



LONG BEACH
CITY COLLEGE

Technology Master Plan 2009-2014

“Continue to thoroughly and strategically develop plans to realign human resources and better position our technology infrastructure and distance learning programs to meet the increasing demands of our students.”

Eloy O. Oakley
LBCC Superintendent-President
*12 Month Agenda for the Advancement of
Student Success and Community Development
July 2008 – June 2009*

LONG BEACH COMMUNITY COLLEGE DISTRICT

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Executive Summary

The Technology Plan 2009-14 directs and provides a framework for technology acquisition and deployment campus wide. The Executive Summary highlights the key features of the plan that will guide and focus District action for initial implementation.

The Plan supports:

- A Long Beach City College Technology Plan Vision providing a seamless integration of technology into our School environment. (Page 4)
- Establishing review processes and criteria for approving requests for new projects, facilities and equipment based on college impact and reliable sources of funding for ongoing maintenance. A technology oversight committee needs to be formed to address the demand for new applications, changes in technology strategies and enhancements to existing systems. This committee is not intended to review smaller projects that are within the localized funding of a particular department, but is intended to address those projects that have impact to the institution outside of a local department due to the scope, size, or nature of the project. This committee will meet one to two times per year to set priorities for implementation of these projects. All requests for new applications, enhancements to existing applications, and strategic changes in technology directions should be funneled through this committee to establish implementation priorities. (See details on Page 17)
- Embedding of Guiding Principles into all technology projects as an LBCC trademark of assurance, quality and reliability. (Page 18)
- Standardization of practices, procedures and business processes for a more uniform and timely delivery of service. (Page 13)
- Centralization of staff, functions and resources, wherever possible, to optimize service delivery, promote increased production, and encourage teamwork with greater efficiency and synergy. (Page 13)
- Maintaining existing resources as a priority in any replacement/refresh cycle to protect the District's investment in technology. (Page 21)
- Flexible protocol that allows the Tech Plan to accommodate emerging needs and allow for a prompt institutional response through reorganization of priorities to account for District action. (Page 7 and 17)
- Emphasis on transparency, accountability, outcomes and strategic planning reflected in budget management based on established criteria and project review processes. (Page 14 - 15)

Part One

LBCC Technology Plan Vision:


Seamless Integration of Technology into Our School Environment

LBCC 2015: A Day in the Life of an LBCC Student


Esteban is a new student who starts at LBCC next week. He works part time at the City office downtown and plans on attending Long Beach college full time, and plans on taking classes both on-campus and online as much as his work schedule and family obligation permit.

PRIOR TO FIRST DAY OF SCHOOL


It is early in the morning; Esteban is sitting in the bus on his way to his office. He uses his mobile phone to take care of the following LBCC related tasks before reaching work.

- 
- 7:00 A.M.** Checking open enrollment on MyLBCC Website to see if some of the classes he wanted to take have openings now.
 - 7:10 A.M.** Accessing financial aid online to set up the schedule of payments.
 - 7:20 A.M.** Setting a reminder on his phone to take the assessment test this evening, at 7 p.m. Accesses LBCC Knowledge Base to learn more about the assessment test.
 - 7:25 A.M.** Replying to email confirming his interest in Anthropology Club membership.
 - 7:30 A.M.** Scheduling a meeting on the DSP&S i-Calendar to verify his learning disability status.

During his morning break at the office, Esteban uses the computer at his workstation to do the following:

- 
- 10:00 A.M.** Chatting online with an LBCC counselor to finalize his Ed Plan and transfer to UCLA.
 - 10:20 A.M.** Using VoIP to call the Honors program to inquire about his eligibility status.
 - 10:30 A.M.** A pop-up note from his friend Rose on My LBCC Facebook: "Remember orientation mtg with the President's and ambassadors 2nite@6. C U there."

Taking lunch at his desk, Esteban is doing the following:

- 
- 12:05 P.M.** Logging-on to Yahoo messenger to chat with a student mentor about the value of signing for Supplemental Instruction for his Math class.
 - 12:20 P.M.** Accessing the LBCC bookstore site to check if the material for his English 1 class is ready for pick up. He also checks for the download availability of the e-books for his History class and

astronomy classes.

12:25 P.M.

Watching music videos made by LBCC students and streamed on the college's Website then visiting the art department's exhibit on the latest collection of students' visual art.

12:30 P.M.

e-Faxing a note to the western wall in Jerusalem wishing for a successful experience at LBCC.

After work, Esteban goes to the local coffee shop and connects to the citywide WiFi using the wireless access on his new laptop (acquired through LLP, the LBCC Laptop Loan Program) to do the following:

2:00 P.M.

Visiting the LBCC career Website to uploads his resume and apply for three positions: at the ITDC helpdesk, the Foundation, and horticultural center.



2:10 P.M.

A pop-up note from LBCC Project Launch: "You may qualify for federal support; click to check your eligibility status."

2:20 P.M.

Checking the childcare calendar on LBCC Child Development Center's calendar hoping to find availability for his kid to stay at the Center when he needs to attend classes on campus this semester.

ON THE FIRST DAY OF CLASSES:

During the break between his two morning classes, Esteban stops at the lab by his classroom, to do the following:

9:50 A.M.

Logging on to Viking food services to order his lunch ahead of time and avoid long lines at 12 noon.

9:55 A.M.

Checking the status for his petition to join the online Math 110 class. He is delighted to see that his has gotten a permission number, so he registers online and logs-on to the class to download the syllabus and say hi to his fellow online students.

