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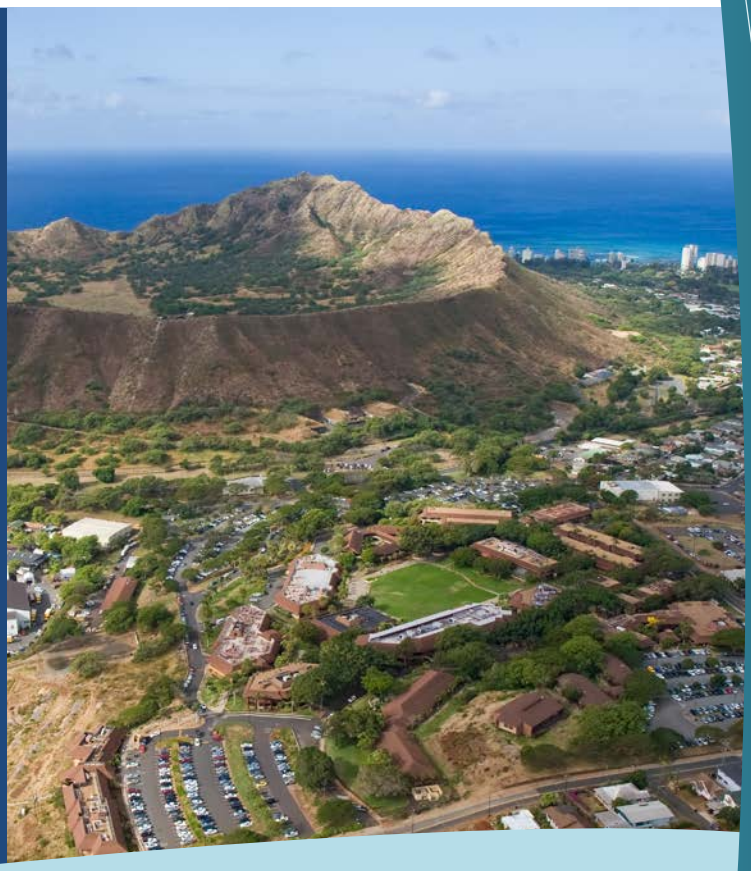
Kūlia i ka nuʻu Strive for the Highest



Kapiʻolani Community College Technology Plan 2013-2015

An Equal Opportunity/Affirmative Action Institution

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Background

Kapiʻolani Community College (KCC), one of seven community colleges in the University of Hawai'i Community College (UHCC) system, is an urban institution offering comprehensive liberal arts, natural sciences and 21st century career programs. The College bears the name of Queen Julia Kapiʻolani, who was deeply committed to the health, education, well-being and perpetuation of her people. Located on the slopes of Diamond Head, the College looks to its Hawaiian roots, as well as to the shores of Asia, the Pacific Islands and America in visioning its future.

The College traces its origins to the years immediately after the end of World War II in the Pacific. In 1946, Kapiʻolani Technical School began as a postsecondary school administered by the Territorial Department of Public Instruction, which later became the State Department of Education. In the pre-Statehood period (pre-1959), the Technical School provided training in Hotel and Restaurant Operations (1946), Practical Nursing (1947), Business Education (1956), and Dental Assisting (1959).

In 1965, the State legislature incorporated the Technical School into a new community college system under the governance of the University of Hawai'i. Renamed Kapiʻolani Community College, the institution expanded its mission and developed a new Liberal Arts program awarding the Associate in Arts degree and providing new transfer opportunities. Vocational and technical programs and continuing education programming have also expanded significantly in the last four decades.

Today, KCC serves numerous diverse communities, serving students and needs statewide. The College offers a strong developmental program and the largest liberal arts, natural sciences and transfer programs in the University of Hawai'i system. It serves as a statewide Legal Assisting and Health Sciences training center, offers an island-wide two-year Nursing degree with satellite sites at Leeward CC and Windward CC, and provides quality training programs in Hospitality, Culinary Arts, and Business Education. In addition, it offers the only programs in New Media Arts, Biotechnician, and Educational Paraprofessionals.

Technology has allowed the College to extend its reach beyond its geographic service area through online and other distance education course and program offerings. A student at KCC can complete 50% or more of the course requirements for four degrees and seven certificates (see below) wholly through the College's distance-delivered courses. The majority of the distance-delivered courses in these certificates and degrees are offered online and a smaller number of courses are offered via interactive or cable TV.

- Associate in Arts in Liberal Arts
- Associate in Science in Natural Science
- Associate in Science in Accounting
- Associate in Science in Marketing
- Certificate of Achievement in Accounting
- Certificate of Achievement in Retail Management
- Certificate of Completion Database Management
- Certificate of Completion Legal Secretary
- Certificate of Competence Retailing
- Certificate of Competence Management
- Certificate of Competence Entrepreneurship

KCC values and supports learning beyond completion of certificates and degrees. The Office for Community and Continuing Education promotes learning for a lifetime by offering a variety of programs and classes to our community. The Office's mission is to meet the training needs of Hawai'i employers looking to upgrade and diversify their employee knowledge, attitudes and skills, as well as meet the personal growth and lifelong learning aspirations of our local and global community.

