



CENTRAL WASHINGTON UNIVERSITY

Your future is Central.

Information Services Assessment

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Information Services Assessment

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EXECUTIVE SUMMARY

Central Washington University (CWU) engaged BerryDunn to perform an independent and objective information services assessment during March and April of 2012. The scope of this assessment considered IT organizational structure, staffing patterns, enterprise systems, planning, and governance. This report presents the results of our work and analysis and is intended solely for the information and use of management at CWU.

The information gathering portion of our assessment was conducted onsite at the CWU campus from March 13, 2012 to March 15, 2012. Our process engaged 186 individuals from across the University, including students, faculty, and staff. A full list of participants is included in Appendix F of this report.

Current Challenges

Over the past five years, CWU has been impacted by budget cuts and decreased resources. Simultaneously, demands for IT services have increased as departments look to use technology to ‘do more with less’, make better, data-driven decisions, and to help increase enrollment by attracting and retaining students. Like the entire University, the IT community has seen an increase in workload and a decrease in resources.

The University’s use and management of information technology now faces significant and substantive change. The recent change in resources is not a temporary situation and University leadership must adapt to more strategic and sustainable practices. CWU needs to find ways to better utilize existing technology, and in some cases, may need to shift resources in order to meet evolving needs.

Our assessment has been developed in consideration of the challenges the University is facing, and in light of practices that will be most effective and sustainable for CWU in the future.

Overview of Findings and Recommendations

This report presents findings and recommendations in seventeen areas for leadership of the University to consider, prioritize, and address. The most significant and impactful changes relate to:

- Making IT Governance more effective,
- Technology planning and priority setting,
- Management of PeopleSoft upgrades,
- Meaningful business processes analysis,
- Increased collaboration with functional and technical staff,

- Deployment of self service capabilities,
- Collaborative planning for distance and online learning technology,
- New roles and organizational changes for IT functions,
- Establishing a sustainable IT refresh program

All our findings and recommendations are presented in a narrative style organized into three topic areas of; Governance and Planning, Management and Operations, and Systems and Infrastructure. Specific recommendations are clearly described in each area and an overview is provided on p.10. A recap of recommendations and relevant cost impact is presented in a table beginning on page 49 of the report. At the request of our client, a description of next steps for implementing change is also presented on page 57.

Strengths Observed at Central

An IT assessment is critical in nature and, accordingly, this report focuses on areas for improvement. However, BerryDunn observed strengths demonstrated by the ITS Department and University as a whole.

For example, notable to us was a genuine commitment by leadership and staff to do “more with less” at a time when they have been under pressure to reduce budgets and maintain and/or expand services. We also observed efforts to streamline processes and reduce customizations through better use of the PeopleSoft system. For example, in the course of upgrading to version 9.0 of the software 80 custom software modifications were retired. This helps to reduce support load and improve system manageability.

Next Steps

The University should consider all of the recommendations and issues identified in this assessment. CWU should continue the process started with this assessment, set priorities, and make changes including:

- Developing a streamlined and simplified IT Governance model that improves decision making, prioritization and communication.
- Improving data stewardship at the University by firmly establishing PeopleSoft as the system of record.
- Focusing on expanding Self-Service functionality available in PeopleSoft. For example, there are inherent cost savings to be realized if employees enter their own time.



- Over time, shift staffing resources to support areas of future growth and need while retiring services and projects that do not align with University priorities.
- Standardize the process for developing business requirements and documenting needs for technology applications and services to better manage limited staffing resources and funding.

We want to take this opportunity to acknowledge and thank the leadership, faculty, and staff at CWU for their active participation and cooperation in this project to date.

CURRENT ENVIRONMENT

The following is a description of the current IT environment at the University as of our onsite assessment March 13, 2012 to March 15, 2012.

University Enrollment

As of the fall semester of 2011, the University had a headcount of 11,473 students enrolled, totaling 10,788 FTEs. Of these students, 85% are at the University's Ellensburg campus, and 15% are at the six University center locations at Des Moines, Lynnwood, Pierce County, Moses Lake, Wenatchee, and Yakima. Of the students taking classes at the University centers, 90% are doing so via online learning or distance education.

