved staffing plan.
ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
1C	**Computer lab and computer-based classroom hardware and software**: Conduct ongoing assessment of the adequacy of student computer labs at both the Pittsburg and Brentwood campuses to assure that hardware and software meet the needs of instructional programs. These assessments will utilize program review information and the age of the computers, and will, in turn, be used as criteria for prioritizing the replacement of lab hardware and upgrading or obtaining new software. Results of assessments should provide forward-looking projections of requirements.	• Technology Systems Manager • Instructional Department Deans • Vice-President of Instruction & Student Services	• LMC IT&S • Instructional Departments	• Ongoing	• Using faculty and classified staff input, a process is developed and implemented to ensure that lab software and hardware meet the needs of instruction taking place in each computer lab and computer-based classroom.	• Baseline inventory of hardware and software in computer labs and computer-based classrooms. • Development of database to support task.	• Staff to develop and maintain inventory of software and hardware. • Organizational structure of group to perform assessments. • Funding for hardware and software improvements (estimate of approximately $200,000 to $250,000 annually). • Staffing to perform annual assessments.
1C.1	**Annually assess performance of computer labs' and computer-based classrooms' adequacy with regard to the mission of the labs and classrooms.**	• Instructional Department Deans	• Instructional Departments	• Ongoing	• Annual assessment of computer lab hardware and software is completed and used for resource allocation.	• Baseline inventory of hardware and software in computer labs and computer-based software. • Development of database to support task.	• Staff to develop and maintain inventory of software and hardware. • Organizational structure of group to perform assessments. • Staffing to perform annual assessments.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
1C.2	Develop and implement a procedure to: • Maintain a database of computer lab and classroom hardware. • Determine the ability of existing hardware to meet the needs of each computer lab or classroom. • Prioritize the replacement or update of computer lab or classroom hardware.	• Technology Systems Manager	• LMC IT&S • Instructional Departments	• Spring 2015 - Development of database. • Spring 201 - Initial inventory. • Implementation to be ongoing.	• Annual assessments are performed in a timely manner so that required upgrades can also take place in a timely manner. • The procedure is developed, implemented, and utilized in Program Review (PR) and to determine resource allocation (RAP).	• Development of baseline hardware inventory.	• Staffing to develop and maintain database. • Organizational structure of group to perform assessments. • Staffing to perform annual assessments. • Staffing to execute hardware upgrades. • Funding for identified hardware replacements and/or improvements.
1C.3	Develop and implement a procedure to: • Determine the software that is currently installed or required in each computer lab. • Assess the adequacy of currently installed software. • Acquire the software or required software updates/upgrades • Catalog (track) licenses and installation • Deploy the software.	• Technology Systems Manager	• LMC IT&S • Instructional Departments	• Development of database - Spring 2015. • Initial inventory – Spring 2015. • Implementation to be ongoing.	• Annual assessments are performed in a timely manner so that required upgrades can also take place in a timely manner. • The procedure is developed, implemented, and utilized in Program Review (PR) and to determine resource allocation (RAP).	• Development of baseline software inventory.	• Staffing to develop and maintain database. • Organizational structure of group to perform assessments. • Staffing to perform annual assessments. • Staffing to perform software upgrades. • Funding for identified software licensing.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
1D	**Online learning and support services**: Provide online access to all learning resources and student support services to assure equitable access and meet identified student needs.	• Vice-President of Instructional and Student Services • Senior Dean of Student Services	• Office of Instruction • Student Services • DEC • Marketing Department • LMC IT&S • District IT	• Ongoing	• Student support services are available for all students from both on and off-campus. • Access to the District's Learning Management System (Desire2Learn) is available to all students for online, hybrid, and as a supplement for face-to-face courses.	• Selection of LMS (complete spring 2013). • Identification of student support services for online access.	• Staffing to develop access to student services resources from off-campus.
1E	**Pay for Print**: Continue to develop and implement the pay-for-print system in all student computing areas.	• Technology Systems Manager	• LMC IT&S • Library	• Ongoing	• Pay for Print access is available and functional at all identified student computing areas.	• Continued/renewed contract with Pinnacle Printing Systems or other pay-for-print vendor.	• Staffing to support current system and identified expansion.
1E.1	**Provide wireless printing in the LMC Library.**	• Technology Systems Manager	• LMC IT&S • Library	• Complete – fall 2013	• Wireless printing is available in the Library.	• Complete	• Complete

1E.2	Provide a location for Pay for Print printing before and after hours.	• Technology Systems Manager • Senior Dean of Student Services	• LMC IT&S • Student Services	• Spring 2015	• A location for after-hours printing has been implemented.	• Completion of Student Services remodel (location for off-hours student printing).	• Printer and card reader • Staffing for support

2. **Instructional Technology**: Support the success of all students through the adoption of proven instructional technologies including the delivery of instructional media for use on and off campus, exploring the benefits of cloud computing.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
2A	**Mac Use Plan**: Update all technology documentation to include Macintosh support.	• Technology Systems Manager • Journalism or Graphics Faculty Member	• TAG	• Complete - fall 2013	• Guidelines for purchasing, installation, and support of Mac computers are developed.	• Complete	• Complete
2A.1	**Enhance Technical Support Availability for Macintosh Computers.**	• Technology Systems Manager	• LMC IT & S	• Spring 2015	• On-campus (tier one) and third party (tier two) support for Macintosh computers is available.	• Identification of training program.	• Funding for staff training for Mac support. • Staffing for Mac support. • Funding for tier two support.
2B	**Online lectures**[1]: Investigate automated processes for capturing on-campus lectures (audio and/or video and/or lecture resources) to publish online. Make recommendations on findings.	• District Director of Information Technology • DEC Chair • Curriculum Committee Chair	• TAG • District IT • DEC • Curriculum Committee • LMC IT&S	• Fall 2015	• Automated processes for lecture capture and publishing lectures online has been investigated and recommendations made.	• Identification of lecture capture system.	• Staffing to identify options and perform investigations. • Funding for lecture capture technology.
ID	Action Items	Lead(s)	Units	Time-	Performance Indicators	Dependencies	Required Resources