The ACCJC conducted a site visit in October 2012 and the commission "took action to reaffirm accreditation, with a requirement that the College complete a Follow-Up Report" that addresses a number of recommendations. This technology plan is a response to the following recommendation:

ACCJC 2013 Recommendation

> ***College Recommendation 8: In order to meet the Standard, the team recommends that the College develop a technology plan to identify technology needs and inform the budgeting process. (Standard III.C.).***

While the College already has a system of tactical planning and program reviews which involve technology planning at the program level, and those plans are used to inform the budgeting process, this technology plan provides a central location for that technology-related information. This document provides a campus-wide view that necessarily includes needs and plans constructed at the program level.

Introduction

Technology plays a critical role in supporting the work of every member of the campus community. Technology planning, implementation, and management are aligned with the College's mission, vision, values and strategic goals. Planning for technology occurs at various levels: (1) College level as part of Strategic and Long-Range planning; (2) Program and unit level as part of the Comprehensive Program Reviews; and (3) System level (UHCC and University) guided by the University's CIO and UH ITS. Budgeting and allocation of resources are informed and impacted by planning at all three levels. This document reflects those planning efforts as well as trends in educational and general technology.

Mission & Vision Supported by Technology

College Mission Statement 2008-2015: Kapiʻolani Community College...

- is a gathering place where Hawaiʻi's cultural diversity is celebrated, championed and reflected in the curriculum, pedagogy, support services and activities, students, faculty, staff, and administration.
- is a nurturing workplace of choice for strong and caring faculty, staff, and administrators committed to effective communication and shared vision, values, mission, and responsibilities.
- strives to provide the highest quality education and training for Hawaiʻi's people.
- provides open access, and promotes students' progress, learning and success with low tuition and high quality instructional programs, student development and support services, and selective areas of excellence and emphasis.
- prepares students to meet rigorous associate and baccalaureate requirements and personal enrichment goals by offering high quality liberal arts and other articulated transfer programs.
- delivers high quality 21st century career programs that prepare students for rigorous employment standards and to meet critical workforce immediate and long-term needs and contribute to a diversifying state economy.
- prepares students for lives of ethical and social responsibility by offering opportunities for increased service-learning and community engagement.
- leads locally, regionally, nationally and internationally in the development of integrated international education, enriched through global collaborations.
- uses human, physical, technological and financial resources effectively and efficiently to achieve ambitious educational goals and generate a solid return on the public's investment for a sustainable future.
- builds partnerships within the University and with other educational, governmental, business, and non-profit organizations to support improved lifelong learning.
- uses ongoing cycles of planning, best practice research, budgeting, implementation, assessment, and evaluation to drive continuous program and institutional improvement.

Technology planning, implementation, and management are aligned with mission, vision, values & strategic goals.

VISION

Kapi'olani Community College prepares students for lives of critical inquiry and effective engagement and leadership in careers which strengthen the health, well-being, and vitality of

- ***the individuals, families, and communities that support all of us,***
- ***the cultural traditions that shape and guide all of us, and***
- ***the land and sea that sustain all of us.***

Values:

- Aloha for Hawai‘i, and its diverse peoples, cultures, languages, and environments.
- Service and attention to the needs of our diverse students and their experiences, contributions, expectations, and dreams.
- High quality, active, ongoing learning for everyone.
- Respect and appreciation for our faculty, staff, students, and administration, in recognition of their ongoing innovation and achievements.
- Honesty, integrity, and clarity in professional relationships.
- Imagination and innovation in curriculum and pedagogy and support services, and in planning, assessment and improvement.
- Shared responsibility, effective communication, and partnerships in working for the educational, social, economic, and environmental betterment of the communities we serve.

The College is developing an *ecology of learning* that connects classrooms, centers and labs, campus, community, countries abroad, and cyberspace.

Strategic Goals Drive Technology Needs

Kapi‘olani Community College is developing an ecology of learning that connects classrooms, labs and centers, campus, community, and cyberspace. [Strategic Plan 2008-2015: Framework, Process, and Context, p. 15] This learning ecology opens many avenues to faculty innovation in meeting the diverse learning styles of our students. The College is also firmly committed to meeting the needs of persons with disabilities in all of its educational programs and services, ensuring equal access to education for all students. Within this learning ecology, strong faculty commitment to indigenous, multicultural, international, and civic learning has helped prepare students for effective engagement and leadership in a globalizing era. The central force driving College innovation is the faculty’s collective commitment to high quality student learning and success realized in degree programs and cross-curricular emphases, and supported by an active Center for Excellence in Learning, Teaching and Technology (CELTT).

In alignment with the College’s Strategic Plan, departments and units identify technology needs to support strategies for improving teaching, learning, and institutional effectiveness. During the planning process, CELTT is consulted to identify the technology best suited for these purposes. Funding, procurement and management of technology is not currently centralized, and each department is responsible for funding their technology needs.

The College's Strategic Plans speaks to technology’s critical role in achievement of the following strategic outcomes and performance measures:

STRATEGIC OUTCOME A:
Native Hawaiian Educational Attainment

- ***Position Kapi‘olani Community College and the University of Hawai‘i as leading indigenous-serving higher education institutions by supporting the access and success of students of Native Hawaiian ancestry.***

PERFORMANCE MEASURE 1

A1 Increase total fall enrollment of Native Hawaiian students by five percent annually, from 840 to 1,303.

