



Chaffey College

**CHAFFEY COLLEGE
STRATEGIC TECHNOLOGY PLAN**

FEBRUARY 25, 2016

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BACKGROUND

Chaffey College serves the population of western San Bernardino County in California, within the communities of Chino, Chino Hills, Fontana, Guasti, Montclair, Mt. Baldy, Ontario, Rancho Cucamonga, and Upland.

According to the most-recently published fall term enrollment statistics (2015), the College serves an ethnically diverse population of 20,902 students (26.2% full time and 73.8% part time). Most students live within the district (71.7%), with another 26% within the state, 2.1% out of state, and 0.2% international. About 69% of these students attend the Rancho Cucamonga campus, 12% the Chino campus, 11% the Fontana campus, and 9% study online. About 44.8% of Chaffey's students are first-generation college students.

The information technology infrastructure at Chaffey is currently supported by 26 professional IT staff headquartered at the Rancho Cucamonga campus. One IT individual is also stationed at the Chino campus.

In September 2014, the college retained CampusWorks to provide an information technology (IT) assessment as part of the development of a Strategic Technology Plan. Informed by the strategic vision of the College, with input from and in collaboration with over 130 faculty, staff, administrators, students, and consultants the development who actively participated in that assessment, this strategic technology plan was developed.

Executive Summary

The Chaffey College Strategic Technology Plan ("Plan") directs and provides a framework for technology direction, strategy, acquisition, and deployment district-wide. This Executive Summary highlights the key features of the Plan that will guide and focus District action for initial implementation.

The objective of the Plan is to provide a roadmap for addressing project prioritization and key issues facing technology deployment and use at Chaffey College. The Plan is a guide for the efficient and effective development, implementation, and support of technology systems to enhance instructional delivery, student learning and success, and all associated district support systems enabling departments and programs to perform their missions and achieve their strategic objectives.

The development of this Plan is based upon the following:

- The results of a technology survey that was disseminated to faculty and staff in September of 2014

- The results of and recommendations from a college-wide technology assessment conducted by technology consultants, CampusWorks, in November of 2014
- Consideration for opportunities for improvement within key areas, including the following:
 - a. Technology infrastructure
 - b. Information Technology Services organizational structure
 - c. Instructional technology
 - d. Administrative Systems technology and web self-services

The District's ability to pursue opportunities for improvement will be enhanced if there is an annual review of various efforts. The goal is to measure how well the institution is performing in numerous areas. Regular assessments of the District's circumstances will help reinforce everyone's understanding of expectations, commitments, accountabilities, priorities, etc.

Introduction

The Chaffey College Strategic Technology Plan currently covers the 2015-16 through 2019-20 academic years with the intent of having a plan that is updated yearly and always covers the current and next four academic years. 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, distance learning continues its significant growth, the demands for networking increase, staff productivity is enhanced with the implementation of new administrative applications, and new/improved web-based self-service functions become available.

The Plan is a part of the college planning process and supports the mission and strategic goals of the District.

Guiding Principles

The guiding principles listed below are intended to help provide distinguishing characteristics for all Chaffey College technology deployments and implementations.

We will adhere to existing technology standards to ensure technology will be compliant with all legal regulations and standards and able to be properly supported.

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

We will provide for a secure environment for academic and administrative activities, electronic infrastructure, services, information, and business continuity.

We will develop and/or implement technology and related services that are convenient, effective, intuitive, and accessible for all users.

We will demonstrate innovation in our use of technology by researching and implementing new and visionary technologies that will enhance the learning and work environments at the college.

We will establish and maintain state-of-the-art technological connectivity for the entire college community with equitable and accessible standards of support for all.

We will demonstrate access in the use of our technology by routinely evaluating our processes for handling divides associated with finance, geographical location, and other barriers to entry.

We will demonstrate student success in our use of technology when we enable students to access information and services by providing technological tools to achieve their goals.

We will demonstrate quality in our use of technology when we:

- Provide professional development for faculty and staff
- Provide input and feedback to enable improvements
- Prioritize funding to support technology needs

We will demonstrate mutual respect in our use of technology when we:

- Maintain civility in all of our communications
- Include all stakeholders in technology-related training opportunities
- Gather ideas and input from the different populations at the college

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 Chaffey College. The guidelines identified below define some of the factors to be considered when introducing and implementing new technology solutions. While the number of criteria that a project addresses is an important view of the overall project, it is not the sole determinant to be used in the prioritization process. The criteria listed below, while not exhaustive, should be evaluated and addressed when assessing the viability of project requests:

Total Cost of Ownership: Decisions to acquire new equipment (hardware/software) must include an analysis of the total cost of ownership (TCO), including staff support requirements, and should not be approved without the accompanying commitment to provide funding for staff support when necessary (additional full-time, additional part-time, available existing staff, or outside contracting options).