University Leadership

University leadership consists of the President's Cabinet, comprised of the President, the Chief of Staff, the VP of Business & Financial Affairs, and the Provost/VP of Academics and Student Life. These same members comprise the Information Technology Steering Committee (ITSC) whose function is to aid the Enterprise Information Systems Governance Team (EISGT) in prioritizing capital and operating resources for Enterprise, Academic and Auxiliary systems. The EISGT is the primary university-wide advisory group whose responsibilities include project portfolio management. Another group, the University Academic Technology Advisory Committee (UATAC) also provides key academic input to the EISGT.

Information Technology Systems Department

The Information Technology Systems (ITS) function at the University is comprised of 61 full-time positions and approximately 15 student workers. See ITS Department Organization Chart at Appendix B.

The ITS Department reports to the VP of Business & Financial Affairs, and is structured into seven functional areas: Enterprise Application Services, Auxiliary Computing Services, Computer Support Services, Customer Support Services, Networks & Operations, Telecommunications Services, and Project Management. Each functional area is led by a Manager or Director that reports to the Assistant VP of Information Technology. The staffing levels in each functional area are summarized on the following page. All staffing counts referenced in this assessment are based on data provided by the Human Resources department, and are as of fall 2011.

Figure 1: ITS Composition by Functional Area

ITS Composition by Functional Area			
ITS Unit	Head Count	FTE	% of Total
Enterprise Application Services	20	19.50	33%
Networks & Operations	11	10.75	18%
Computer Support Services	9	8.75	15%
Telecom Services	6	6.00	10%
ITS Project Management	6	5.50	9%
Auxiliary Computing Services	5	5.00	8%
Information Technology Services	4	4.00	7%
Total	61	59.50	100%

The 2011 budget for the ITS Department accounts for approximately 6% of the University’s \$93.8 million total operating budget. This ratio is higher when compared to the 5% IT spending level reported by other institutions classified as “Masters Institution I” by the 2009 Carnegie Basic Classification in the Educause Core Data Survey 2011 Fiscal Report (“Core Data Survey”)^[1]. The 61 ITS Department FTEs provide support services to approximately 1,100 institutional FTEs (faculty and staff). The ITS Department staff as a percentage of these total institutional FTEs is 5%, which is on par with the 5% reported by the Core Data Survey. Additional benchmarking analysis is provided on pages 8-9 of this report.

Distributed Information Technology

In addition to the IT resources located in the central ITS Department; there are 25.8 FTEs providing technology support distributed throughout the University. Each of the departments identified in the following table have individuals performing IT duties for their departments.

^[1] <http://net.educause.edu/ir/library/pdf/CDA1103.pdf>

Figure 2: Distributed IT Staff Count

Distributed IT Staff			
CWU Department/Unit	Head Count	FTE	% of Total
Library Services	4	4.00	14%
Human Resources	4	3.80	14%
Enrollment Management	3	3.00	12%
Finance & Business Auxiliaries	2	2.00	8%
Budget & Budget Development	1	1.00	4%
Financial Aid	1	1.00	4%
Wildcat Shop	1	1.00	4%
Administrative Services	1	1.00	4%
Building Repair & Maintenance	1	1.00	4%
Geography	1	1.00	4%
Geological Sciences	1	1.00	4%
Computer Science	1	1.00	4%
University Advancement	1	1.00	4%
Registrar Services	1	1.00	4%
KCWU	1	1.00	4%
Publicity Center	1	1.00	4%
Multimedia Tech & Inst Support	1	0.50	2%
Chemistry	1	0.50	2%
Total	27	25.80	100%

Distributed IT staff primarily consists of functional users, subject matter experts and other technical resources. Functional user responsibilities include supporting users of the specific PeopleSoft Module used in that department. Subject matter expert responsibilities include assisting the department in trouble shooting issues, setting up tables, testing, and training. Technical resources perform other duties as needed.

Systems and Technology

For the purposes of this analysis, information systems and technology available at the University have been categorized into the following:

Administrative Systems

In 1999, the University purchased and licensed PeopleSoft as its Enterprise Resource Planning (ERP) system. Major modules that are currently in place at the University include:

- Human Capital Management
- Financial Management System
- Campus Solutions (CS Student Administration - Safari)

The University is also using a third party workflow application, Smart ERP.