The campus uses technology to provide and expand services to native Hawaiian students in the areas of instruction and student support services. Faculty in most academic disciplines, including Hawaiian-focused areas such as Hawaiian Language, Hawaiian Studies, and Pacific Islands Studies, and faculty and staff in units such as CELTT and Library and Learning Resources have developed digital content, online courses, and technology-enhanced face-to-face courses, increasing access to instructional material and learning opportunities. Programs in all area of Student Support Services, from Outreach to Career and Transfer, leverage campus and system technology resources in myriad ways to support student

engagement, achievement and success. Those with high concentrations of native Hawaiians in their service populations include the First Year Experience, King William Charles Lunalilo Scholars Project, Student Success Peer Mentors, the Mālama Hawai'i Center and the STEM Center. Examples of technology use by these groups include new and expanded web-based services such as the Kuilei Outreach Program's High School website (http://highschool.kcc.hawaii.edu/) and the First Year Experience site (http://fye.kcc.hawaii.edu/) which provide a wealth of information and rich interactive content for prospective and first year students, as well as to high school counselors and parents supporting prospective KCC students. The KCC-DOE Alignment website (http://highschool.kapiolani.hawaii.edu/alignment) is a reference tool detailing KCC's work around remedial and foundational English and Math courses. It is a reference that can guide curriculum planning and develop around the Common Core Standards and End of Course assessments. Another example is the series of technology demos, hands-on technology workshops, technical support and computer lab provided to students in the highly-successful King William Charles Lunalilo Scholars Project (http://fye.kapiolani.hawaii.edu/lunalilo-scholars-2/).

STRATEGIC OUTCOME B:
Hawaii's Educational Capital

- ***Increase the educational capital of the state by increasing the participation and degree completion of students, particularly from underserved regions.***

PERFORMANCE MEASURE 5

B5 Using effective distance and off-site learning, increase enrollment of students from under-served regions from 1,103 to 1,481, and increase degrees awarded to these students from 74 to 110.

Technology has allowed the College to extend its reach beyond its geographic service area through on-line and other distance education course and program offerings. Distance learning course offerings has grown from 57 courses in Fall 2006 to Spring 2007 to 425 classes in Fall 2012 to Spring2013. A survey taken as part of the 2012 Accreditation Self-Evaluation shows that since 2009, 33.9% of faculty and staff have taught an online, cable television or off-site course.

The distance learning experience for faculty and students has been enhanced by the implementation of Laulima, the UH System's online course management system and KCC's implementation of Blackboard Collaborate, an online interactive learning software to create virtual classrooms, offices and meeting spaces, and systems such as 'Imiloa and Kukui (see section on Strategic Outcome D for more information on Kukui).

'Imiloa (http://imiloa.kcc.hawaii.edu) is KCC's social learning network for student engagement, learning, and success. 'Imiloa offers opportunities to connect with students, faculty, and staff and provides students with the tools and resources to help them navigate their educational pathway at the College, discover career and educational goals, and learn more about college resources and support services to help th em succeed.

PERFORMANCE MEASURE 6

B6 Every two years, target 2 CCSSE benchmark items for improvement by the next administration of the CCSSE. These items should have major impact on student success. For example, as a result of CCSSE 2008, improve student effort in completing assignments on time, and improve faculty use of textbooks, readings, and assignments. Improve Active-Collaborative Learning and Faculty-Student Interaction Benchmarks to 80th percentile.

Faculty, staff and students are using technology in ways that address all five benchmarks of CCSSE: Active and Collaborative Learning, Student Effort, Academic Challenge, Student-Faculty Interaction and Support for Learners. Faculty have enhanced face-to-face courses with technology, providing students with more means of representing knowledge including the use of rich multimedia in addition to traditional forms such as typed papers. The flipped classroom model is being adopted by faculty in various disciplines to provide more engaging homework and learning opportunities outside the classroom, and more active can challenging in-class experiences. Technology access has been expanded across campus, with computers available in traditional computers labs but also in the learning centers such as the Lama Library, the STEM Center, and the Mālama Hawai'i Center.

STRATEGIC OUTCOME C:
Economic Contribution

- ***Contribute to the state's economy and provide a solid return on its investment in higher education through research and training.***

Potential Strategy C1F Anticipate and address 21st century career programs and workforce retraining needs.

KCC's Office for Community and Continuing Education offers a wide range of customized learning solutions to enhance the necessary skills and knowledge of Hawai'i's workforce. Working in conjunction with KCC's degree programs, and CELTT, OCET seeks to be responsive to the needs of our community, flexible in offerings and entrepreneurial in their efforts to improve existing programs and create new ones. As a result, OCET has been able to promote campus resources and programs to a larger population, extend outreach to the community and foster important partnerships with businesses and industries. OCET collaborates with external organizations to design training solutions focused on practical and relevant content, and actively engages participants in the learning process. Through active engagement, employees will not only learn necessary skills and knowledge, but they will be able to readily apply what they learned to achieve success in the workplace.

STRATEGIC OUTCOME D:
Globally Competitive and Collaborative Workforce

- Address critical workforce shortages and prepare students for effective engagement and leadership in a global environment.

PERFORMANCE MEASURE 2

D2 Increase total annual student enrollment in continuing education programs that address critical workforce shortages by three percent per year, from 5,269 to 6,675.