---

[1] Instructional materials must meet the electronic and information technology accessibility requirements of Section 508 and be in compliance with copyright laws.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependency	Required Resources
2C	**Smart classrooms**: Continue to develop standards for smart classrooms and upgrade older rooms to meet the new standards with the goal of having all LMC classrooms possessing the necessary technology for instructional effectiveness.	• Vice-President of Instructional and Student Services • Technology Systems Manager	• TAG • Office of Instruction	• Summer 2014 – initial re-design. • Ongoing	• Smart Classroom specification is updated annually to reflect LMC's current needs.	• Identification of consultant to guide initial process.	• Staffing to develop and maintain standards. • Funding for consultant. • Funding to implement new deisgn.
2C.1	**Provide regular training for use of Smart Classrooms**	• Technology Systems Manager	• LMC IT&S • PDAC	• Ongoing	• Training for Smart Classroom use is scheduled at the start of each semester and is also offered during each semester as variable Flex.	• Selection of new design.	• Staffing to develop and provide training.
2D	**Instructional video**: Develop processes for efficiently licensing and delivering campus developed and copyrighted instructional videos that include closed-captioning to students on and off-campus and for classroom use by faculty.	• Electronic Resources Librarian	• Library • DEC	• Fall 2014 for development of processes • Process Improvement - Ongoing	• Processes have been developed and instructional videos with closed captioning are available to students on and off-campus.	• Agreement with 3C Media Solutions (video hosting resource). • Agreement with Films on Demand	• Staffing to develop and implement processes.

			Involved	line			
2D.1	**Provide training for use of instructional video to include:** • Use of Films on Demand • 3C Media Solutions • Check out of Library media • Section 508 compliance • Copyright and fair use	• Electronic Resources Librarian • Alternative Media Specialist	• Library • PDAC	• Spring 2015 – development of training • Ongoing – delivery of training.	• Training has been developed and is being delivered on a regular basis.	• 2D	• Staffing to develop and deliver training.
2E	**Computer Labs**: Investigate the use of desktop virtualization for deploying student computer lab images and implement if practical. (Note: Assessments performed as of spring 2014 have deemed current available desktop virtualization options unsuitable for instructional purposes.)	• Technology Systems Manager	• LMC IT&S • TAG	• Continue to monitor this technology for suitability in the future.	• The feasibility of desktop virtualization is determined. • A plan for implementing desktop virtualization has been developed, if feasible.		

3.   **Administrative Computing**: Develop and improve secure computing systems and databases to increase institutional efficiencies and help address campus reporting needs and requirements.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
3A	**Custom application development**: Standardize the development and maintenance of custom network/database applications for college operations in order to increase institutional efficiencies and help address campus reporting needs and requirements.	• Technology Systems Manager	• LMC IT&S • Administrative Unit Leads • District IT	• Spring 2015	• A set of standard procedures for the development and maintenance of custom network/database applications has been developed.		• Staffing to develop procedures.
3A.1	**Applications required for college operations have been identified.**	• Technology Systems Manager	• LMC IT&S • Administrative Unit Leads	• Ongoing	• Applications to replace current paper-based processes have been identified (e.g., Program Review, Resource Allocation Process).	• Identification and specification of identified applications.	• Staffing to identify applications and prioritize development.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
3A.2	**Develop identified applications**	• Technology Systems Manager	• LMC IT&S • Administrative Unit Leads	• Ongoing	• Applications have gone through the following development steps: 1. Initial design of workflow and user interface 2. Development of prototype 3. Testing of prototype 4. Deployment of current version of application 5. Use and identification of fixes and enhancements 6. Re-start at step 2	• 3A.1	• Staffing to prioritize and schedule development of multiple applications.
3B	**Network application support**: Develop standardized procedures for requesting network applications and services.	• Web Applications Developer	• LMC IT&S	• Spring 2015	• A procedure has been developed for requesting network applications that requires the use of the process outlined in 3A for development.	• Input from existing network application client base on current processes used.	• Staffing to develop request procedure (web application).

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
3C	**Computer hardware and software standards**: Maintain up-to-date computer hardware and software standards	• Computer & Network Specialist	• LMC IT&S • Instructional Departments	• Summer 2014 – initial standards • Ongoing – standards updates	• Standards for computer hardware and software have been developed and are updated regularly.	• Review of licensed software available for deployment across the campus.	• Staffing to create and update standards.
3D	**Printer standards and support**: Develop and implement standards to govern the purchasing, installation and support of campus printers.	• IT&S Computer & Network Specialist	• LMC IT&S	• Spring 2014 – initial standards • Ongoing – standards updates	• Standards for purchase, installation and support of campus printers have been developed and implemented.		• Staffing to create and update standards.
3E	**Develop and implement processes for centralized institutional purchasing of campus hardware, software and other technology-related items.**	• IT&S Senior Administrative Assistant	• LMC IT&S • TAG • Business Services	• Spring 2013 – initial processes created. • Ongoing – process improvement	• A process for centralized purchasing of technology related items has been developed, communicated, and implemented.		• Staffing to develop processes and procedures.
3F	**Develop plans for the replacement of campus technology resources on a regular schedule.**	• Technology Systems Manager • Director of Business Services	• LMC IT&S • Business Services	• Completed – spring 2014	• Plans have been developed for the timely replacement of technology resources (See Appendix B).		• Continuous funding for replacement of computers on a regular schedule ($200,000 to $300,000 annually). • Staffing or funding for deployment of computers.
ID	Action Items	Lead(s)	Units	Time-	Performance Indicators	Dependencies	Required Resources