During his History 11 course on campus at the smart classroom in the South Quad building:

10:15 A.M.

Using his mobile phone to find data on the Web and inform the class discussion about inequality of wealth worldwide. His specific assignment is to find information about Southeast Asia. Other students research other parts of the world for the same question.



10:30 A.M.

Esteban and his fellow students are sharing their findings on the class blog; their posts are displayed on the big screen and used for the class activity

10:50 A.M.

Taking a snapshot of page and Web address of knowledge database that his instructor and classmates created together in class. He plans on using this picture as part of the mid-term class journal assignment.

After picking up his lunch at the LBCC cafeteria, Esteban is enjoying a sunny day with his laptop. He is sitting on the grass at the north quad in front of an electronic display that is continuously showing information about student services available now at the college. Esteban is using his laptop and the LBCC WiFi to do the following:

12:15 P.M.

Taking notes on some of the student services he saw on the college's electronic display

12:30 P.M.

Accessing the library electronic databases to download an article he needs for his English class tomorrow.

12:50 P.M.

Posting a response on his History class discussion forum, following notes he took when he watched the instructor's vodcast last night. He is also reading and responding to other student postings. He is also checking the latest RSS feeds and the Google alerts for his module assignment due in three weeks.



1:20 P.M.

Reading a chapter in his history class e-book, he is checking the meaning of terms on the class electronic vocabulary assistant, sharing his thoughts on the blog corner for this chapter, and assessing his comprehension of the chapter using the course's open multimedia courseware links and the meaningful feedback tailored to his needs.

1:40 P.M.

Visiting the Computer lab at the Math Success Center to arrange his sessions with the instructional specialist.

2:30 P.M.

Logging on to his English class' wiki to make changes on the paragraph of the short story he is writing with three other students as part of this week's assignment

3:00 P.M.

Using CCC Confer, he is participating in a live presentation conducted by his fellow students in the Astronomy class.

It is late in the evening; Esteban is at home. After fixing dinner for his wife and daughter, he is on his computer to do the following:

11:00 P.M.

Taking a virtual fieldtrip at the New York Tenement Museum to learn about life among the working poor in 1890. He is tagging some photos and bookmarking information to explain why this historical information matters to him today.



11:30 P.M.

Noticing his Math teacher has just logged on, he starts a chat, asking the teacher if he can help him with a brief problem he is still stuck with in the class assignment

12:00 A.M.

He just realized that he forgot to schedule his appointment with the nurse to arrange for his prescription. Logging on the LBCC Health Services, he is adding himself to tomorrow's schedule.

2:00 A.M.

After finishing all his homework, he is updating his progress report on his employer's Website and the promotional program that his boss has arranged with LBCC.

Priorities for 2009 – 2014

The Tech Plan is meant to provide general direction and a framework to assist in the implementation of technology initiatives campus wide. To assist the College Planning Committee in the annual formulation of institutional priorities with respect to technology maintenance and deployment to feed into the budget planning process, the following priorities are submitted as a guide:

Consolidation/Centralization

Provide resources to support the consolidation/centralization of technology functions and personnel campus wide that can yield significant economies of scale and optimize the workforce and support a team approach for technology management.

Infrastructure/Networking/Telecommunications

Provide the necessary support to maintain and advance the infrastructure that supports college wide connectivity and access.

Computers

Provide the necessary support to maintain existing resources. Where applicable, follow the replacement cycle established by the Plan. Provide the necessary support to continue to maintain past investment by upgrading current resources that can be recycled according to established inventory and criteria. (Page 21)

Applications, Systems and Environments

Provide support that allows the continued maintenance and advancement of applications, systems and environments. (Appendix 3 - ACIT Projects 2009)

Instruction/Student Services/ERD

Provide support to maintain the e-learning environment campus wide. Continue to provide support for ongoing development and growth to address demand and emerging needs for multimedia and online resources. (See CPS Distance Learning Plan [DL Plan](#))

The Web

Provide resources to maintain and advance the LBCC Web environment. (Page 13)

New Technology Projects

Provide support to projects that have undergone successful review and scrutiny under established guidelines for creating new labs or multimedia environments. (Page 13)

As these broad priorities are applied, it is expected that the principles and guidelines set forth in the Tech Plan will be honored. They represent a holistic, overarching umbrella and a distinguishing characteristic by which all LBCC technology practices, initiatives, projects and operations will be known. The underlying premise behind this priorities protocol is to preserve and maintain what we currently have and to grow strategically as resources allow. This plan along with the priorities outlined is to be considered a living document and, as such, bears flexibility of action along with the ability to respond to unexpected emergencies that can shift the priority focus at any time. These priorities are submitted with the understanding that the degree and extent of implementation will be determined by the availability of funding sources.

Part Two

Introduction

Long Beach City College's last Technology Plan expired in 2005. The Technology Master Plan for Long Beach City College 2006 – 2011 began with a Model to assess and identify all areas of the college that use technology. The 2006 - 2011 version guided the implementation of the first replacement cycle enacted 2006 - 2007. The first iterations of this plan were a thorough assessment of the college's inventories and needs as well as developing plans for equipment purchases and upgrades. It has been an active plan informing the decision-making process for annual capital outlay, VTEA, and other funding allocations.