PERFORMANCE MEASURE 4

D4 Increase degree completion in career fields with integrated technology (Nursing, Health Sciences, Biotech, IT, Digital Media Arts, Food Service) by 8 percent per year, from 222 to 410 students.

PERFORMANCE MEASURE 6

D6 Increase the number of globally competent and collaborative students through high quality, coherent curriculum aligned with general education learning outcomes assessed through e-portfolios or comparable assessment tools.

Classroom and learning facilities for these programs and many others have been or will be redesigned and/or equipped with updated technologies to facilitate needs of students, faculty, and staff, and to prepare student of these programs to use technology tools (devices, hardware, and software) of their respective professions.

Web-based electronic portfolio systems are being reviewed and the campus has launched a customized software solution, Kukui (http://kukui.kapiolani.hawaii.edu), an online platform for student and faculty engagement, collaboration, and assessment. The system includes a portfolio feature which can be used for course and program level assessment as well as for public showcasing of student work in various formats. Kukui allows faculty to link assignments to program student learning outcomes. It also includes blogging and message board tools to facilitate collaboration, sharing and engagement. This may also be an ideal platform to promote community and lifelong learning.

STRATEGIC OUTCOME E:
Resources and Stewardship

- **Recognize and invest in faculty and staff resources and develop innovative and inspiring learning environments in which to work.**

PERFORMANCE MEASURE 2

E2 Strengthen faculty and staff development to increase by one every two years the number of programs that can be completed by students in underserved regions via distance and off-site learning.

KCC provides quality training in the use of distance learning technologies for faculty, staff, and students. CELTT provides technology training for faculty and staff; the Library and Learning Resources unit and the student engagement office in the Kahikoluamea department provide technology training for students.

The University of Hawai'i's office of Information Technology Services (ITS) provides phone and web-based assistance for enterprise systems such as Banner and the MyUH Portal. The UH System also provides system-wide training for its personnel, frequently hosted by individual campuses or groups such as the Hawai'i Voyager Users Group and the Apple Summer Institute.

Decisions about professional development for faculty and staff are based on the following:

- Direct requests made by individuals, committees, administrators, department chairpersons, department chair/unit heads, and governing bodies such as the Staff Council and the Counseling and Academic Advising Council
- Trends and issues in higher education and industry (e.g., cloud computing, Web 2.0 applications, legal developments, distance education)
- Technologies identified during the strategic and tactical planning process
- Technologies identified during the course and program review process.

Based on these inputs, CELTT has provided and will continue to offer professional development workshops and resources for faculty such as the following:

- Using standard productivity software to create engaging instructional materials; software such as MS Word and PowerPoint
- Distance education tools, pedagogies, and tips for faculty
- Material resources to support student success in distance education courses such as webpage templates, webpage authoring tools, technical readiness tutorials for students, technical and behavioral expectations for students in online courses
- Development and delivery of cable TV courses and accompanying websites
- Information security and cyber-safety
- Closed captioning and transcription services such as YouTube's transcription feature
- Using UH system and campus tools such as BlackBoard Collaborate, Laulima, and Kukui.

STRATEGIC OUTCOME F:
Resources and Stewardship

- **Acquire, allocate, and manage public and private revenues and exercise exemplary stewardship over all of the University's resource for a sustainable future.**

PERFORMANCE MEASURE 2

F2 Establish minimum technology standards for all campus learning and administrative spaces. Bring all classrooms, labs, and offices into compliance by 2015. Secure advanced technologies for student engagement.

Classrooms are developed and redesigned with technology based on faculty input and identified needs. A basic technology suite for a typical instructional classroom includes an instructor's workstation with internet connection, a VHS/DVD player, a sound system, a ceiling-mounted LCD/data projector, and a projection screen. CELTT also provides a pool of loaner equipment for staff and faculty, including cameras, projectors, sound systems and laptops. Set up assistance is available on request.

The Campus Disability Access to Technology (CDAT) Plan (http://kcc.hawaii.edu/object/IO_803.html) provides guidelines for technologies needed in classrooms and labs to ensure that all students have equal access to education; those standards must be reviewed and updated on an annual basis to ensure compliance with applicable laws (Americans with Disabilities Act, the Rehabilitation Act of 1973, Sections 504 and 508).

During the CPR process, departments and units identify technology needs to support strategies for improving teaching, learning, and institutional effectiveness. During the planning process, CELTT is consulted to identify the technology best suited for these purposes. CELTT also provides guidance on technology when the College updates curriculum, plans for renovation projects, applies for grants, and when departments and units purchase equipment for faculty and staff or when classrooms are upgraded with technology (2012 Accreditation Self Evaluation, pp. 303-304).

Stewardship also involves human resources. CELTT reviews position descriptions for all employees who have direct responsibility for technology and/or technology support at the campus computer labs. This consultation ensures coordinated technology support across the campus and enables CELTT to provide appropriate support to all the College's employees in technology-related jobs (2012 Accreditation Self Evaluation, p. 304).

Technology Plans at Program and Unit Level

Instructional programs identify technology needs when developing course curricula and during the Comprehensive Program Review (CPR) process. The campus currently uses an online tool, Curriculum Central, as the primary vehicle for curriculum review. This system enables the institution to ensure that technology resources are planned for and allocated in a manner that directly supports student learning. The unit head for CELTT is a consistent presence in the curriculum review process and is required to review all course proposals submitted through Curriculum Central. In the course of reviewing proposals, CELTT makes note of any resource implications for the unit and communicates these to appropriate staff. If changes to services or operations may be warranted, the unit head plans or implements changes accordingly. The use of Curriculum Central promotes a clear connection between expected learning outcomes with the allocation and application of technology resources to support and improve the achievement of these outcomes.