		Involved	line			
3G	**Institutional software licenses**: Provide institutional licensing and ongoing funding for widely used software such as office-productivity, online courses, antivirus protection, and website content management.	• Technology Systems Manager • Director of Business Services	• LMC IT&S • Business Services	• Fall 2014 – initial identification of software. • Ongoing – update of software list.	• Set of software to be installed on every campus computer has been identified, licensed and provision made for licensing renewals.	• Initial software inventory.	• Staffing to identify and maintain database of institutional software. • Funding for purchasing and renewal of licensing.
3H	**Specialty software licenses**: Processes for identification, purchasing, installation and support of specialty software to be used in specific campus areas have been developed and implemented.	• Instructional Department Chairs • Technology Systems Manager	• Instructional Departments • LMC IT&S	• Fall 2014 – initial identification of software. • Ongoing – update of software list.	• Requirements for specialty software have been identified, license requirements determined, funding sources identified, installation processes created, and update/upgrade/renewal requirements evaluated. • Purchasing of new software licenses and renewal of existing licenses supported through campus RAP process.	• Initial software inventory.	• Staffing to identify and maintain database of institutional software. • Funding for purchasing new licenses and renewal of licensing.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
3I	**Policies and procedures**: Development and the continuous improvement and development of college-wide policies and procedures for: • Requests for technology related purchases, • Services, and • Support.	• Technology Systems Manager	• LMC IT&S	• Ongoing	• College-wide policies and procedures have been developed that outline requests for purchasing technology (software, hardware, etc.), services, and support. • These policies and procedures will be evaluated and updated annually.	• Identification of subjects of policies and procedures.	• Staffing to develop policies and procedures.
3I.1	**College-wide policies and procedures for technology have been communicated and are followed by the LMC community.**	• Technology Systems Manager	• LMC IT&S	• Ongoing	• College-wide policies and procedures for technology have been communicated to the LMC community and are routinely followed. Changes to the policies and procedures will be communicated in a timely manner to the LMC community.	• 3I	

4. **Network Infrastructure**: Upgrade and maintain the network infrastructure to support comprehensive wireless, voice, video, and data communications with high availability and recoverability.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
4A	**Wireless access**: Build on the existing wireless infrastructure to implement comprehensive wireless access for students, employees and authorized guests throughout the college including key outdoor areas	• Technology Systems Manager	• LMC IT&S • District IT	• Complete – spring 2014	• Expansion of the wireless system will be performed under the District-wide Infrastructure Upgrade Project.	• Complete	• Complete
4B	**Network infrastructure standards**: Work with District and other campuses in the District to develop updated network infrastructure standards to be applied to all existing and new LMC buildings. Implement the new standards to ensure high availability and quality of service for voice, video and data throughout the college and district.	• District Director of Information Technology • Technology Systems Manager	• District IT • LMC IT&S	• Complete - fall 2012 • Ongoing – updating of standards and procedures.	• Network infrastructure standards have been developed at the District level and are updated regularly.	• Proposed updates from District.	• Staffing to review proposed updates to standards.
ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
4C	**Network management** (As of summer 2014, all monitoring and management of LMC's network will be performed by a Network Operations Center (NOC) that is staffed by employees located at the District Office)	• District Director of Information Technology	• District IT	• Complete – summer 2014	• Network management tools are implemented. • Regular network monitoring is taking place. • A process for notification of network outages and remediation procedures are in place.	• Complete	• Complete
4C.1	**Network management**: Implement enterprise level network management tools to monitor and control all critical network resources at all college locations.	• District Director of Information Technology	• District IT	• Complete – summer 2014	• Enterprise-level network management will be provided by the District-wide Infrastructure Upgrade Project • District Office IT will implement, configure and maintain	• Complete	• Complete
4C.2	**Network management:** Develop and implement emergency response procedures for network outages or attacks.	• District Director of Information Technology • Technology Systems Manager	• District IT • LMC IT&S	• Fall 2014	• Emergency response procedures for network outages or attacks have been developed and implemented.	• Coordination with District IT to develop and implement lines of communication and remediation procedures.	• Staffing to develop and update lines of communication and procedures.

4D	**Network storage**: Complete implementation of SAN (Storage Area Network) project to provide secure and centralized network storage, backup and recovery services to meet the operational needs of the college.	• Technology Systems Manager	• LMC IT&S	• Fall 2014	• The implementation of the SAN is complete and centralized network storage is complete and backup and recovery services are operational.		• Staffing to complete implementation.
4D.1	**Network storage**: Develop and implement a data archiving and retrieval process.	Technology Systems Manager	• LMC IT&S	• Fall 2014	• Data archiving and retrieval processes have been developed and implemented.	• Development, testing and implementation of new network file share structure.	• Staffing to develop and implement process.
4E	**Disaster recovery**: Update and implement the disaster recovery plan developed in 2006 to restore access to critical information resources in case of a catastrophic outage.	• Technology Systems Manager • Director of Business Services	• LMC IT&S • Business Services • TAG	• Fall 2015	• The 2006 disaster recovery plan has been updated and the revised plan implemented.		• Staffing to develop plan. • Staffing for plan implementation. • Funding to support implementation of plan.
4F	**Administrative server virtualization**: Deploy virtual servers to replace physical servers. This will promote "Green IT", support disaster recovery, and provide flexibility to provide additional network services and solutions.	• Technology Systems Manager	• LMC IT&S	• Complete - Fall 2012	• All physical severs that can be virtualized have been virtualized. Future network services take advantage of virtualization.	• Complete	• Complete