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

Consistent with Goals: How does the project support the mission of the college and/or the institution's strategic goals?

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, person hours of time, and life cycle cost. The benefit of the project should also be estimated. This could be identified as a savings or the number of students, faculty, and/or staff who will benefit from the project's implementation.

Larger Context: Projects should be looked at from the larger context of the entire college and the allocation of resources that can accomplish the most. Consideration should be given as to whether a project may 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 or 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 will also require a different approach.

Planning: Projects should be reflected in the College's integrated planning process. For example, is the project addressed in a department's or school's Program and Services Review document or college's strategic plan?

STRATEGIC TECHNOLOGY PLAN

The Chaffey College Strategic Technology Plan provides a 5-year strategic initiatives roadmap. The Plan is organized across multiple information technology categories:

- Organizational
- Instructional
- Administrative
- Data
- Network
- Hardware
- District-Wide

The following listing represents a set of strategic IT initiatives to guide decision making during over a 5-year period. These initiatives, and others that may be proposed, will be annually reviewed, updated, and prioritized by importance, impact, and prerequisite relationship with other proposed initiatives.

STRATEGIC INITIATIVES

(The highlighted initiatives are those that the Technology Committee prioritized to be addressed during the 2015-16 fiscal year and the 2016-17 fiscal year).

		2015-16 Projected Costs	2016-17 Projected Costs	2017-18 Projected Costs	2018-19 Projected Costs	2019-20 Projected Costs
1.	Organizational-01: Continue to Improve and Reinforce a Service-Oriented IT Culture and Problem-Solving Philosophy Continue to improve and reinforce a service-oriented and problem-solving philosophy and culture of true collaboration and partnership with ITS and end-users. Status: Ongoing	\$3,000				
2.	Organizational-02: Analyze and Address IT Staffing Needs Analyze IT service needs and staffing levels, comparing current staffing to staffing at comparable peer institutions, and address as necessary and feasible.	\$330,826	\$211,424			
3.	Organizational-03: Analyze Existing Business Processes Examine and map all business processes with the goal of identifying areas for process improvement or reengineering.					

4.	<p>Organizational-04: Formalize Disaster Recovery Plans Formalize and document plans for disaster recovery and business continuity.</p>					
5.	<p>Organizational-05: Implement a Help Desk Management System Investigate, acquire, and implement a robust system to submit, monitor, track, and follow-up on IT-related service requests, along with a user-accessible knowledgebase. Status: In-Progress</p>	\$17,000	\$3,500			
6.	<p>Organizational-06: Expand the Centralized Help Desk Expand and update the centralized help desk to include student technical support and extend the hours and/or days of coverage.</p>	\$40,000	TBD			
7.	<p>Organizational-07: Document and Publish IT Procedures Create and distribute documentation on IT procedures.</p>	\$0.00	\$0.00			
8.	<p>Organizational-08: Formalize Data and Information Security Plans Formalize and document plans for data and information security and compliance.</p>					
9.	<p>Administrative-01: Optimize the Use of the College's ERP Examine all ERP components with a goal of rethinking and optimizing their implementation at Chaffey. This initiative is dependent upon Organizational-03: Analyze Business Processes</p>					
10.	<p>Administrative-02: Implement Position-control Budgeting Investigate, acquire (if necessary), and implement a position-control system for budgeting that, ideally, resides within or is capable of integrating with Colleague.</p>					
11.	<p>Administrative-03: Implement Single Identity Management System for Faculty, Staff, and Students Implement an identity management solution that enables single sign-on to the network and all enterprise applications, including account provisioning and de-provisioning. Status: In-progress and ongoing.</p>					