This new plan covers the period from 2009 to 2014. The plan provides a framework for managing the College's technology assets from one year to the next as new computer hardware replaces old, new software technologies are introduced, new classrooms are added requiring multimedia support, DL continues its exponential growth, the demands for networking increase, and staff productivity is enhanced with the implementation of new administrative applications. The previous Technology Master Plan focused on a "list" of items to implement/achieve. The purpose and scope of this plan is designed to allow more flexibility, broad prioritization and the ability to adapt to the changes and breakthroughs in technology. Providing a framework to incorporate opportunities for innovation will keep the College current and poised for the future.

College Planning Committee

Technology Planning Task Force Charge

Develop the LBCC Technology Master Plan for the next five years.

Include these considerations:

1. Policies, strategies, and standards that address the instructional and information technology on campus and from a distance, including, telecommunications systems, electronic learning resources and tools, access, security, disaster recovery/business continuance and the operating workforce needed for these purposes
2. Hardware, software, and telecommunications infrastructure (including replacement cycles) and their costs
3. Enhancements for college planning and operations such as planning/review system, technology-mediated learning and teaching, student services systems, administrative information technologies to support data warehouse, data and imaging archiving, web interface for college communications and functions
4. Needed levels of support staff, staff development and training for all members of the college community, self-serve learner services
5. Facilities remodels, construction, and utilization plans to properly support the colleges instructional/information technologies and telecommunications systems
6. Alternatives and phase-in plan

Technology Planning Task Force Membership

Co-Chairs

John Hugunin, Assistant Professor of Computer and Business Information Systems
Mae Sakamoto, Director, Application Development & Support
Cindy Hanks, Deputy Director, Academic Computing & Multi-Media Services

Members

Hannah Alford, Research Analyst, Institutional Effectiveness
Susan Cully, Associate Professor of Computer & Office Technologies
Dr. Julian Delgaudio, Professor of History & Social Science
Gerry Jenkins, Professor of Computer and Business Information Systems
Dr. April Mansfield-Juarez, Department Head and Professor of Child and Adult Development
Ross Miyashiro, Dean, Admissions and Records
Amit Schitai, Director, Distance Learning & Instructional Technology
Dr. Leticia Suarez, Dean, Learning Resources, Teaching and Technologies

Technology Plan Model

The LBCC Technology Master Plan is embedded in the college planning process and reflects the three key planning venues in the institution that guide all planning activities:

1. The Board of Trustees' Goals
 - Academic Year 2007-09
2. The Superintendent-President's Goals
 - 18 Month Agenda for the Advancement of Student Success and Community Development / January 2007 – June 2008
 - 12 Month Agenda for the Advancement of Student Success and Community Development / July 2008 – June 2009
3. The Educational Master Plan
 - 2005 - 2010

The Superintendent-President's Agendas for The Advancement of Student Success and Community Development specifically address the development of a Technology Master Plan:

“Through the educational master planning process, develop a plan to address current technology replacement and maintenance needs, as well as longer-term administrative, classroom instructional and distance learning technology needs and support structures.” (2007 – 2008)

“Continue to thoroughly and strategically develop plans to realign human resources and better position our technology infrastructure and distance learning programs to meet the increasing demands of our students.” (2008 – 2009)

The Board of Trustees Goals for 2007 - 2009 further reaffirms the institution's focus on a technology agenda. Specifically, within their second goal to Measure and Improve Fiscal and Infrastructure Stability:

“Review technology plans with timelines and budgets for:
Administrative support
Instructional and student support services”

Furthermore, in this regard, the Board has also set goals to adopt board budget guidelines that include:

“a sound reserve for technology replacement and support”

The 2005- 2010 Educational Master Plan outlines four overarching goals to guide institutional initiatives and practices over the period covered by the plan. The Infrastructure overarching goal

sets the stage for the work of the Technology Planning Task Force (TPTF) as it discharges its mandates and establishes expected outcomes in accordance with its obligations to the college wide planning process. The work of the TPTF also embraces the remaining three overarching goals of Learning, Equity, and Teamwork and Organizational Development as it strives to fulfill its mission of providing institutional support for the technology infrastructure.

The Technology Planning Task Force was charged with the development of the LBCC Technology Master Plan to provide direction for an integrated approach to sustaining the need, application, and assessment of technology college-wide.

The LBCC Technology Master Plan represents an institutional attempt to structure an integrated approach to sustain and advance the application and usage of technology on campus. The TMP introduced a methodology for identifying, assessing, and prioritizing equipment replacement, infrastructure upgrades and recommendations to better manage and utilize technology from an institution perspective. The LBCC Technology Master Plan is viewed as a living comprehensive document subject to annual review and update to keep the institution current with its technology capital.

The LBCC Technology Assessment Matrix (see Table 1) identifies three college areas 1) Instruction, 2) Information, and 3) Student Services, and seven tracts 1) Equipment, 2) Staffing, 3) Software Licenses/Contracts, 4) Training and Support, 5) Development, 6) Accessibility, and 7) Collaborative and Social Networking.

Table 1: Technology Assessment Matrix: Identifying technology use across the Institution.