5. **Technology Support**: Provide ongoing training and critical support services to faculty, staff and students.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
5A	**Help Desk**: Develop a tiered Help Desk that allows for quick response to and resolution of technology support requests.	• Technology Systems Manager	• LMC IT&S	• Fall 2015	• A responsive tiered Help Desk system is implemented.		
5A1	**Basic Help Desk**: Adopt a responsive and comprehensive LMC Help Desk that handles basic college technology support requests in a timely and efficient manner for all college locations.	• Technology Systems Manager	• LMC IT&S	• Fall 2015	• Develop a comprehensive Help Desk to provide basic support for the following applications: o E-mail o Lost passwords o Campus Network Applications o Hardware issues o Other	• Help Desk ticketing system. • Move to self-service AC.Portal domain (password resets). • Sufficient staffing. • Training program for student workers manning the Help Desk.	• Staffing to hire and train student workers.
5A2	**Advanced Help Desk**: Adopt a responsive and comprehensive LMC Help Desk that handles more advanced college technology support requests in a timely and efficient manner for all college locations.	• Technology Systems Manager	• LMC IT&S	• Fall 2015	• Develop an advanced Help Desk to provide solutions to support requests that cannot be handled at a basic level.	• Help Desk ticketing system. • Sufficient staffing.	• Staffing to provide support.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
5B	**Technical staff and managers**: Create and maintain the right-size technical support staff and managers to proximate industry best practices and to meet the recommendations of the Gartner Group Total Cost of Ownership recommendations in the California Community College Technology III Plan (CCC_Chancellor's_Office, 2007).	• Technology Systems Manager • Director of Business Services	• LMC IT&S • Business Services	• Spring 2016	• Sufficient technical support staff and managers have been employed and retained to meet the recommendations.		• Funding for staffing. • Estimated to be between $100,000 and $200,000 annually above 2013/14 staffing levels.
5B.1	**Technical staff and manager staffing levels are evaluated and staffing recommendations made on an annual basis.**	• Technology Systems Manager • Director of Business Services	• LMC IT&S • Business Services	• Ongoing	• Staffing levels have been reviewed relative to accepted industry standards each year and recommended adjustments made to staffing based on findings.	• Input from college satisfaction surveys, budget projections.	

6. **Digital Communications**: Support and help develop digital means of communication between the college, community, and all constituencies.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
6A	**Unified communications**: Coordinate with District Office IT to implement a system that unifies all forms of communication including voice-mail, email, and emerging technologies.	• District Director of Information Technology	• District IT • LMC IT&S	• Complete - summer 2014	• Unified communication is a feature of the new voice-mail system that is being implemented during the District-wide Infrastructure Upgrade Project.	• Creation of domain that uses AC.Portal for authentication. • Upgrade of administrative desktop computers to Windows 7.	• Staffing or other resources to perform operating systems upgrades.
6A.1	**The usefulness of emerging technologies in unified communications is evaluated each year and new technologies are implemented based on evaluations.**	• District Director of Information Technology	• District-wide Technology Managers • TAG	• Ongoing	• Emerging technologies for unified communications are evaluated in conjunction with District IT staff for usefulness and feasibility. Selected unified communications technologies will be implemented.	• Information gained from conferences, publications and other sources related to emerging technologies. • Input from campus constituencies on interests in emerging technologies.	• Staffing to implement identified technologies. • Funding for conferences showcasing emerging technologies. • Funding to implement identified technologies.
ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
6B1	**District portal (InSite)**: The use of InSite is established as the primary mode of communication with the LMC community for: • student access to college support services • access to online forms • employee access to College-wide information • employee access to departmental information	• District Director of Information Technology • Director of Marketing and Media Design	• District IT • Marketing	• Complete	• InSite has been established as the primary communication mode for identified information.	• Complete	• Complete
6C	**Website development**: Marketing department to completely re-structure the LMC website to improve access for current students, future students, high school students, adult students, international students, business and community, faculty and staff.	• Director of Marketing and Media Design	• Marketing • Instructional Departments • Student Services Units	• Complete	• The LMC website has been restructured to improve access for the identified groups.	• Complete	• Complete
6C.1	**All web pages are current:** Ensure that all faculty and all departments have current and accurate information on the college website and that all web pages are examined by their "owners" on an annual basis at a minimum.	• Director of Marketing and Media Design	• Marketing • Web page "owners"	• Ongoing	• Faculty and all departments have up-to-date web pages and are updating them as needed and not less than annually.	• Training or assistance to web page "owners" so that they can update their web pages.	