During the Comprehensive Program Review process, programs and units identify technology needs to support strategies for improving teaching, learning, and institutional effectiveness; needs are aligned with the College's Strategic Plan. During the planning process, CELTT is consulted to identify the technology best suited for these purposes. Detailed implementation plans for desired technology are included in CPRs. Those documents reflect the dynamic nature of our institution and the programs' understanding of their unique learners, evolving practices of their faculty, and needs of the professions and industries for which they prepare students.

The CPRs include plans regarding technology needs for: learning and collaboration spaces; delivering instruction in face to face and online environments; delivering student support services; and administrative operations.

Technology Plans at the UH System Level

The UHCC System Office and UH ITS provide guidance for campus-based technology plans. In February 2013, the ACCJC made the following recommendation:

> UH Recommendation 4 – UH Systemwide Technology Plan: In order to meet the Standards, it is recommended that a comprehensive UH system wide technology plan that includes and supports distance education be development and implemented and is integrated with institutional planning.

In response, the University will construct and post

> "a dynamic, online resource that would capture and make available to colleges information on the current state of various aspects of technology within the

> University, the current state of development projects underway, planned future development projects, and longer term trends under consideration.
>
> The online resource would also include links to policies, governance and development groups, budget and resource allocation information, assessment and outcomes information, delineation of college responsibilities for technology, and recommendations to colleges in implementing those responsibilities.
>
> The online resource would cover the full-range of technology-related concerns including infrastructure, enterprise application, business process improvements, teaching and learning, distance education, information security, and other impacts of technology."

This online resource is expected to be made available in Fall 2013 and will inform future technology planning at KCC, at the unit and program levels as well as at the campus level.

Technology Trends

Technology planning that occurs at the program and unit levels are guided by technology trends in academic disciplines and specific industries and professions. At a campus-wide level, national trends in educational technology and in the technology industry in general, also shape campus technology planning. Technologies that were separate entities are merging and the campus is proactive in anticipating these convergences. Some examples are the merging of telephone and internet technologies and the amalgamation of audio-visual technology and computers. To the fullest extent possible, we plan for expected convergences so that they may be leveraged to our benefit.

Faculty and staff from all sectors of campus provide regular input to CELTT and the campus about technology trends in their own areas, helping to shape larger campus initiatives and plans. Examples of such input include the 2012 Accreditation Self Evaluation Data Book Two: Faculty and Staff Survey Results (http://ofie.kapiolani.hawaii.edu/wp-content/uploads/2013/01/572_databook2.pdf) and the feedback collected during the Fall 2013 General Faculty and Staff Meeting which was held on Thursday, August 22, 2013.

Trends in technology that are being monitored and may be implemented in the future include:

End-Of-Life for Microsoft Windows XP Operating System

UH ITS support for the Windows XP operating system ends on November 1, 2013 and that unit recommends all Windows computers to be upgraded to Windows 7 by the end of 2013. Microsoft's support for Windows XP ends on April 8, 2014; no security updates will be issued by the company after this date. To maintain compliance with UH ITS recommendations and ensure a safe computing environment on campus, upgrading all essential computers is a top priority.

Based on an inventory of campus computers performed in Spring and Summer 2013, the campus has about 400 computers running the Windows XP operating system. Fifty percent of those computers require upgrades to both hardware and software; the remaining 50% require only operating system upgrades. The oldest computer in use by a campus employee was purchased in 2001 and about 1,400 computers will be out of their warranty periods at the end of 2013. Efficient and safe operations of the campus require that all staff, faculty, and administrators use computers that are up to date and running supported software with updated security patches. An allocation of $500,000 would resolve these issues and bring the campus to an acceptable standard for supported hardware and software.

To minimize negative workload impacts and achieve cost savings gained by bulk purchasing of computers and software licenses, it is recommended that upgrades be made according to the following priority list which reflects the level of sensitive data and processes being performed on computing devices by these groups.

1. Administrative offices including all college administrators, Human Resources and Business Offices and their support staff
2. Counselors and Student Services Units (counselors, program coordinators, all student services staff such as KISC, DSSO, TRIO, VA, HIC, etc.)
3. Department Chairpersons and Unit Heads (faculty and their direct support staff)
4. All other staff and faculty computers
5. Open lab computers
6. Mobile computers in carts

Wireless Network Services

Networking hardware in existing buildings should be maintained and upgraded as needed to improve and expand capacity of the wireless networks. In the short-term, wireless arrays should be procured and deployed to boost capacity and meet existing and expected demand. In the long-term, new wireless technologies such as Near Field Communication (NFC) and changes to industry standards and practices will be monitored by campus IT staff. A proposal and budget for procurement of wireless arrays is being

prepared for campus consideration in early Fall 2013 with a target implementation date in summer 2014.

The campus will adopt the UH System of Authentication of users of wireless devices. This will improve existing networking services and bring the College into alignment with common authentication practices across UH system campuses and eliminate the need for end-user registration of computing devices with the campus.

The campus plans to achieve 100% wireless coverage by Spring 2014.