12.	<p>Administrative-04: Integrate Curriculum/Catalog/Schedule Systems Investigate, acquire, and implement a coordinated system to address course definition, approval, catalog creation, and scheduling.</p>					
13.	<p>Administrative-05: Implement Best Practices for E-mail Investigate and implement best practice solutions and policies for e-mail serving faculty, staff, and students.</p>					
14.	<p>Administrative-06: Improve Mobile Access to College Services Investigate, expand, enhance, and improve mobile access to institutional applications. Status: In-Progress</p>					
15.	<p>Administrative-07: Investigate Software Acquisition/Management System Investigate a software acquisition/management system that is user-friendly and ensures consistency and compatibility across the institution.</p>					
16.	<p>Data-01: Implement a Document Management Solution Investigate, acquire, and implement an Enterprise content/document management systems supporting document storage, tagging, versioning, etc. Note: this initiative is related to Hardware-04: Web-Based Document Storage Solution.</p>					
17.	<p>Data-02: Implement User-friendly Ad Hoc Reporting Investigate, acquire, and implement a user-friendly, web-based reporting tool to enable end users to create their own ad hoc reports as well as comply with changing federal and state reporting requirements. Status: In-Progress</p>	\$69,700	\$14,000			
18.	<p>Data-03: Analyze and Resolve Shadow Systems Initiate a project to identify all institutional shadow systems and propose solutions for each system, including modifying Colleague, reengineering processes, building an integrated auxiliary system, or retaining it.</p>					

19.	<p>Data-04: Convert Colleague to the SQL Server Database Analyze and initiate a project to migrate Colleague from the existing proprietary database to Microsoft’s SQL Server database.</p>					
20.	<p>Network-01: Implement Ubiquitous Wireless Access Provide high-performance ubiquitous wireless access to all buildings and non-classroom gathering spaces on all three campuses. Status: In-progress</p>	\$251,000	\$100,000			
21.	<p>Network-02: Develop College-Wide Network Security Plan Initiate an IT security audit to identify any vulnerabilities, non-compliance, and other risks. Develop and implement a College-wide network security plan encompassing all campuses.</p>					
22.	<p>Network-03: Implement Redundant Internet Access Implement a second redundant point of Internet access to allow the College to continue its core functions if the primary access fails.</p>					
23.	<p>Hardware-01: Implement a Hardware Management System Fully implement a hardware/software system management server to facilitate the management of desktop/laptop configurations, licenses, and upgrades. Status: In-Progress and Ongoing</p>	\$16,380	\$17,690			
24.	<p>Hardware-02: Implement Role-based Life Cycle Institute a process to plan for equipment life cycle replacement based on end-user and group roles. Earmark and reserve appropriate recurring funding for life cycle replacement, including technology fees.</p>	TBD, based on recommended changes				
25.	<p>Hardware-03: Centralize Hardware Acquisition and Replacement Expand the computer lifecycle planning and funding process and commit to computer replacement for out-of-warranty but still active computers.</p>					

26.	<p>Hardware-04: Investigate a Web-Based Document Storage Solution Investigate and implement a web-based document storage solution that is securely accessible from the Internet. Initiate a process to regularly review end user storage requirements and proactively adjust quotas.</p>	\$0.00				
27.	<p>District-01: Improve the Chaffey Web Site Expand, enhance, and improve the design, usability, navigation, and manageability of the institutional web site.</p>	\$150,000				
28.	<p>District-02: Promote and Improve the Use of Video Conferencing at the College Facilitate, expand, and promote the use of video conferencing for both administrative and instructional purposes; investigate programmatic instructional applications for video conferencing solutions for guest speakers, collaborations with other institutions, etc.</p>					
29.	<p>District-03: Facilitate the Investigation and Implementation of New Instructional and Administrative Technologies Investigate supportable systemic implementations of new and emerging instructional technologies to support student learning.</p>					
30.	<p>District-04: Investigate options and opportunities to expand and enhance training in the effective use of technology and technology systems related to the college's programs, services, and institutional operations. Investigate the availability of various technical/technology-related training offerings, utilizing multiple delivery methods, to enhance and expand the effective use of technology at the college.</p>	0.00				

Organizational Strategic Initiatives

Strategic Initiative	<p>Organizational-01: Continue to improve and Reinforce a Service-Oriented IT Culture and Problem-Solving Philosophy</p> <p><i>Continue to improve and reinforce a service-oriented and problem-solving philosophy and culture of true collaboration and partnership with ITS and end-users.</i></p>
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(Applies to Institutional Goal 2, Objective 3)

During the November 2014 technology assessment, consultants repeatedly heard that, while individual ITS staff members were often very helpful and capable, users did not feel listened to by management or included in the problem-solving process. A large part of that perception related to a breakdown in communication about IT-related matters, especially changes that affected individuals’ day-to-day use of technology. Additionally, increased communication is needed to help users understand the difficulties inherent in properly balancing/managing the expectations of users while ensuring and maintaining secure, reliable, and accessible networks and systems.