6D	**Video conferencing**: Identify the need for additional audio and video conferencing resources to connect individuals/groups between LMC's Pittsburg and Brentwood Campuses as well as off-site locations.	• Technology Systems Manager • Director of Business Services • District Director of Information Technology	• LMC IT&S • Business Services • TAG • District IT	• Spring 2016	• The need for additional audio and video conferencing resources has been identified and re-assessed annually.		• Funding for identified additional or new video conferencing equipment and training. • Staffing to support video conferencing equipment.
6D.1	**Provide and support additional audio and video conferencing resources as identified.**	• Technology Systems Manager	• LMC IT&S • Business Services • TAG • District IT	• Fall 2016	• Additional audio and video conferencing resources have been provided and supported – including training.	• 6D	
6E	**Time-sensitive notifications**: Implement a college-wide external notification system that can be used to send alerts to students and/or employees in a matter of minutes. Such a system would use multiple forms of communication such as text message, phone/voice-mail, and email. Utilize the system for any time-sensitive notifications.	• Director of Marketing and Media Design • Senior Dean of Student Services	• Office of Instruction • Marketing	• Spring 2015	• A college-wide external notification system has been identified and implemented. The system will be evaluated annually and updated as deemed necessary.		• Funding for implementation of alert system. • Staffing to support alert system.

7. **Professional Development:** Provide faculty and staff opportunities for professional development in the areas of technology, media, and in the use of media and technology in instruction.

ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources
7A	**Instructor support**: Provide faculty training and support for the development and delivery of curriculum using instructional technology resources. The goal is to provide students, both on and off-campus, content using these instructional technology resources.	• Vice President of Instruction & Student Services • PDAC Chair	• Office of Instruction • PDAC	• Spring 2016	• Training and support for the development and delivery of curriculum using instructional technology has been provided.	• Continuous identification of training needs.	• Staffing to identify needs, develop and provide training (Technology Training and Development Coordinator at approximately $120,000 annually)
7B	**Technology training for operations and support**: Provide ongoing training and support in the use of productivity technologies for faculty, staff, and managers.	• Vice President of Instruction & Student Services • PDAC Chair	• Office of Instruction • LMC IT&S • PDAC	• Ongoing	• Training and support for the use of productivity technologies has been provided.	• Continuous identification of training needs.	• Staffing to identify needs, develop and provide training (Technology Training and Development Coordinator at approximately $120,000 annually)
ID	Action Items	Lead(s)	Units Involved	Time-line	Performance Indicators	Dependencies	Required Resources

7C	**Technology training for teaching and learning**: Provide ongoing training and support in the use of instructional technologies for students and faculty.	• Vice President of Instruction & Student Services • PDAC Chair	• Office of Instruction • PDAC	• Ongoing	• Ongoing training and support for the use of instructional technologies has been provided to students and faculty.	• Continuous identification of training requirements.	• Staffing to identify needs, develop and provide training (Technology Training and Development Coordinator at approximately $120,000 annually)
7D	**The need for technology training in all areas is evaluated on an annual basis.**	• Vice President of Instruction & Student Services • PDAC Chair	• Office of Instruction PDAC	• Ongoing	• The evaluation is completed annually.		• Staffing to develop survey tools, analyze data and communicate findings.

Appendix B – 5-year Technology Refresh Cycle

General

Technology hardware, software, infrastructure and other technology-related items must be updated on a regular basis in order to serve the instructional and administrative needs of Los Medanos College's (LMC) Pittsburg and Brentwood campuses. This appendix provides a 5-year refreshment schedule for technology equipment – computer workstations, workgroup printers, servers, and Smart classroom equipment. Refresh of network equipment is covered under the District's Infrastructure Upgrade Project (IUP) and is not addressed in this appendix. Software refresh for most software is provided under either the college's campus agreements. Refresh of program-specific software and technology-related equipment not covered under this appendix are provided using Program Review (PR) and the Resource Allocation Process (RAP).

5-year Hardware Refresh Cycle

Computer workstations, workgroup printers, servers and Smart classroom equipment will be replaced continuously on a 5-year cycle. The following schedule will be used:

- Year 1 (approximately 441 computers & 32 workgroup printers):
    - Student Services Area (President's Suite, Office of Instruction, Admissions, Financial Aid, Counseling, Welcome Center, Resource Center, DSP&S, EOPS/CalWORKS/CARE, Assessment, Outreach)
    - Math Building
    - ESL Lab
    - VocTech
    - Student Life
    - Administrative Services (Business Services, Buildings & Grounds, Custodial Services, Central Services, Receiving)
- Year 2 (approximately 230 computers & 7 workgroup printers, equipment for xx Smart classrooms):
    - Library Building (Library labs, common area, Library staff, IT&S staff)
    - PTEC
    - ETEC
    - Social Sciences
    - World Languages
    - Philosophy
    - Travel
    - Physical Education
    - CC2-Smart classroom workstations
- Year 3 (approximately 190 computers & 7 workgroup printers, 7 physical servers and associated equipment):
    - Science Building
    - English Department

- Year 4 (approximately 186 computers & 12 workgroup printers):
  - Brentwood Center (Computer labs, Smart classroom workstations, administrative workstations)
  - Business Department (Computer labs, Smart classroom workstations, administrative workstations)
  - Honors
  - Early Childhood Education Building
- Year 5 (approximately 207 computers & 16 workgroup printers):
  - Art
  - Journalism
  - Core Building
  - Nursing
  - EMT
  - ETEC
  - Drama

The numbers for workstations, printers, Smart classrooms and servers are counts as of fall semester 2014. The numbers will change as equipment is added or removed. Table B-1 gives more details of the equipment counts for the various areas that will be refreshed during each cycle. Costs for equipment are not included as these costs change with as new equipment becomes available. Updated counts and cost estimates for the current cycle will updated each year as the cycle approaches.