Strategies to support BYOD (bring your own device) in secure and managed fashion are being explored by campus IT staff. The current priority is to enhance existing wired networks and stabilize the existing wireless network to ensure continuity of core campus services.

Virtualization

The campus has implemented server and storage virtualization to improve scalability and maximize physical resources. These efforts will continue and should be maintained and expanded.

The campus has deployed thin client computing in several labs and classrooms and is now exploring Virtual Desktop Infrastructure (VDI) as a possible strategy to reduce hardware requirements and provide for more manageable and sustainable enterprise-wide computing devices. Current costs associated with large scale VDI deployments are significant; when costs become more affordable, the campus may pilot a small scale instance of VDI.

Cloud Technology

Cloud-based services are being investigated and tested by UH ITS and other entities in the UH System to provide more options for data storage and collaboration. KCC's IT staff are monitoring these investigations and pilot projects for applicability, sustainability, fiscal feasibility, and security. While cloud-based services provide a great degree of flexibility and convenience, security of data and sustainability of services are of paramount importance.

Information Security

KCC's information security efforts are aligned with the University of Hawai'i Information Security Program (http://www.hawaii.edu/infosec/infosecprogram.html) described as follows:

> The University of Hawai'i System encompasses 10 accredited campuses and additional education, training, and research centers on six islands throughout the State of Hawai'i. This highly decentralized and complex organization is dedicated

to the highest standards of scholarship and service, which requires an open flow of information and communication.

Unfortunately, over the last decade, the emergence of increasing abuse by criminals of personal information used by universities, such as social security numbers and credit card or other banking information, has challenged the decentralized culture of free flow of information. In today's world, access to personal information must be restricted to uses where it is necessary and close guarded wherever it is stored or used. Those individuals whose personal information has been entrusted to the University deserve no less.

While information security has long been the responsibility of each campus, as of 2011 the University leadership has committed to establishing and resourcing a new systemwide information security program. This approach is more cost-effective and comprehensive than is possible by continuing the decentralized approach that has been in use.

The campus has instituted measures to address the requirements of the Higher Education Opportunity Act that was reauthorized in 2009 (http://www.educause.edu/library/higher-education-opportunity-act-heoa), and to improve security of sensitive information in keeping with state and federal mandates. A comprehensive program of information security has been developed to include hardware, software, and regular training of campus employees from students to administrators. Goals of this program include:

- achieving compliance with university, state and federal policies and laws
- protecting academic resources
- increasing efficiency of networking by
    - reducing external attacks
    - preventing illegal activities that compromise network security such as illegal peer-to-peer file sharing
- prioritizing academic and operational computing activities on campus networks

Firewalls are being erected throughout the campus and a process for balancing the information security restrictions and information needs of faculty and students is being developed by CELTT, in discussion with academic and support units. Three KCC employees (Vice Chancellor for Administrative Services, CELTT Coordinator, and Campus Information Security Specialist) are members of the Joint Data Security Leadership Council and the UH IT Security Leads. Membership in these groups provides system-level guidance and informs campus-level information security plans.

Under the direction of the CELTT Coordinator and the Campus Information Security Specialist, the following has been implemented and should be maintained and expanded:

1. Registration of all campus servers with UH ITS

2. Participate in UH Information Security Compliance Assessment
3. All KCC data custodians annually complete the UH Maintenance of Sensitive Information Survey
4. KCC Campus Information Security Specialist performs follow up activities after survey data is reported
5. Establishment of groups/tiers of users based on risk (see p. 13)
6. Mandated semi-annual or annual training on state and University information security policies based on tiers of users
7. Procurement of technology based measures used to achieve compliance with the Higher Ed Opportunity Act of 2009 and improve network security, e.g., firewalls
8. Execution of Identity Finder on all campus computers to detect the presence of sensitive information; a schedule to be determined through consultation with Campus Information Security Specialist and unit managers, following priority levels based on user groups listed on p. 13
9. Delivery of hands-on workshops for campus employees on malware prevention and management
10. Campus-wide compliance with UH ITS recommendations regarding sensitive information including:
    - use of cross-cut shredders
    - engaging shredding services regularly and open those services to the entire campus
    - encrypting electronic transmission of sensitive information using UH FileDrop

To be implemented in the future are the following:

1. Implementation of the UH Wireless Authentication System
2. Institution of a De-provisioning process of users that required collaboration between CELTT and the Human Resources Office
3. Annual (minimal requirement) on-site inspection by Campus Information Security Specialist of storage systems and processes for paper-based and digital records containing sensitive information
4. Training data custodians and administrators on new and modified UH policies including the most recently adopted E2.215: UH Institutional Data Governance Policy which was approved September 2012 (http://www.hawaii.edu/apis/ep/e2/e2215.pdf).

Website Services

The campus currently employs a decentralized approach to the management of institutional information. While CELTT has primary responsibility for the technologies and services used to present information internally and externally, it is only one of many

entities responsible for generating and maintaining the information on campus websites. Ensuring currency and accuracy of information requires a concerted effort orchestrated by CELTT and campus administrators. In the coming academic year, assuming current vacancies in CELTT are filled, both the public-facing campus website (http://kapiolani.hawaii.edu) and the intranet will be replaced using more current platforms and new information architectures. CELTT has been developing guidelines for content managers and has been in regular communication with campus stakeholders through the PPAC, working on updating the content on existing sites and discussing designs for new sites. CELTT will implement campus standards for branding, marketing and public information based on guidance from Deans Frank Haas and Carol Hoshiko who are leading development of the Campus Marketing Plan. Campus standards will be aligned with UHCC and UH guidelines.