Since November of 2014, managers and staff within the Information Technology Services department and members of the Technology Committee have made a concerted effort to enhance communication to the college community on technology issues, changes, and other IT-related matters. One example is a change to the format of Technology Committee meetings to incorporate a “debrief” at the end of each meeting. The debrief is used to identify those items discussed during the course of the meeting that should be communicated to other individuals outside the committee. Most of this information is addressed via a “Highlights from the Technology Committee” email that is distributed to all faculty and staff monthly after each meeting. Technology Committee members also communicate IT-related news to their constituents and other committees of which they are part.

Strategic Initiative	<p>Organizational-02: Analyze and Address IT Staffing Needs</p> <p><i>Analyze IT service needs and staffing levels, comparing current staffing to staffing at comparable peer institutions, and address as necessary and feasible.</i></p>
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(Applies to Institutional Goal 3; Objectives 1, 2, and 3)

During the November 2014 IT assessment, CampusWorks consultants, as well as several individuals, both outside and within ITS, noted the inadequate staffing levels in the ITS

Department. They articulated the need to increase the number and expertise of IT support staff and formalize staff professional development/training opportunities. Additionally, and contrary to standard practice at other institutions, consultants noted that student help desk support is not currently within the charge or domain of the centralized ITS group but rather is bifurcated among the Library, Admissions and Records Department, and Student Success (GPS) Centers. While such support typically is provided by an IT department, assigning such an important additional responsibility to ITS without first addressing staffing needs would be a recipe for disaster.

Strategic Initiative	<p>Organizational-03: Analyze Existing Business Processes <i>Examine and map all business processes with the goal of identifying areas for process improvement or reengineering.</i></p>
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(Applies to Institutional Goal 6, Objectives 2 and 3)

The College can improve the efficiency and effectiveness of its business processes by completing a comprehensive process analysis to identify areas where either the system rules or the business processes should be changed in order to meet institutional goals. Chaffey College should develop process-redesign teams that cut across functions and follow the student or staff life cycle, rather than looking at workflow only within a given office. The process analysis teams should also review federal and state policies and regulations to identify and remove barriers to more efficient use of resources, as well as institutional policies to remove practices that keep technology functions isolated from the functions of teaching, learning, and assessment.

Note: This proposed strategic initiative is related to Administrative-01: Optimize the Use of the College’s ERP and, is a prerequisite to it. Organizational-04: Formalize Disaster Recovery Plans

Strategic Initiative	<p>Organizational-04: Formalize Disaster Recovery Plans <i>Formalize and document plans for disaster recovery and business continuity.</i></p>
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(Applies to Institutional Goal 2, Objective 6)

Disaster recovery and business continuity plans are essential for protecting institutional data assets and ensuring that the business of the College can continue in the event of unforeseen circumstances. These plans typically deal with the issues that arise if a fire or earthquake destroys the data center or if a pandemic strikes.

Strategic Initiative	Organizational-05: <i>Implement a Help Desk Management System</i> <i>Investigate, acquire, and implement a robust system to submit, monitor, track, and follow-up on IT-related service requests, along with a user-accessible knowledgebase.</i>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

A help desk management system provides management and tracking tools for IT support staff and self-service tools for end users (students, faculty, and staff). The help desk management system provides support staff with clear, common information. Along with an integrated knowledgebase (an electronic repository of best practice solutions to common problems), a help desk management system enables the help desk staff to provide the same high quality answer each time the question is asked and independent of the particular staff member who fields the call. The knowledgebase can also serve as a rich repository of useful information that is unique to the institution.

Strategic Initiative	Organizational-06: <i>Expand the Centralized Help Desk</i> <i>Expand and update the centralized help desk to include student technical support and extend the hours and/or days of coverage.</i>
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(Applies to Institutional Goal 2; Objectives 3, 4 and 5)

The Help Desk function at Chaffey must be expanded to encompass students and the hours and/or days of support extended.

Technology support needs to be present during the Instructional service delivery hours of the institution. Faculty using technology in classrooms need a professional on-site presence during hours classes are in session.

Strategic Initiative	Organizational-07: <i>Document and Publish IT Procedures</i> <i>Create and distribute documentation on IT procedures.</i>
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(Applies to Institutional Goal 6, Objective 2)

Organizations should strive to make their IT procedures understandable and transparent to end-users, and end-users should be knowledgeable about IT procedures. For example, users should know how hardware and software is allocated and acquired, when personal computers are upgraded, what data can be accessed and what data is restricted, etc.