Important Considerations

The refresh cycle presented must be implemented in a planned and consistent manner that ensures that:

- No equipment used to support instructional or administrative functions becomes obsolete or unusable;
- Resources – both costs for equipment and staffing required to implement each cycle – are distributed evenly and can support implementation;
- Installation of new equipment is performed in a manner that minimizes disruption to instruction or services;
- Addition or reduction of equipment is done through the Program Review/Resource Allocation Process;
- Funding levels for equipment costs and staffing to configure, install, and maintain equipment must be identified and provided on a continuous basis.

Table B-1 – Details of Refresh Cycles

Area	Cycle	Instructional Computer Workstations	Administrative Comuter Workstations	Workgroup Printers
President's Suite	1	0	9	2
Office of Instruction	1	0	7	2
Counseling	1	0	18	1
DSP&S	1	15	7	1
EOPS/CalWORKS/CARE	1	0	11	1
Financial Aid	1	0	21	2
Admissions	1	0	23	4
Welcome Center	1	0	7	1
Assessment	1	31	5	1
Outreach	1	0	12	1
Resource Center	1	24	10	1
Business Services	1	0	6	1
Buildings & Grounds	1	0	16	2
Custodial	1	0	1	1
Central Services	1	0	5	0
Math Building	1	126	30	4
VocTech	1	10	5	4
ESL Lab	1	15	0	1
Student Life	1	5	3	1
Music	1	14	5	1
Library Building	2	124	23	3
PTEC	2	31	3	1
Social Sciences/World Languages/Travel/Philosophy	2	0	10	1
Physical Education	2	0	10	3
CC-2 Smart Classrooms	2	8	0	0
Science Building	3	107	37	4
English Department	3	33	13	3
Brentwood Center	4	51	25	5
Business Department	4	75	6	3
Honors	4	8	2	1
Early Childhood Education	4	4	15	3
Art	5	38	4	3
Journalism	5	14	1	2
Core Building	5	66	21	5

Nursing	5	19	14	1
EMT	5	1	5	1
ETEC	5	18	3	3
Drama	5	1	2	1
Cycle 1 Totals		**240**	**201**	**32**
Cycle 2 Totals		**163**	**46**	**8**
Cycle 3 Totals		**140**	**50**	**7**
Cycle 4 Totals		**138**	**48**	**12**
Cycle 5 Totals		**157**	**50**	**16**
Grand Totals		**838**	**395**	**75**

Appendix C - Technology Staffing Plan

C-1 General

In 2014, the Technology Advisory Group (TAG) started work on a comprehensive staffing plan to support all technology resources at the Pittsburg and Brentwood campuses. This staffing plan is an appendix to the Technology Strategic Plan 2014-2017 and represents staffing levels that have been identified as needed to support current technology resources required for instruction and administration.

This appendix will be modified as currently perceived needs change or as new needs are identified.

This appendix will identify staffing levels and required resources to meet the following needs:

- Identify communication channels between instructional units, administrative units and the LMC Information Technology & Services (IT&S) Department with respect to supporting technology hardware;
- Development and delivery of training in technology-related areas;
- Continued support for instructional and administrative desktop computers;
- Staffing to install and maintain computers purchased under the ongoing technology renovation projects;
- Expanded support for the Brentwood campus for both IT and Media;
- Extended support to cover IT and Media needs for some portions of evening classes in Pittsburg;
- Improve communication between instructional and administrative departments and IT&S with respect to software needs;
- Provide a more complete and reliable method of identifying and addressing computer and podium issues in instructional classrooms and computer labs;
- Comprehensive support for LMC's server infrastructure.

C-2 Staffing level goals

The staffing level goals provide here are designed to support the Pittsburg and Brentwood campuses. These levels are based on the current technology and additional technologies which are expected to be implemented in the near future. The currently identified requirements are as follows:

- Provide technology-related training for both campuses;
- Provide delivery and support of equipment for instruction during scheduled class hours;
- Provide delivery and support of equipment for events hosted by campus and public entities;
- Provide support of campus technology equipment;
- Support of network infrastructure and VoIP telephone system;
- Develop and support identified web-based applications;
- Coordinate staffing of Help Desk during Library open hours;
- Coordination and administrative support for the IT&S Department;
- Supervision of the IT&S Department;
- Facilitate communication between deans/department chairs and the IT&S department for Program Review and Resource Allocation Process needs;

- Develop processes for reporting of hardware and software issues in Smart classrooms, computer labs and classrooms;
- Provide support for specification and purchase of new technology-related items (hardware, software, services, etc.);
- Allow for the continued development and clarification of college and District processes, procedures and policies that are related to technology and the use of technology at LMC.

To meet these requirements, the staffing levels presented below are required. Spring 2014 staffing levels are indicated by an asterisk (*). These staffing presented here are goals and it is recognized that limited funding levels can be a barrier to full staffing. Support for the indicated staffing levels will be documented in the IT&S Program Reviews and Resource Allocation Process applications will be submitted to request additional staffing. These staffing levels will be adjusted as campus technology levels change due to quantity, types of technology being or expected to be used, and other yet unforeseen factors.

- 1.0 FTE Technology Training and Development Coordinator (reports to Office of Instruction)
- 0.5 FTE Media Services Technician
    - Primarily for evening media deliveries and support
- 1.0 FTE Electronics Technician*
- 2.75 FTE Computer and Network Technicians
    - 2.5 FTE for support of instructional and administrative computers (1 specialist/technician per 300 computers)
    - 0.25 FTE for support of campus workgroup printers
- 2.0 FTE Computer and Network Specialists*
    - 1.5 FTE for support of instructional and administrative computers (1 specialist/technician per 300 computers)
    - 0.5 FTE for support of servers and advanced projects
- 1.0 FTE Senior Computer and Network Specialist (housed at and reports to DO IT)*
- 1.0 FTE Web Applications Specialist*
- 0.5 FTE Senior Administrative Assistant (Full-time position shared with Library)*
- 1.0 Technology Systems Manager*

In addition to the permanent positions listed above, processes for requesting and identifying funding for additional unscheduled needs such as weekend campus events (sports, student orientation, etc.) and support for short-term programming needs will be discussed.