Centralized Technology Asset Management

The campus plans to centralize technology management including standardized purchasing guidelines, procurement, asset management (inventory tracking, life-cycle management, etc.), and a centralized technology fund/budget.

Given the current decentralized technology decision-making and management model wherein each office, unit, department, and subgroups such as initiatives, projects, and special programs, currently possess decision-making authority and management responsibilities, implementation of a centralized model would require input from all campus governing bodies as well as the unions whose employees will be impacted by changing workloads, primarily HGEA.

The scope of centralization should be limited to specific processes and honor and sustain current operational, personnel, and management structures in units with highly specialized needs that are best served by personnel in those units. This applies to academic programs such as New Media Arts and BLT which have highly specialized needs based on their curricula and the Library and Learning Resources support unit which has high-volume, high-workload labs such as the open computer lab and the testing center which has specialized technology needs and is a high-volume site. Any new technology management process should maintain the existing relationships which demonstrate an appropriate balance of autonomy, collaboration, and support between these units and CELTT.

CELTT has been exploring the requirements needed for centralized technology management and has identified the following factors to be addressed:

Current Challenges

The following challenges presented by a decentralized approach to technology management can be addressed effectively with a centralized strategy:

- Significant disparities exist in currency of hardware and software across departments
- Employees have resorted to bringing in personally owned technology as they wait for updated computers and printers
- A lack of standardization presents support and training issues
- Departments are hard-pressed to maintain current inventory records
- Many sectors of campus are not making use of eWaste programs
- Many computer carts are underutilized and not being maintained
- Some employees have erected their own personal Wi-Fi Access points
- The transitory nature of department chairpersons makes it difficult for individuals to adopt a long-term view with regards to technology
- The current decentralized model makes it difficult to achieve cost savings that can be obtained with discounted volume purchasing and volume licensing

Factors Involved in Centralized Technology Management

- Software licensing management – this is currently decentralized; giving responsibility for software licensing to a single unit may lead to cost savings with volume licensing but will also lead to significant increases in workload for the individuals responsible for this task.
- Asset management issues will need to be addressed including life assignment for each type of device, replacement cost planning/forecast, inventorying devices, validating campus and state records.
- Service and repair issues to be considered include: training for staff, warranty tracking, in house or outsourced repair and maintenance.
- Grant-funded technologies present a special situation in that decisions about technology acquired by grant-funded projects may be done independently of CELTT and are not subject to campus review, but in many cases, they still require the use of campus g-funded resources such as networking, power, and physical space. Long-term maintenance after the life of the grant is often not considered and in some cases, presents problems for the campus if the technology acquired is not part of standard support agreements and when the items must be eWasted since that cost is not factored in during the time the grant's budget was constructed.
- Centralized management of assistive technologies may promote a barrier-free campus and facilitate accessibility of classrooms, labs, other facilities and services.

- Coordination with Auxiliary Services is critical since this unit manages infrastructure resources that employ technology or require connectivity to campus networks such as campus printing and photocopying systems, security cameras, and managed utilities.

Resources Needed by Unit Responsible for Centralized Management

- An appropriate software system to manage inventory, licensing, asset management, cost forecasting based on estimated lifecycle of assets
- One new APT position to operate the system and assist all end users with technology procurement decision-making and purchasing
- Hardware to expedite and automate inventory tracking, e.g., mobile bar code readers, bar code label generators
- A centralized IT budget with priorities for allocation determined by campus administration and CPRs
- One new clerical position to support this effort; an Office Assistant II or III
- A full-time APT position to facilitate updates to and implementation of the CDAT Plan (http://kcc.hawaii.edu/object/IO_803.html) and related policies. This position will provide direct services in the area of technology-related accessibility to the Disability Support Services Office (DSSO), the Kapiʻolani Deaf Center (KDC), CELTT, faculty, staff, and students.

A small working group, a technology advisory group, should be formed to research and identify additional constraints, benefits, business processes, procurement issues, accessibility requirements, and resources that need to be addressed, and to create an implementation plan and timeline. This core group will consult all major stakeholders from all sectors of campus, e.g., students, faculty, staff, administration, Student Services, Community and Continuing Education, Community Relations, DSSO, KDC, Administrative Services, and Academic Affairs.

Social Media

In May 2011, the UHCC System Office enacted UHCCP #2.211 Social Media Site and/or Account Use and Management (http://uhcc.hawaii.edu/OVPCC/policies/docs/2.211.pdf). This policy is intended to ensure that any and all social media interactions on behalf of the University of Hawaiʻi Community Colleges (UHCC) represent the community college's best interests and to assist college employees in effective online communication. The policy is designed to help employees leverage the power of social media and provide guidelines and "best practices" when posting material online. These guidelines are broad in nature. Social media technology is evolving and no policy or procedure can address all the particular situations and circumstances that may arise. This Social Media Policy only applies to social media accounts created to represent College groups, departments, programs, entities, etc., and does not apply to private individual accounts.