Area	Instruction	Information	Student Services
Equipment	Network Equipment Instruction Labs Classrooms AV Equipment Media production & Support Learning Resource Center Instructional servers	Network Equipment Training & conference Rooms Office computers and printers Wireless Hot zones AV Equipment Servers (DL, Lib, ACIT, CBIS, etc.)	Network Equipment Registration computers Student self-service ID/Debit card scanners Monitors for students Communication Servers for student portal
Staffing	Instructional lab support Instructional aides Instructional Technology Support for Faculty & DL Classroom support	Business Systems Analyst Media Support Staff Network Administrators Telecom Technicians Helpdesk User Support Techs DB & System Administrators Application Analysts Web Developers	ASBE IT Support Student Helpdesk DL Helpdesk
Software Licensing Contracts	Library databases Video content - distance learning and Web enhanced courses Course development software. Academic Computing	PeopleSoft, COGNOS, SPSS, Library (Voyager), Tutortrack, Laserfiche, MIS Reporting, EPOS Software (phone registration), E-mail/Outlook, MS Office Suite, Web tools Software (ColdFusion, Adobe Suite), etc	Assistive Technology Web tools such as Dreamweaver Scantron System. Human Performance Lab system
Training and Support	Integration of instructional technology into the curriculum Faculty technology support - FRC & Helpdesk. Distance learning support for faculty & students. Classroom Technology.	Media Production Staff Training Help Desk	Faculty & staff Helpdesk and workshops Student Helpdesk New Faculty Training Faculty Support Center On-Call
Development	Instructional Technology development: Development of course-specific technology-mediated instruction Development of distance learning and Web-enhanced instruction	Websites Administrative Systems On-line (Forms, Procedures, and Content Management)	Administrative Systems Student Portal Academic Advisement Module Connect the FSA Atlas to PeopleSoft interface
Accessibility	Distance Learning & Web-enhanced courses Instructional media (e.g. video, podcasts, streaming media, etc.). Classroom and Computer Labs.	Purchases: software, web applications, media and hardware purchases In-house applications Web accessibility standards, policies and administrative regulations	Student Information and service Web Pages Accessible Equipment in all Labs
Collaborative & Social Networking	Video on-demand Web 2.0 (e.g. RSS feeds, wiki, blogs), Wireless zones and Virtualization	Data warehouse information Wireless environments Bandwidth Remote access	Wireless environments Bandwidth

Funding Structures and Strategies:

Leveraging Resources for Maximum Benefit

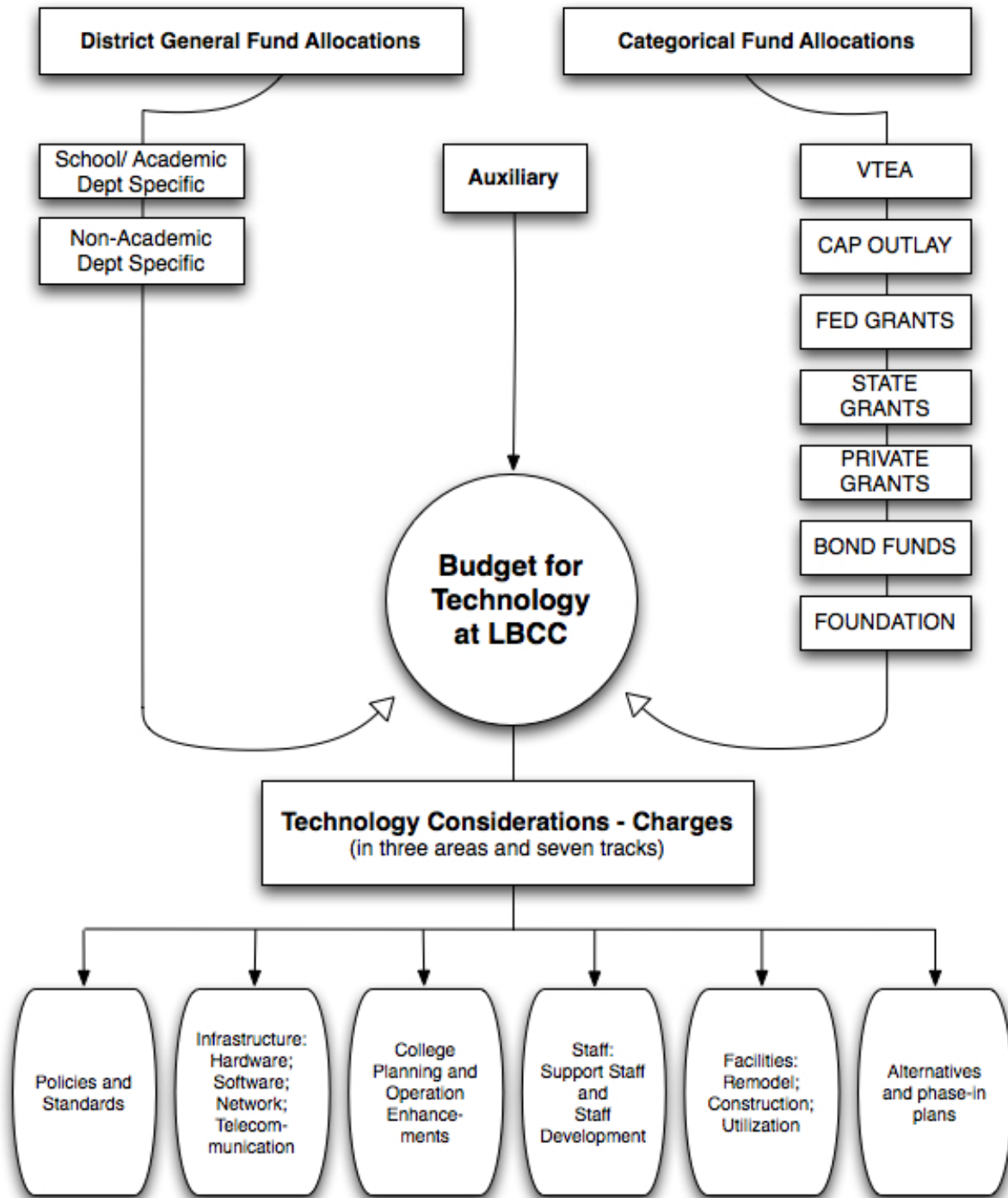
Funding Structure Array

Technology planning has transitioned from a "catch up" phase to a maintenance phase within the last two years. The premise under which the Technology Master Plan (TMP) was based implies that one time expenditure of funds to jump-start the implementation strategy will require an ongoing, sustainable district funding source to achieve total cost of ownership. As equipment ages, goes out-of-warranty and to allow for maintenance and repair, recurrent license costs and fees, and other related considerations, the TMP aims to circumvent crisis mode management of campus technology and instead develop a comprehensive and sound plan based on yearly assessments and review. The program planning and program review processes throughout the college will also inform the priorities for technology funding.