Position duties (as they relate to the staffing plan):

- Technology Training and Development Coordinator:
    - Develops training for technology-related topics;
    - Coordinates training efforts with the Professional Development Advisory Committee (PDAC), Office of Instruction and IT&S Department;
    - Identifies training needs through surveys, campus and departmental meetings and other means;

- o Keeps appraised of emerging technologies and works with IT&S and instructional Deans on the feasibility of implementation;
  - o Delivers training on a regular basis to identified campus constituencies.

- Media Services Technician:
  - Delivers media equipment for instructional purposes;
  - Works with Electronics Technician to support campus functions that require media support
    - o Campus sponsored
    - o Outside organizations;
  - Performs low-level repairs on media equipment (replacing defective equipment and parts);
  - Assists Electronics Technician with:
    - o Higher level repairs of media equipment
    - o Maintaining inventory records
    - o Performing scheduled maintenance and of media equipment;
  - Other tasks as assigned.

- Electronics Technician
  - o Performs high-level repairs on Smart podium equipment and other media equipment;
  - o Works with organizers of events to determine requirements and schedule media equipment
    - Oversees and coordinates delivery of equipment
    - Delivers equipment as required;
  - o Performs preventative maintenance on media equipment;
  - o Maintains inventory of media equipment;
    - Is the campus expert on media equipment including Smart classrooms
    - Specification of new equipment
    - Evaluates the design of new Smart technology;
  - o Maintains a schedule of media deliveries;
  - o Works with Computer and Network Technician/Specialists to resolve computer issues in Smart classrooms;
  - o Other tasks as assigned.

- Computer and Network Technician
  - o Performs a wide variety of configuration tasks for equipment and repairs to equipment ranging from simple to moderately difficult;
  - o Supports administrative desktop computers;
  - o Assists in lab re-imaging;
  - o Works with Electronics Technician to resolve media equipment issues in Smart classrooms;
  - o Provides basic support for printers;

- o Other tasks as assigned.

- Computer and Network Specialist
    - o Performs a wide variety of configuration tasks for equipment and repairs up to and including the sophisticated level – includes all advanced-level support;
    - o Supports administrative desktop computers;
    - o Designs prototype configurations for computers to be used in:
        - Computer labs
        - Computer-based classrooms
        - Administrative computers;
    - o Oversees lab re-imaging;
    - o Maintains servers and the services that they provide
        - Licensing
        - Network file sharing
        - Workgroup printing
        - Anti-virus
        - Software patch deployment;
    - o Installs new servers for new or updated services;
    - o Works with Electronics Technician to resolve media equipment issues in Smart classrooms;
    - o Other tasks as assigned.

- Senior Computer and Network Specialist
    - o Works with other District Office IT Network Operations Center (NOC) staff to monitor and remediate network and VoIP equipment issues;
    - o Monitors network usage;
    - o Makes changes to switch, firewall and wireless network equipment.

- Web Application Specialist
    - o Develops and maintains campus applications to support administrative and instructional functions;
    - o Works with internal clients to analyze needs and create work plans for application development;
    - o Creates development schedule based on prioritized list of applications to be provided.

- Senior Administrative Assistant
    - o Provides logistical support at all levels for the IT&S Department;
    - o Responsible for ordering all technology-related equipment and software for both campuses;
    - o Maintains software license and hardware database;
    - o Maintains IT&S Department web site;

- Schedules and supervises student Help Desk workers;
- Assists in coordinating media delivery schedules;
- Works with Technology Systems Manager to monitor budget and expenditures.

- Technology Services Manager
    - Supervises IT&S Department staff;
    - Provides plans for:
    - Implementation of new technologies
    - Technology renovation projects
    - Lab re-imaging
    - Provides backup support for all IT&S staff functions;
    - Interfaces with instructional and administrative departments to determine software and hardware needs;
    - Works with campus and District constituencies on developing campus policies, procedures and processes related to technology;
    - Oversees budgets for department and for campus technology needs;
    - Chair of Technology Advisory Group.

C-3 Process for requesting additional staffing

The process for identifying and filling staffing requirements will be performed on an annual basis as follows:

- Starting fall semester 2014, the IT&S Department will administer customer satisfaction surveys each year to evaluate the effectiveness of technology-related topics including satisfaction with support levels;
- The IT&S Department will perform its annual Program Review using the guidelines outlined in C-2, input from customer satisfaction surveys regarding technology support and other input from campus constituencies;
- Staffing levels will be evaluated, new staffing levels determined, and Resource Allocation Process applications will be made based on the findings in the Program Review.

C-4 Monitoring Smart classrooms, student computer labs and computer-based classrooms

The monitoring, identification and reporting of issues with Smart classrooms, labs, and computer-based classrooms is not currently consistent across the Pittsburg and Brentwood campuses. In some areas, issues with lab and classroom computers and Smart classroom equipment are reliably reported while, in other areas, the only reporting is a sign placed on a workstation monitor with no communication to the IT&S department. A method of providing consistent monitoring of all technology equipment across all areas of both campuses needs to be developed and implemented. This method must consider the following:

- Hours that existing IT&S staff are available to identify and remediate issues.