Academic Technology

The University uses Blackboard as its Learning Management System. Faculty support for academic technologies, such as Blackboard, is provided by the University's Instructional Resource Specialist, who reports to the Associate Vice President of Undergraduate Studies. Although not an ITS employee, this individual works closely with the ITS Department.

Until recently, the University had a Media and Instructional Technology Services Department that was independent of the ITS Department. This department was comprised of distance education technicians who specialized in iTV and video conferencing technologies. The MITS group was recently merged into the Customer and Computer Support divisions of the ITS Department.

Figure 3: Quick Facts and General Benchmarking

Central Washington University - Quick Facts			
	FY 2011 - 2012	FY 2010 - 2011	FY 2009 - 2010
Institutional Data			
Student Head Count	11,473	11,765	11,460
Student FTE	10,788	10,901	10,611
Undergraduate Students - FTE	9,706	9,779	9,484
Graduate Students - FTE	1,082	1,122	1,127
Faculty FTE	571	582	569
Staff FTE	597	603	659
Total Institutional FTE (faculty and staff)	1,168	1,185	1,228
Total Institutional FTE (students, faculty, staff)	11,956	12,086	11,839
Financial Figures			
University Operating Budget	\$ 93,847,500	\$ 94,560,000	\$ 92,932,000
ITS Department Expenditures and Salaries	\$ 5,608,282	\$ 6,512,223	\$ 5,194,187
ITS Department Operating Expenditures	\$ 1,662,346	\$ 1,460,275	\$ 1,420,275
*ITS Department Training Budget	\$ 17,281	\$ 17,281	\$ 11,126
IT Organization			
Total Institutional IT Staff - FTE	85.3	80	81.5
Distributed IT Staff - FTE	25.8	27.5	27
Central IT Staff (ITS) - FTE	59.5	52.5	54.5
**Total IT Support Staff (ITS) - FTE (Includes Computers & Customer Support Services)	17	17	17
***Student IT Workers (ITS) - FTE (15 students working an average 15 hr. week)	5.6	5.6	5.6
****University Laptops and Desktops	6,107	6,107	6,107

*ITS Department Training Budget - Data provided for 2010 and 2011. Per , training budget is similar for 2012 (+/- 10%).

**IT Support Staff (ITS) FTE- Data provided for 2012 only. The same figure was used for 2010 and 2011.

***Student IT Workers (ITS) FTE - Data provided for 2012 only. The same figure was used for 2010 and 2011.

****University Laptops & Desktops - Data provided for 2012 only. The same figures were used for 2010 and 2011.

**Figure 4: EDUCAUSE Benchmarking Comparison**

	Central FY 2012	EDUCAUSE Core Data Service 2011 Masters Institution I (MA I)	In FY 12, compared to other MA I Institutions, CWU is:
Total IT funding as a percentage of University budget	6.0%	5%	Spending 17% more on IT as a percentage of the University budget.
IT funding per institutional FTE (faculty and staff)	\$4,802	\$4,791	Spending about the same amount on IT per the total number of faculty and staff.
Total IT funding per institutional FTE (students, faculty, staff)	\$469	\$777 ¹	Spending \$308, or 40% less on IT per the total number of students, and staff.
Spending per central IT staff on training/conferences/seminars and travel	\$290	\$608	Spending \$318, or 52% less on training/conferences/seminars for IT staff.
Central IT staff as a percentage of total institutional IT staff	70%	92%	24% less centralized.
Central IT Staff as a percentage of total institutional FTEs (faculty and staff)	5%	6%	Has 17% less central IT staff as a percentage of the total number of faculty and staff.
Student worker FTE as a percentage of central IT FTE	9%	6%	Using 50% more student workers in the central IT.

¹ Range of spending reported by EDUCAUSE is approximately \$450 to \$1,650 per institutional FTE (respectively, 10th to 90th percentile).



	Central FY 2012	EDUCAUSE Core Data Service 2011 Masters Institution I (MA I)	In FY 12, compared to other MA I Institutions, CWU is:
Computers per central IT support staff FTE (Help Desk, Desktop Support, Training)	359	299	Supporting 60, or 20% more computers per central IT support staff.
Computers per institutional FTE (faculty and staff)	5.2	2.1	3.1, or 150% more computers per the total number of faculty and staff.