Strategic Initiative	<p>Organizational-08: Formalize Data and Information Security Plans <i>Formalize and document plans for data and information security and compliance.</i></p>
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(Applies to Institutional Goal 2, Objective 6)

The College should articulate data and information security plans to ensure compliance with FERPA, HIPPA, PCI and PII legislation, and other state, federal, and data security requirements. Central IT is responsible for guardianship of the digital data while other areas of the College are responsible for proper handling of paper documents and assigned electronic data resources.

Administrative Strategic Initiatives

Strategic Initiative	<p>Administrative-01: Optimize the Use of the College’s ERP <i>Examine all ERP components with a goal of rethinking and optimizing their implementation at Chaffey. This initiative is dependent upon Organizational-03: Analyze Business Processes</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Chaffey College has a mature, customized implementation of an ERP. During the November 2014 IT assessment, many staff and faculty suspected that Colleague was being used in a less-than-optimal manner. At this stage in the evolution of their ERP implementations, many institutions determine that early, less informed decisions may need to be revisited and potentially undone and that some existing modules may benefit by more-recent vendor-provided enhancements to their functionality. This initiative seeks to examine all ERP components with a goal of rethinking and optimizing their implementation at Chaffey.

Note: This proposed strategic initiative is related to initiative Organizational-03 (Analyze Existing Business Processes) that would ideally serve as a prerequisite initiative.

Strategic Initiative	<p>Administrative-02: Implement Position-Control Budgeting</p> <p><i>Investigate, acquire (if necessary), and implement a position-control system for budgeting that, ideally, resides within or is capable of integrating with Colleague.</i></p>
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(Applies to Institutional Goal 6, Objectives 2 and 3)

The current implementation of the Colleague budgeting system does not provide the functionality required for effective use at Chaffey. Consequently, personnel budgeting is entered into Colleague as a lump sum and the details are kept in a complex Excel spreadsheet (a shadow system). Although Colleague has a position-control/budgeting module, it may not meet the intended needs. This initiative seeks to identify, assess, acquire (if necessary) and implement a position-control budgeting system that, ideally, resides within or can integrate with Colleague.

Strategic Initiative	<p>Administrative-03: Implement Single Identity Management System for Faculty, Staff, and Students</p> <p><i>Implement an identity management solution that enables single sign-on to the network and all enterprise applications, including account provisioning and de-provisioning.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

An identity management system manages the identity information of individuals and groups that are authorized to access institutional systems using a common set of protocols, policies, procedures, and tools. Identity management systems are used to authenticate user access to systems, to authorize their access to data resources, to identify and manage their institutional roles and to determine their access privileges. Identity management can encompass the goal of “single sign-on” allowing users to authenticate once and gain access to multiple systems such as Colleague, Microsoft Exchange, a portal, and Moodle.

Chaffey has implemented both Microsoft’s Active Directory service and open LDAP which can be used to support identity management, however the college has not configured either today to centrally authenticate and authorize users, except in limited cases. Currently, several systems require separate identities (separate username/password stores, though usernames may be consistent by practice).

Strategic Initiative	Administrative-04: <i>Integrate Curriculum/Catalog/Schedule Systems</i> <i>Investigate, acquire, and implement a coordinated system to address course definition, approval, catalog creation, and scheduling.</i>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Currently, the processes of defining curricula and courses, approving them, updating them, describing them, scheduling classes, and publishing course catalogs are disjointed. These processes are supported by the Colleague and CurricuNET applications; however, today they are not integrated creating unnecessary steps in the process. This initiative seeks to integrate these functions into a single, coordinated process.

Strategic Initiative	Administrative-05: <i>Implement Best Practices for E-mail</i> <i>Investigate and implement best practice solutions and policies for e-mail serving faculty, staff, and students.</i>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

During the November 2014 IT assessment, several faculty and staff raised issues regarding e-mail practices, quotas, and retention guidelines.

Strategic Initiative	Administrative-06: <i>Improve Mobile Access to College Services</i> <i>Investigate, expand, enhance, and improve mobile access to institutional applications.</i>
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Applies to Institutional Goal 2, Objectives 3 and 4)

As students and faculty throughout the world embrace their smart phones and tablets, their institutions modify systems to facilitate the use of mobile devices for Instructional, business, and information access. Chaffey students seek access to many college services via mobile devices that are not currently available, and seek improved performance of current mobile access to the college’s wireless network for Internet access. To accommodate these growing demands, Chaffey College should revisit its wireless network policies (enabling multiple connections per username), expand wireless coverage, and acquire or develop mobile versions of its major applications such as Moodle, book center, etc.