An innovation phase can now be considered which will broaden the nature of the planning approach. It is this arena of innovation that the new Technology Master Plan ventures into. Technology planning for the future outlines a strategy that is flexible, adapts to evolving conditions, and is scalable. A new model that provides a framework which allows for a user-centric, initiative-driven process is proposed.

It is critical when establishing budgets for procurement and acquisition of technology that a comprehensive approach is established. While the previous plan addressed funding cycles for equipment, it did not address a broader perspective that is needed by looking at all funding sources as well as all funding needs. The Evaluation Report from 2008 Accreditation Team visit stated, "... the challenge will be to develop an ongoing source of technology funding to realize the benefits of the extensive technology planning" and went on to state, "The team recommends that the college commit to technology funding which is responsive to college planning."

The following is a visual representation of all considerations:



Part Three

Planning and outcomes

The following section of the Technology Plan focuses on the Technology Planning Taskforce Charges as a guide and a structural organization to discuss the goals and purpose of technology planning at LBCC. Each charge captures an element of technology planning that leads to a comprehensive view of how technology is managed and deployed at LBCC.

Charge # 1. Policies, strategies, and standards that address the instructional and information technology on campus and from a distance, including telecommunications systems, electronic learning resources and tools, access, security, disaster recovery/business continuance and the operating workforce needed for these purposes

Outcomes

- Technology used in college areas conforms to college policies, regulations, guidelines, and standards in their acquisition, development, integration and delivery processes. All technology-related college policies and their implementation practices are free of biases and reflect an inclusive approach
- Electronic learning resources and tools are integrated into college instruction practices, student services, and information technologies.
- Centralization of, and resource sharing among, support staff in technology-related areas is employed when applicable for cost-effectiveness and streamlining of staff support efforts.
- Centralization of, and resource sharing among, training and professional development staff in all college areas is employed when applicable for cost-effectiveness and streamlining of training efforts.
- Centralization of, and resource sharing among, help desk staff and functions in all college areas is employed when applicable for cost-effectiveness and streamlining of technology support efforts.
- College areas integrate social networking/media and Web 2.0 technologies into their plans and practices, generating cultural change that promotes student-centered approach.

Technology evolves at an exponential rate. As our environment evolves, our needs change and there always seems to be something bigger, better and more efficient on the horizon. Although a need for better use of existing resources may exist, it is important to monitor the latest technology trends and developments. Areas such as open source software, converging audio/video and information technologies, evolving wireless standards, portable computing,

distributed computing, and voice recognition deserve our attention. Adopting new technologies should be done with planning and consideration, however planning and consideration should not stunt innovation. Therefore, it is imperative that we rely on clearly delineated policies, strategies and standards to guide the process of evaluation and implementation of current and emerging technologies.

Technology Oversight Committee

A technology oversight committee needs to be formed to address the demand for new applications, changes in technology strategies and enhancements to existing systems. This committee is not intended to review smaller projects that are within the localized funding of a particular department, but is intended to address those projects that have impact to the institution outside of a local department due to the scope, size, or nature of the project. This **committee will meet one to two times per year** to set priorities for implementation of these projects. All requests for new applications, enhancements to existing applications, and strategic changes in technology directions should be funneled through this committee to establish implementation priorities.

This committee and the Associate Vice President of Instructional and Information Technology Services will use the “**Technology Priority Guidelines**” described in this Technology Plan for allocating funding and staffing resources for current and future systems.

Charge:

Using the "Technology Priority Guidelines", develop a priority list of technology projects on an annual basis.

Assure that technology plans support the overall goals and strategies of LBCC.

Test to make sure the technology plan supports the "Technology Plan Guiding Principles."

Membership:

Co-Chair: Associate Vice President of Instructional and Information Technology Services

Co-Chair: Academic Senate faculty appointee (preferable an individual with I/T expertise)

Admin: Academic Dean

Admin: Administrative Dean

Faculty: Faculty member at large (appointed by Academic Senate)

CCA: CCA representative

Instructional and Information Technology Services:

Mark Guidas – Network Manager

Cindy Hanks – Deputy Director, Academic Computing & Multi-Media Services

Mae Sakamoto – Director, Application Development & Support

Amit Schitai – Director, Distance Learning

Reporting Structure:

This taskforce will report to the College Planning Committee (CPC); reporting milestones will be determined by CPC and the co-chairs of this taskforce.

Guiding Principles

In response to an expressed concern about technology planning and prioritization, the guiding principles below are defined and intended to help provide distinguishing characteristics for all LBCC technology deployments. As such, these principles are of equal value. The “**Guiding Principles**” evaluation is included in the broader “**Technology Prioritization Guidelines**”.