KCC's efforts around social media are currently coordinated by a volunteer group including KCC's Campus Web Designer/Developer. Several accounts are managed by this group and have demonstrated clear traction in visitor count and overall activity. These accounts should be sanctioned as "official" KCC accounts and leveraged by all programs and units, rather than a continued decentralized and uncoordinated approach with the construction of new and proprietary social media accounts for any department or program. Usage patterns indicate that these individual accounts create more work for the department and those responsible for maintaining the social media presence. When abandoned, these social media accounts can hurt the global campus media effort by cannibalizing the very audience we are trying to build. Building interest in a common source benefits us all because it reaches a broader, ever-growing audience.

Through email newsletters sent by the Campus Web Designer/Developer to the PPAC email distribution list, CELTT has encouraged the campus to funnel announcements and events through the following volunteers.

- Official Twitter - @UHKapiolani
  Volunteer manager: Sheldon Tawata
- Official Facebook - https://www.facebook.com/KapiolaniCommunityCollege
  Volunteer manager: Jonathan Wong
- Kapio has official Twitter and Facebook accounts for student news
  Manager: Mitchell Dwyer
- YouTube Channel (we have an official channel to house marketing and program related videos)
  Volunteer manager: Raphael Lowe

Gamification

Gamification, the integration of game elements into non-game experiences to influence end-user behavior, is a strategy that is being implemented in organizations across public, private, business and educational sectors. Faculty in several departments including Health Sciences, Languages, Linguistics and Literature, and Kahikoluamea have designed and tested gamification features for instruction and student support services. These tools have been employed in highly contextualized web-based learning environments using virtual worlds and web based applications. Some features that have been tested or are under consideration include using engaging graphics, instant progress tracking, reward systems, simulated real world environments, customized feedback and learning activities based on individual assessment data. In addition to increasing student engagement through immersive environments and activities, such features can address issues of academic challenge, improve achievement and learning, and increase access to educational experiences through the Internet.

Mobile Devices and Tablets

As was stated in the opening paragraph of this Technology Plan, Kapi'olani Community College is developing a new ecology of learning that connects classrooms, labs and centers, campus, community, and cyberspace. This learning ecology opens many avenues to faculty innovation in meeting the diverse learning styles of our students.

Mobile devices are a natural part of this learning ecology, potentially enabling more collaborative and innovative learning experiences, e.g., ad hoc small group work with full wireless networking and mobile device support. Since 2011, the campus has taken a managed-adoption approach with an eye towards sustainability and use based on curricular and operational needs. The campus has approved small-scale pilot projects using various tablet devices to meet specific learning outcomes. Data from these pilot projects will help CELTT develop a long-term plan for adoption and integration. While demand for these devices is high, specific curricular integration and mission-critical use of applications unique to these devices has been limited; it is expected that this will grow as the industry matures; these technologies will enhance and transform the campus but must be done thoughtfully and deliberately. Myriad challenges are being experienced in this area and inhibit rapid enterprise-level adoption and deployment of these devices, including:

- Instability in the marketplace with many vendors selling many different devices that have varying costs, configuration options, purchasing methods, support requirements, etc.
- Purchasing constraints – the business model of apps sold only through online storefronts whose currency does not include purchase orders presents problems for traditional institutional procurement practices. Ownership of apps is also problematic.
- Security of highly portable and small devices which may contain confidential and/or sensitive information. Many users of mobile devices store personal information on those devices and often do not practice encryption, password-protection, and other standard security measures which we employ on desktop and institutional devices.
- Service and support issues – these devices are not currently supported by UH ITS and the various campuses. Support costs are thus not part of current resource allocations.

Examples of pilot projects include the following:

- The ITS program launched the course ITS 381B Topics in Information Technology: Web Applications for Mobile Devices (3 credits) in Spring 2012 and purchased tablets for the student and faculty use associated with this class.

- The Creativity Academies Project which provided iPads to student developers of art and science lesson plans in the iBooks format which supports 3D models, video and learning assessment tools.
- The King William Charles Lunalilo Scholars Project which provided iPads, apps, and regular training through CELTT on how to use the technology to support time management, personal organization, and study skills. The 2013-2014 cohort will be provided Android tablets and similar training.
- In addition to the adoption of textbooks on iPads as described in the section below, the Culinary Arts Program purchased iPads for instructors to utilize in the assessment of their students and students will be encouraged to utilize their iPads to create electronic portfolios.

Digital Textbooks

KCC faculty have been using digital textbooks for years, providing students with several options including print, online texts, and downloadable digital textbooks. This is a trend that will continue and is part of the larger conversation around mobile devices, as some texts may be limited to specific devices.

The recent adoption of digital texts by the Culinary Arts Program is a good example of this kind of innovation. The unit's tactical plan (prior to the adoption of the CPRs) included plans for a transition to electronic textbooks so that by Fall of 2015, all Culinary students will be required to have their own iPads loaded with electronic copies of their textbooks. The first phase is planned for Fall 2013 and in that phase, Fundamentals of Cookery students will be asked to bring their own existing iPads or purchase their own iPads and load them with the Inkling version of the Professional Chef textbook instead of purchasing a hard copy textbook which lacks learning resources such as streaming videos. Students who cannot meet this requirement can participate in a loaner program with the CULN department. The department plans for implementation of electronic textbooks in four classes over the next four semesters with the ultimate goal of all CULN and FSHE classes using digital texts by Fall 2015.

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