Strategic Initiative	<p>Administrative-07: Investigate Software Acquisition/Management System</p> <p><i>Investigate a software acquisition/management system that is user-friendly and ensures consistency and compatibility across the institution.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4; Institutional Goal 6, Objective 2)

The College must take a systems life cycle approach to managing its software resources, ensuring technology decisions that are right for the College, good purchase-versus-build decisions, and institutional review at each critical stage of the product lifecycle. Currently, the college uses a home-grown solution to acquire and track software throughout the entire College that is not user-friendly and does not facilitate the process for deans and faculty to identify software that needs to be updated or deleted or new software that needs to be added to classrooms and labs each term. This potentially, results in inconsistent decisions, out-of-date versions, missed opportunities to leverage purchases, and possible licensing violations or duplicate purchases. Investigating a product for acquisitions and management will provide consistency, ease-of-use, and compatibility.

Data Strategic Initiatives

Strategic Initiative	<p>Data-01: Implement a Document Management Solution</p> <p><i>Investigate, acquire, and implement an Enterprise content/document management systems supporting document storage, tagging, versioning, etc. Note: this initiative is related to Hardware-04: Web-Based Document Storage Solution.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Document management systems store and manage the institution’s electronic files and documents, allowing them to be organized, searched, shared, and securely accessed by authorized users. Enterprise content/document management systems typically support facilities for document storage, tagging and searching with metadata (descriptive data about the documents), versioning, publishing, and so on.

Strategic Initiative	<p>Data-02: <i>Implement User-Friendly Ad Hoc Reporting</i></p> <p><i>Investigate, acquire, and implement a user-friendly, web-based reporting tool to enable end users to create their own ad hoc reports as well as comply with changing federal and state reporting requirements.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

The Colleague systems (student, financial, and human resources) contain a wealth of data in a form that cannot be easily harvested without the assistance of ITS staff.

The college should investigate, acquire, and implement a web-based reporting tool that is user-friendly and integrates well with the college’s ERP system, for example, Entrensis’s “Informer” product.

Note: It is recommended converting from Unidata to SQL database first, as this helps the overall reporting approach and cleans the data.

Strategic Initiative	<p>Data-03: <i>Analyze and Resolve Shadow Systems</i></p> <p><i>Initiate a project to identify all institutional shadow systems and propose solutions for each system, including modifying Colleague, reengineering processes, building an integrated auxiliary system, or retaining it.</i></p>
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(Applies to Institutional Goal 2, Objective 4)

Shadow systems are spreadsheets and databases and related applications that are built on and expand upon copies of data that have been extracted from centrally-managed enterprise systems. These can be problematic for a number of reasons, including differences in reports generated by the shadow system versus the official system of record, duplicate work process, and audit exceptions. The presence of shadow systems often indicates gaps in existing system functionality, access to information or data stores. Shadow systems must be documented and examined to determine how they are to be handled. Alternative solutions include modifying the central ERP (Colleague) to accommodate the additional data needs, reengineering processes to eliminate the need for the shadow system, building an integrated auxiliary system (that links to but does not duplicate core data), or allowing the shadow system to remain in operation, documenting its purpose and functions.

Strategic Initiative	Data-04: Convert Colleague to the SQL Server Database <i>Analyze and initiate a project to migrate Colleague from the existing proprietary database to Microsoft's SQL Server database.</i>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Ellucian, the vendor providing the College's Colleague ERP, has clarified a future product development strategy that gives precedence to the Microsoft SQL Server database management system over its formerly preferred Unidata database system currently in use at Chaffey. This initiative proposes that Chaffey migrate to SQL Server in order to take advantage of the new, preferred development and reporting tools, applications, and industry standard capabilities.

Network Strategic Initiatives

Strategic Initiative	Network-01: Implement Ubiquitous Wireless Access <i>Provide high-performance ubiquitous wireless access to all buildings and non-classroom gathering spaces on all three campuses.</i>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Faculty and student users reported that wireless coverage is weak and spotty in some areas and that much of the existing wireless authentication scheme is not mobile-device friendly, necessitating repeated authentication actions during the day. They report that wireless access is not consistent outside and throughout campus buildings. The wireless network should be available and reliable within all classroom and non-classroom gathering spaces, and in all workspaces throughout the three campuses.