ISSUES AND RECOMMENDATIONS

Overview

The following section presents issues and recommendations that we identified during the IT assessment. Issues and recommendations are organized into the following sections:

- 1. Governance and Planning.** These issues require changes and/or improvements to existing committees and working groups. In addition, these issues address challenges with IT leadership and strategy at the University.
- 2. Management and Operations.** These issues focus on existing challenges with the management and delivery of IT services at Central. This may include opportunities to strengthen the delivery, support or project oversight of IT services.
- 3. Systems and Infrastructure.** These issues focus on addressing concerns we identified with the existing technologies and applications at the University. This includes the identification of potentially redundant software and the opportunity to strengthen existing software and hardware in support of improving the value of IT services at Central.

Each issue and recommendation is presented in the following format:

Issue Title

Short description of the issue.

Background Information

Supporting details based on documentation provided by the University and interviews conducted with business, academic, and IT stakeholders. Also includes a brief description of why the identified issue is relevant to the University.

Recommendations

Recommended next steps based on our analysis of information provided by the University in conjunction with our collective experience, research, and understanding of the University's mission. The table on the following page provides an overview of the recommendations contained in this report.

RECOMMENDATIONS OVERVIEW

Summary of Recommendations		
Governance and Planning	Governance	<i>Streamline and simplify the IT Governance model currently in place at CWU to improve decision making, prioritization, and communication.</i>
	Project Intake Process	<i>Improve project intake and prioritization by incorporating business case analysis practices.</i>
	Strategic IT Planning	<i>Develop an Information Technology Strategic Plan that includes strategic goals, priorities, and initiatives that will guide decisions about technology over the next five years.</i>
Management and Operations	PeopleSoft as the System of Record	<p><i>Perform a business process assessment and fit-gap analysis to inform the development of a workplan for improving the University's use of PeopleSoft.</i></p> <p><i>Deploy data warehousing and business intelligence tools, and train users in their usage.</i></p> <p><i>Work to change the culture to view PeopleSoft and related software as tools of workflow and collaboration, not as technical databases.</i></p>
	PeopleSoft Upgrade Process	<p><i>Refine the upgrade process by adding structure and discipline through business process analysis and evaluation of customizations.</i></p> <p><i>Based on technology plans and service level objectives, proactively plan for additional staffing needs associated with upgrades.</i></p> <p><i>Improve upgrade efficiency by keeping up with quarterly PeopleSoft bundles and utilize the PeopleSoft upgrade lab.</i></p>
	PeopleSoft Data Security Standards	<p><i>Establish new data security standards for PeopleSoft.</i></p> <p><i>To further reduce the level of customization in PeopleSoft, assess current custom-created roles and permissions to determine if the PeopleSoft-delivered roles can be</i></p>

Summary of Recommendations	
	<p><i>modified to meet the University's needs.</i></p>
Functional and Technical Staff Collaboration	<p><i>Establish the role of a Lead Functional System Analyst to improve coordination between the Enrollment Management Department, the Office of Institutional Effectiveness, and the Enterprise Applications group.</i></p> <p><i>The Lead Functional System Analysts, the Enterprise Applications Security Administrator, and the Office of Organizational Effectiveness should work collaboratively to address Enterprise System challenges and needs.</i></p> <p><i>Implement a non-production PeopleSoft development environment for functional users until a data warehouse can be established.</i></p> <p><i>Establish an IT Code of Conduct that is understood and acknowledged by technical and functional PeopleSoft users.</i></p>
IT Service Portfolio	<p><i>Establish an IT Service Portfolio to establish, communicate, and proactively manage baseline IT services.</i></p>
Training for IT Staff	<p><i>In order to effectively and efficiently support technology resources, the University should increase recurring funding for training IT staff.</i></p> <p><i>To improve the consistency and reliability of services, cross-training should be strengthened across the IT community.</i></p>
Training for IT Users	<p><i>In order to fully leverage current tools and resources, faculty and staff require introductory training on new technologies and refresher training on existing technologies. The type of training offerings and delivery options should be regularly assessed to verify that stakeholder needs are met.</i></p>