- **Standards and Policies:**

Adhere to existing technology standards to ensure technology will be compliant with all legal regulations and standards.

- **Quality:**

Commit to a management approach continually assessing the quality of technology usage to improve and deliver superior products and services at the lowest possible cost.

- **Learning and Teaching:**

Using a comprehensive strategy of development, maintenance or procurement, integrate technology into the curriculum in support of learning and teaching to mediate instruction in all types of courses for purposes of (a) engaging students and faculty in learning and teaching environments that are dynamic, interactive and accessible; (b) providing 24/7 access (c) facilitating comprehension, sharing, application and transfer of knowledge; and (d) promoting the achievement of student learning outcomes and student success. (See Appendix XXX)

- **Security:**

Provide for a secure environment for academic and administrative activities, electronic infrastructure, services, information and business continuance.

- **Usability:**

Design technology and the services it provides to be convenient, effective, intuitive and accessible for all users. Accessible means the degree to which a product, service, system or environment is usable. It is strongly related to the approach of universal design or inclusive design, which is about making things accessible to as many people as possible regardless of ability.

- **Effectiveness:**

Successful implementation and use of technology requires effective leadership, strategic planning and budget management that optimizes resources; employs an adequate number of

well-trained technology support staff; and provides consistent and high quality functioning equipment and systems.

- **Service:**

Provide excellent service and maintain a high level of user satisfaction in its delivery to students, faculty, staff and the community.

- **Currency:**

Embrace innovation and new technology while maintaining a solid reliable technology infrastructure to pursue strategies that support technology planning and remain current with technological advances.

- **Ubiquity:**

Establish and maintain a state of the art technological connectivity for the entire college community with equitable and accessible standards of support for all.

Guidelines and Criteria for New Technology Projects:

A systematic way of allocating resources and making decisions as to which projects get funded or allocated is needed in the course of supporting, improving, and developing technology at LBCC.

The Technology Plan's Guidelines and Criteria define some of the factors that need to be considered in introducing new technology features into the College. The number of these guidelines that a project addresses is an important view of the project. The criteria listed below are not exhaustive to discern the viability of projects. These initial guidelines are a beginning point to assess the project's importance in the broader context of the college:

- **Commitment to Staffing Requirements**

Decisions to acquire new equipment (hardware / software) must include an analysis of the staff support requirements and should not be approved without the accompanying commitment to provide funding for the necessary staff support (additional full-time, additional part-time, available existing staff, or outside contract options).

- **Scope of Need**

There should be a need identified and documented for the project. The scope of the need should be defined.

- **Guiding Principles**

How does the project fit into the Technology Plan Guiding Principles?

- **Cost / Benefit**

The project should be defined to an extent that an estimate of the cost can be calculated in three factors: time to complete, man hours of time, and fiscal cost. The benefit of the project should be estimated. This could be savings, number of students or faculty affected.

- **Large Context**

Projects should be looked at from the large context of the entire school and the division of resources that can accomplish the most. Can this project be consolidated with similar requests?

- **Local Context**

What is the impact of doing or not doing this project to the local department level? Is it critical for a program for the department? Departments and Schools should have some budget to do smaller projects with some autonomy.

Criteria also need to be employed to make a differentiation between staff time only projects as distinct from projects requiring funding. How these projects are prioritized would also require a different approach.

Charge # 2. Hardware, software, and telecommunications infrastructure (including replacement cycles) and their costs.
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Outcomes

- Centralization of hardware/software/network/ telecommunication resources is practiced for cost-effectiveness and efficiency.
- Consistent and reliable on-going source of funding for equipment upgrades and replacement is established.
- Centralized procurement and maintenance is practiced for college-wide workstations, development stations, labs, and classroom equipment.
- Centralized development, procurement, maintenance and usage are practiced for the use of all applications and software college-wide.
- Centralized procurement and maintenance is practiced for the use of all servers college-wide.
- Backup / recovery and disaster preparedness procedures are implemented for technology in all college areas. Identify and collaborate with an out of area institution/facility for security and emergency purposes.
- All electronic and technology-related physical environments follow usability principles are fully inclusive and accessible to all students and college staff.

Long Beach City College has identified technology and its uses as central to the success of its students and employees. In order to maintain its competitive edge, LBCC must support a robust, reliable infrastructure for the effective and efficient delivery of information, instruction, training, and all technology based services. Technology has become an essential component in the operations of the college from the delivery of a distance education curriculum, to direct classroom support, to the college's business affairs. Information itself is a strategic organizational asset and must be carefully managed and protected.

Success at using information technology requires not just a one-time investment but constant updating of hardware, software, methods, and support models. Life-cycle replacement funding should be built into planning at every level of investment in information technology (including instructional labs, personal computers, multi-media, departmental and institutional servers, applications, network hardware and software).