Strategic Initiative	Network-02: Develop College-Wide Network Security Plan <i>Initiate an IT security audit to identify any vulnerabilities, non-compliance, and other risks. Develop and implement a College-wide network security plan encompassing all campuses.</i>
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(Applies to Institutional Goal 2, Objective 6)

The College should develop a formal network security plan to identify and address any security vulnerabilities so that resources are properly applied to ensuring a secure network environment. The network security plan should include but not be limited to regular systems health checks, intrusion detection, network scans, review of policies & procedures, and security-awareness training.

Strategic Initiative	<p><i>Network-03: Implement Redundant Internet Access</i></p> <p><i>Implement a second redundant point of Internet access to allow the College to continue its core functions if the primary access fails.</i></p>
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(Applies to Institutional Goal 2, Objective 6)

Currently, the Chaffey College network connection to the Internet is implemented at a single point. If that single point fails, the College loses all access to the Internet and all hosted applications (such as Moodle). A second redundant point of Internet access will allow the College to continue its core functions if the primary access point fails.

Hardware Strategic Initiatives

Strategic Initiative	<p><i>Hardware-01: Implement a Hardware Management System</i></p> <p><i>Fully implement a hardware/software system management server to facilitate the management of desktop/laptop configurations, licenses, and upgrades.</i></p>
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(Applies to Institutional Goal 2, Objective 4)

The task of managing hardware (hundreds of computers, laptops, printers, tablets, etc.) is overwhelming for a small IT staff without an effective computer management system to distribute, update, and refresh software applications, track licenses, provide backups, and manage recovery or rebuild of compromised computers. Chaffey has begun to implement Microsoft’s System Center Configuration Manager (SCCM), formerly known as Systems Management Server (SMS), Casper Suite by Jamf, and plugins such as Ninite, to accomplish many of these tasks. This initiative seeks to fully implement this robust system to manage desktop/laptop operating systems and applications, licenses, and upgrades.

Strategic Initiative	<p>Hardware-02: <i>Implement Role-Based Life Cycle</i> <i>Institute a process to plan for equipment life cycle replacement based on end-user and group roles. Earmark and reserve appropriate recurring funding for life cycle replacement, including technology fees.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Due to budget constraints, the College was forced to move from a three-year to a five-year computer replacement target. In practice, for a variety of reasons, some faculty and staff reported much older computers in use. Further, computers placed in public areas, such as student labs, meeting/conference rooms, the bank of computers in Admissions and Records and kiosk-type applications are not a part of the regular five-year replacement target.

This initiative seeks to institute a comprehensive computer replacement strategy guided by the role-based needs of individual users or user groups. For example, users or labs with heavy processing/memory requirements should have their computers replaced often (annually or biennially); those with limited needs, such as Web browsing and simple document editing, need to be replaced much less often. A carefully planned and executed “trickle-down” program can optimize the use of the computers that are replaced.

Finally, any life cycle plan is viable only if it has the appropriate funding allocation to make it a reality as opposed to a wish list.

Strategic Initiative	<p>Hardware-03: <i>Centralize Hardware Acquisition and Replacement</i> <i>Expand the computer lifecycle planning and funding process and commit to computer replacement for out-of-warranty but still active computers.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Currently, Chaffey’s computer lifecycle replacement plan calls for some computers to be replaced every five years (others, such as public computers and computers installed in meeting/conference rooms, are not even part of this plan). Replacement plan computers are acquired centrally, but are purchased without extended warranties, relying only on the one-year manufacturer warranties. When computers fail during years two through five, faculty, staff, and departments are left to their own devices to provide replacement computers. This initiative seeks to expand the computer lifecycle planning and funding process to include all institutionally purchased computers and provide replacements for all unusable computers, regardless of their warranty status or position in the lifecycle plan. Further, it proposes the formal implementation of policies that all hardware and software acquisitions be explicitly approved by ITS before purchase.

<p>Strategic Initiative</p>	<p>Hardware-04: Investigate a Web-Based Document Storage Solution <i>Investigate and implement a web-based document storage solution that is securely accessible from the Internet. Initiate a process to regularly review end user storage requirements and proactively adjust quotas.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

During the November 2014 IT assessment, faculty and staff articulated the need to have centrally supported and backed-up document storage that is accessible from anywhere. Faculty and staff also reported having problems with the then-current quota limitations on e-mail and “Z-Drive” file storage, indicating that the limitations cause lack of productivity and sub-optimal work. Unlimited quotas on centralized file and mail systems are typically unrealistic, but quotas should be reviewed regularly to ensure that they meet user needs without requiring inefficient or undesirable end user work-a-rounds. Finally, faculty and staff require a solution that is securely accessible from anywhere they can obtain a network connection.