- Existing non-IT&S staff in the areas of Smart classrooms, computer labs and computer-based classrooms
  - In some cases, classified staff are located in the vicinity of the rooms, but these staff report to academic departments and it may not currently be in their job description to monitor and report on the computer and Smart classroom equipment in the area;
  - These staff are not always trained in the accurate identification of problems with equipment versus problems caused by the users of the equipment not being fully trained in using the equipment.
- High usage of Smart classrooms, computer-based classes and computer labs
  - Smart classrooms and computer-based classrooms are fully booked from early morning to late evening most days of the week;
  - Computer labs are open from early morning to late evening;
  - There is some self-reporting of problems, but it is often inconsistent and/or inaccurate.

To provide consistent monitoring and reporting of issues across both campuses, a discussion needs to take place that involves the academic deans and department heads, TAG, the IT&S department, and, possibly the campus room scheduler. The final solution may include some or all of the following:

- Monitoring and reporting by non-IT&S staff
  - This option will require some training of the non-IT&S staff;
- Identificaton and hiring of new IT&S staffing to fill the need;
- Scheduling breaks in classroom usage to enable IT&S staff the time to perform regular checks of equipment;
- Other solutions not presented here.

Appendix D – Total Cost of Ownership Philosophy

Introduction

Total cost of ownership of technology resources (hardware, software, etc.) must be considered to provide a sustainable technology environment at Los Medanos College (LMC). By integrating the total cost of ownership for technology resources with Program Review (PR) and the Resource Allocation Process (RAP, LMC can plan for the continued use of technology for instructional and administrative purposes. A total cost of ownership philosophy is presented here that will:

- Be integrated with PR and the RAP;
- Take into account the ability of LMC's infrastructure, both staffing and physical plant, to support existing and/or expanded technology;
- Continually evaluate the usefulness of specific technologies with respect to instruction and/or administrative functions;
- Plan for the allocation of funds to support technology beyond the initial purchase if it is determined that the use of the technology should continue.

Planning for Technology

The use of technology in instructional and administrative areas is rapidly expanding. This expansion makes planning for technology critical. Technology planning must include the following steps:

1. Identification of additional technology resources required by instructional programs and administrative departments through PR;
2. Assessment of the options and costs for the identified technology resources. Costs must include:
   a. Initial purchase of hardware and/or software;
   b. Costs required to update physical plant (network, servers, power, HVAC, etc.) to support the technology resource;
   c. Costs for configuration and installation;
   d. Estimates of time required each year for staff to maintain, upgrade or repair the technology resource;
   e. Projections of continued costs for licensing, equipment replacement, expansion of the use of the technology resource, etc.
3. Determining funding for the identified technology resource through RAP;
4. Assessment of impacts on staffing and physical plant (network, power, HVAC) for the identified technology resource;
5. Costs incurred by LMC staff in purchasing, configuring and installing the identified technology resource;
6. Continual evaluation of the effectiveness of the technology resource and a determination that the installed technology resource should continue to be used through PR and the RAP:
   a. If the continued use of the technology resource is desired, a RAP request should be submitted each year that identifies costs such as software maintenance and hardware upgrade/replacement;

b. If the use of the technology resource is to be expanded, steps 2 through 5 should be evaluated with respect to the expansion prior to submitting a RAP request.

Other Aspects of Total Cost of Ownership

In addition to the planning steps described, LMC's total cost of ownership requires consideration of the following:

- The effects of grant funding for technology resources:
    - Steps 2-5, above, must be followed when developing grants to cover costs for the duration of the grant;
    - If the grant-funded technology resources are to be institutionalized after the life of the grant, steps 1-6, above, should be followed.
- Increased use of energy by additional technology resources:
    - Energy use by the actual equipment;
    - Increased energy, maintenance, and wear and tear on HVAC systems.
- Effects on LMC staffing:
    - Increased workload on existing staff to support the technology;
        - Additonal bookkeeping;
        - Additional reporting;
        - Additional other administrative tasks;
        - Other.

Current practices

LMC currently attempts to control the total cost of ownership through the following:

- Usinng standardization for regular purchases such as computer workstations and printers;
- Creatng specifications for equipment used in Smart classrooms;
- Standardizing on computer software such as Microsoft's Office Suite and Adobe's Creative Suite.

These efforts allow more efficient purchase, deployment and maintenance of technology resources by maximizing familirarity with equipment and minimizing the training time required to support the equipment. In addition, these practices allow for spare parts or units that can be made available for the quick resolution of problems associated with the equipment.

Appendix E – Participants in the Planning Process

Name	Title	Association
Tawny Beal	Senior Instructional Manager	Management - Office of Instruction
Mike Becker	Technology Systems Manager	Management – Information Technology & Services
Curtis Corlew	Professor	Faculty - Art
Clint Ryan	Adjunct Professor	Faculty - Math
Michael Keane	Student	LMC Associated Students
Katherine Cullar	Administrative Assistant	Classified Staff - Outreach
Sharen McLean		Classified Staff – Brentwood Center
Camme Benzler	Senior Administrative Assistant	Classified Staff – Information Technology & Services & Library
Mary Oleson	Senior Administrative Secretary	Classified Staff - Office of College Advancement
Brianna Klipp	Student	LMC Associated Students
Kim Wentworth	Electronic Resource Librarian	Faculty - Library
Karan	Student	LMC Associated Students
Aderonke Olatunji	Director	Business Services
Kevin Horan	Vice-President	Management – Office of Instruction