Equipment life-cycle recommendations:

Equipment Type	Proposed Replacement Cycle
Computer Labs Computer Lab – Type A Computer Lab – Type B Computer Lab – Type C	2 years - Cycle to other areas 2-4 years - Cycle to other areas 4-6 year cycle
Production Servers for PeopleSoft and VMWare Virtual Server Cluster	Every 2 years - (Servers to be leased)
Storage Area Network	Add storage yearly. Upgrade SAN every 5 years
Network Equipment	5 to 8 years depending on network load, congestions and equipment obsolescence.
Infrastructure, Network and IP Servers that cannot be virtualized	Every 4-5 years
Technical Support Staff Computers	Every two years - Cycle these computers to less demanding tasks or users
Multi-Media (AV) equipment	Use until its demise. Build up mode to equip every instructional space with AV equip. Bulbs need replacement every 1000 hours.
Faculty & Staff Computers	Every four years
Voice Over IP (telephony)	Replace Call Manager Servers every 5 years and phones as they break (maintenance)
Cable Plant	10-20 years life span depending on technology. Upgrade from multi-mode to single mode fiber

Academic Computer Labs Replacement Cycle

To ensure student success it is critical to maintain current and fully functioning computer labs. Through the development of this plan, criteria were established based on discipline-specific needs and type of computer lab. A timetable for replacement cycles is suggested with the understanding that available funding may cause cycles to be extended out as funding is available:

- Three-tiered approach tied to instruction content requirement based on specialized equipment specifications needed to run discipline specific software.
 - **Type “A” Lab Criteria** – This type of lab uses technology to teach technology. The software programs used by these departments are the most robust of the college and require top of the line hardware. **2 year cycle**
 - **Type “B” Lab Criteria** – This type of lab runs discipline specific software that requires moderate to higher-end hardware for proper usage. This type of lab does not require running the latest in operating systems. **2-4 year cycle**
 - **Type “C” Lab Criteria** – This type of lab runs basic and low-level applications that do not tax the system resources. This type of lab does not require running the latest in operating systems. **4-6 year cycle**
- Refresher cycle introduced to circulate replaced computers to other labs or support areas to assure currency of usage.
- Proposed purchase of 5 year warranty to extend life of equipment.

Charge # 3. Enhancements for college planning and operations such as planning/review system, technology-mediated learning and teaching, student services systems, administrative information technologies to support data warehouse, data and imaging archiving, web interface for college communications and functions

Outcomes

Instruction

- Instructional technology is integrated seamlessly into the curriculum of courses on-campus and other modalities across LBCC disciplines and their course offerings via a comprehensive e-learning environment used for courses offered in all modalities.
- An original LBCC e-learning zone system (“the e-Zone”) functions as the central gateway for accessing DL and Web-enhanced courses.

- An original LBCC e-learning course environment is used for DL and Web-enhanced courses and access through the e-learning course environment is developed and upgraded on an-going basis to promote student learning and success.
- DL courses are developed through collaboration between department representatives and the ITDC; they are ready to be assigned to instructors for customization and delivery based on the strategic DL course offering plan in each department/school.
- Student-centered Open Courseware are developed on an on-going basis to promote instructional resource sharing among faculty and to ensure optimum student access to meaningful courseware integrated into class activities, or used in supplemental learning and supplemental instruction activities. The above includes, but not limited to, interactive multimedia, Web-mediated instructional activities, database-generated instructional programs, and the use of Web 2.0 collaboration and communication features (e.g. collaborative writing, blogging, community bookmarking, blogging, instructional material tagging, and RSS feeds for research)
- A functional e-portfolio system is developed and used on both the course and the departmental/institutional levels for instructional and assessment and institutional purposes.
- Individualized, hands-on, students and faculty e-training and professional development environments are developed as needed for various institutional practices and processes.
- e-Tools for instructional research and marketing of Web-mediated courses, informed and populated by real time data (e.g. from data warehouse, PS) are developed as needed for institutional practices and processes.

Information

- Communications systems (VOIP) for desktop videoconferencing, emergency information distribution, wireless telephones, calendar-based information distribution etc. are used in manners that serve all college areas productively
- Enterprise Resource System (ERP) is continuously enhanced and upgraded with internal/external features needed for on-going purposes serving all related college areas
- College areas focus and provide total cost of ownership (TCO) analysis on acquiring new or additional technologies that enhance the value of existing technologies (e.g. website content management system, portal, electronic signature, laserfiche, etc.)
- Routine business and governance of technology are supported by secure and robust web resources available anywhere and anytime.
- College critical business systems are appropriately redundant and recoverable with minimum downtime. Formalized disaster/recovery/business restart plans in place.
- Campus virtual systems environment is expanded and strengthened as needed to support all related college areas.

- A security plan has been created and updated on annual basis.
- Information technology development is regularly integrated into the college plan processes.

Student Services

- Web-mediated student services are equivalent and complementary to the on-campus services; they are offered and accessed to fit the changing needs of student populations and the community at large.
- A student-centered environment provides students with an individualized, reliable, meaningful, and secured access to services needed throughout their college experience from recruitment to transfer and career advancement and everything in between.

Planning and Operations

- The Technology Planning Oversight Committee will recommend priorities for all new and existing projects according to the parameters for the 2009-2014 Technology Plan. The Committee will utilize information prepared from the Program Review and Planning process.
- Planning for technology is aligned with Educational Master Plan, Superintendent/President's Eighteen and Twelve Month Agendas and Board of Trustees Goals.
- When approving budget for technology at LBCC, ensure that all areas and tracks identified in this plan as depicted on the visionary budget array included in the Introduction of this plan are considered.

To maintain the institution's competitive edge as well state-of-the-art teaching, learning and working environments, instructional and information technology provides the backbone for college planning and operations that delivers and supports new systemic approaches. For example, one of the College's most substantial technology investments has been in our Enterprise Resource Program system. LBCC has invested in one of the most sophisticated systems available. As our end users become more familiar with the operation of these systems, opportunities are discovered for business process modification and system utilization, which helps College operations to be more efficient and cost effective.

Likewise, planning and review systems will assist the college in data collection for more efficient and college wide planning process. The e-learning environment at LBCC as well as online student services delivery and library online resources have opened up a new world of exploration on a 24/7 basis for anytime, anywhere, anyone access. Administrative information technologies have also made it possible to have a data-driven environment that informs all of the college's decisions and actions.