District-Wide Strategic Initiatives

<p>Strategic Initiative</p>	<p>District-01: Improve the Chaffey Web Site <i>Expand, enhance, and improve the design, usability, navigation, and manageability of the institutional web site.</i></p>
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(Applies to Institutional Goal 2, Objective 3)

During the November 2014 IT assessment, faculty, staff, administrators, and students criticized the current institutional web site for its structure, navigation, search capabilities, and noted that the capabilities to update and maintain information is weak. This initiative seeks to expand, enhance, and improve the usability, navigation, and maintenance of the institutional web site.

Strategic Initiative	<p>District-02: Promote and Improve the Use of Video Conferencing at the College</p> <p><i>Facilitate, expand, and promote the use of video conferencing for both administrative and instructional purposes; investigate programmatic instructional applications for video conferencing solutions for guest speakers, collaborations with other institutions, etc.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Chaffey College has built and maintains an infrastructure containing 20 video conferencing facilities that are currently used almost exclusively for administrative and instructional meetings. Potential instructional applications include utilizing faculty to deliver specialized courses to multiple campuses, enhancing course offerings at smaller campuses, extending and supplementing instructional programs, etc.

Most of Chaffey’s video conferencing technology is implemented in conference rooms. Classroom-based interactive video conferencing design presents some additional challenges but should be investigated more thoroughly to determine the added value it brings to classroom instruction.

Strategic Initiative	<p>District-03: Facilitate the Investigation and Implementation of New Instructional and Administrative Technologies</p> <p><i>Investigate supportable systemic implementations of new and emerging instructional technologies to support student learning.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

Chaffey should charge the Technology Committee to facilitate supportable systemic implementations of new and emerging instructional and administrative technologies. New and emerging technology solutions should be investigated as collaborative projects involving faculty, staff, and administrators.

Strategic Initiative	<p><i>District-04: Investigate options and opportunities to expand and enhance training in the effective use of technology and technology systems related to the college’s programs, services, and institutional operations.</i></p> <p><i>Investigate the availability of various technical/technology-related training offerings, utilizing multiple delivery methods, to enhance and expand the effective use of technology at the college.</i></p>
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(Applies to Institutional Goal 2, Objectives 3 and 4)

The college should investigate various training options to expand, enhance, and facilitate the use of the technology employed at the college. The results of a technology survey conducted in September of 2014 revealed a need for additional training opportunities. While many respondents did not specifically identify the nature of the desired training, those who did specify such information typically pointed to the need for additional training using the Moodle platform.

SUMMARY AND NEXT STEPS

This strategic technology plan, created in collaboration with faculty, staff, administrators, students, and consultants, is intended to chart the direction for the development and evolution of information technology infrastructure, services, and support at Chaffey. The plan is not intended to dictate specific operational solutions, but rather, provide a strategic context within which operational IT decisions can be made, that is, to serve as a set of guidelines (a “blueprint”) for making informed decisions about information technology systems, acquisitions, implementations, and ongoing support.

This initial strategic information technology plan should not be viewed as an end to IT planning but rather as a beginning. It should immediately generate a one-year tactical/operation plan to guide IT acquisitions and decisions for the remainder of fiscal year 2016. The experiences gained during the implementation of that one-year operational plan will provide feedback to further inform and shape the long-term strategic plan. The strategic plan can therefore be reviewed and updated annually and revisited in detail every five years.

Annual review and updates may include, but not be limited to:

1. Reviewing all strategic IT initiatives, updating/modifying as necessary, and prioritizing the initiatives for the upcoming year.
2. Estimating the costs and benefits, both tangible and intangible, of each of the proposed initiatives for the upcoming year.
3. Determining the feasibility of each of the proposed initiatives for the upcoming year from an operational, technical, economic, and organizational perspective.
4. Setting priorities among the selected feasible initiatives for the upcoming year.
5. Creating project action/implementation plans and schedules for the prioritized initiatives.
6. Setting project milestones and completion dates for the prioritized initiatives.
7. Monitoring the completion of the prioritized initiatives and assessing the performance in meeting identified objectives.

This strategic technology plan is intended to be a “living document,” responsive to the needs and aspirations of all college constituents. All members of the Chaffey community are invited to participate in its creation and ongoing refinement and maintenance.