<p>Charge # 4. Needed levels of support staff, staff development and training for all members of the college community, self-serve learner services</p>
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Charge # 4. Needed levels of support staff, staff development and training for all members of the college community, self-serve learner services

Outcomes

- Centralized or localized staffing needs analyses and staff support requirements accompany any technology-related acquisition, development, or service in all college areas.
- LBCC staff is trained based on localized needs of specific professional areas, their function and needs.
- Trainers are hired based on the localized staffing plan.
- Trainers from specific areas collaborate on training and development and delivery as commonalities are evidenced.

In order to ensure that all of the technology programs and systems at LBCC function efficiently and effectively, an adequate level of staffing is paramount. In today's world, the pace of change in technology is swift. Regardless of the substantial technology inventory that already exists at LBCC, it is likely new technologies will be acquired in the next three years. Some of these technologies may replace existing older technologies. Some may come to LBCC as part of an upgrade of an existing system; however, some may be entirely new to the LBCC environment. Even the best technology is useless without talented, creative people to implement, maintain, and provide training for it. It is essential to provide adequate staffing support for all areas of the technology. Funding decisions for new technology often fail to include the longer term financial commitment for staffing. While listed as an outcome under policies, strategies and standards; it is important to reiterate that options for resource-sharing and cross-training should be evaluated and implemented whenever or wherever applicable for cost-effectiveness and streamlining of staff support efforts. Staff development and training is a key factor in the success of any staffing plan for technology support.

Technologies develop and evolve at a rapid rate of change, and keeping up with and implementing the improved technologies is an ongoing challenge for any institution. Continuing training opportunities are a critical component to the success or failure of technology.

Charge 5. Facilities remodels, construction, and utilization plans to properly support the colleges instructional/information technologies and telecommunications systems.

Outcomes

- Facilities remodels and construction projects implement and effectively utilize all applicable technology standards.
 - Green technologies such as energy efficient, recyclable products will be utilized wherever possible.
 - Design/development of new facilities incorporates resource sharing/centralization practices (e.g. shared peripherals such as combination printer/scanner/copiers wherever logical and effective).
- All technology facilities are scheduled efficiently and effectively utilized to support college wide needs.

Current planning, construction and remodel of new buildings scheduled for completion by 2020 will impact the campus technology profile with state of the art delivery systems. These new technologies and spaces will need to be properly supported through ongoing maintenance and staff support. Likewise, network and telecommunication systems will need to expand to accommodate greater demand and new communications modalities. These projects are listed below to serve as evidence of the increase in technological systems that will have an impact on the need for additional resources to support, maintain, troubleshoot and repair these systems:

- ✓ Child Development Center with state of the art IP Camera Observation System, Observation Lab and Multimedia Classroom. (Complete)
- ✓ Tech Phase II - Aviation Mechanics and Auto Mechanics Building with fully computerized repair bays and three multimedia classrooms and one computer lab/classroom. (Complete)
- ✓ Tech Phase I - Welding and other trades with Multimedia Classrooms and open learning center/computer lab which will add 6 new multimedia/computer projection systems and 4 new computer labs (82 computers). (Completion date scheduled for late 2009.)
- ✓ South Quad Complex—32 multimedia classrooms, large multipurpose room, Board room with broadcast capabilities, conference rooms. This building will have 3 computer labs (1 new lab with 40 additional computers, replaces 2 existing labs), 34 new multimedia/computer projection systems, 1 new videoconferencing system and a

- built-in three camera broadcast/recording system. (Anticipated completion, Fall 2009)
- ✓ PCC Library/Learning Academic Resource Center with computer labs, state-of-the-art videoconferencing classroom, multimedia classrooms. (Complete)
 - ✓ LAC Library/Learning Academic Resource Center with computer labs, multimedia classrooms, teleconferencing classroom. This building adds 8 new computer labs (487 computers) and 13 new multimedia/computer projection systems. (Complete)
 - ✓ PCC Multidisciplinary Academic Building remodel project will modernize and upgrade the AA, BB, DD and EE buildings. This project will add 27 new multimedia/computer projection systems, and 2 videoconferencing systems. Current plans do not add new labs but upgrade existing computer labs. (2010-2012 Two phase implementation)
 - ✓ Continued implementation of Measure E 2020 Unified Master Plan.

Charge # 6. Alternatives and phase-in plans
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Outcomes

- Older classrooms are installed with multimedia systems over a period of time and supported by portable equipment as new construction is completed.
- A consistent recycle/refresh program for multimedia equipment is phased-in over time as new resources become available.

Multimedia Equipment Services and Support is faced with the issues of not enough equipment to meet the current demands and therefore is still in an inventory growth period. Equipment is utilized until its demise. It is the goal to eventually have all classrooms outfitted with permanent multimedia projection systems based on the college standard. This implementation will stretch over a number of years taking into account the new construction and remodel of existing buildings. Therefore, a combination of new equipment purchase and upgrade of old is recommended. Portable equipment will continue to be a part of the inventory for the foreseeable future to meet needs of classes in interim areas and surge spaces, as well as needs beyond the classroom. Over time this method will be phased-out in favor of permanent technology solutions.

Appendices

- Appendix 1 - Lab Breakdown
- Appendix 2 - Computer Lab Categories
- Appendix 3 - ACIT Projects 2009
- Appendix 4 - Annual Estimated Cost