Summary of Recommendations		
	Distance and Online Learning	<i>To develop an effective strategy for the growth and development of online and distance programs, the University must establish a clear direction that is understood and supported by stakeholders. University leadership will need to facilitate a collaborative planning process that engages a representative group of academic, technical, and administrative stakeholders in the decision-making process.</i>
	IT Staffing and Organization	<i>Consider IT staffing and organizational structure changes that will improve IT service quality, efficiency, and utilization of resources.</i>
Systems and Infrastructure	PeopleSoft Self Service	<i>The University should deploy the PeopleSoft Time and Labor Module and expand its use of Self Service functionality.</i>
	Disaster Recovery and Business Continuity Planning	<p><i>The University should establish an off-campus disaster recovery site.</i></p> <p><i>The University should also plan for the installation of a secondary independent internet connection to support business continuity for critical web-based applications. This will enable the University to consider cloud computing and hosting arrangements as it plans for the future.</i></p>
	Redundant Applications	<p><i>The University should further assess the potentially redundant applications identified in this report to determine if certain functions/capabilities can be consolidated to one or fewer applications. Potentially redundant applications were identified for the following functions/capabilities:</i></p> <ul style="list-style-type: none"> • <i>Online Student Communities</i> • <i>Scheduling</i> • <i>Student Advising and Retention</i>

Summary of Recommendations	
	<ul style="list-style-type: none"> • <i>Desktop Diploma Software</i> • <i>Accreditation Management and Academic Assessment</i> • <i>Content Management</i>
Computer Classrooms/Open Labs	<p><i>The University should establish dedicated study spaces that provide students with the technology resources they need.</i></p> <p><i>The University should consider the role of computer labs to determine if traditional, dedicated computer labs will be beneficial in the future, or if student needs would be better met by flexible learning spaces and application virtualization technology.</i></p>
IT Assessment and Refresh Program	<p><i>The University should establish an IT Assessment and Refresh program that is supported by a recurring budget.</i></p>

SECTION 1: GOVERNANCE AND PLANNING

1.1 IT Governance

The University needs a more effective IT governance structure that provides for consistent input of stakeholders, linkage to academic and operating objectives and clear priority setting and decision making guidance, in a sustainable and easy to understand fashion.

Background Information

IT Governance describes the process by which University stakeholders have input into priority setting, risk assessment, policy setting, and decision making processes. IT governance must effectively encompass academic, student-related, administrative, and operational areas of the University and align with ongoing technology planning efforts. IT governance is also distinct from day-to-day information technology management.

The University's IT governance structure is described in detail in the Enterprise Information System Governance Charter, and there are currently three committees that comprise the governance structure at CWU:

- Information Technology Steering Committee (ITSC) - Responsible for prioritizing capital and operating resources and ensuring that the University's IT strategic initiatives are aligned with the University's strategic plan. The ITSC is comprised of the President's Cabinet (Provost, CFO, and Chief of Staff, as well as the AVP for IT) and ITSC meetings are held on an "as needed" basis.
- Enterprise Information Systems Governance Team (EISGT) - Defined as the primary university-wide advisory group to the ITSC. Specifically, the EISGT is charged with project portfolio management, access issue resolution, information security and privacy, data quality, and priority setting.
- University Academic Technology Advisory Committee (UATAC) - Provides key academic (faculty) input to the ITSC.

In addition, the Office of Institutional Effectiveness is also considered part of the University's enterprise information systems governance function. This office is responsible for coordination, integration and operational information across major enterprise systems. Please see Appendix A for a chart that depicts the current IT governance structure at CWU.

It was reported that EISGT was created to address major technology decisions at CWU. These decisions are then supposed to go to the ITSC for acceptance or rejection. Our assessment revealed that additional prioritization guidance and direction is needed. Clarity of structure to

guide progression of needs assessment and decision making between governance groups is not apparent.

Recommendation

Streamline and simplify the IT Governance model currently in place at CWU to improve decision making, prioritization, and communication.

An effective IT governance structure enables technology related decisions that are meaningful, responsive, consistent, and proactive to the needs and objectives of the University community. The framework of IT Governance inter-relates leadership, culture and strategic alignment in order to take a collaborative approach to decision making.

Like many functions at CWU, IT Governance is well documented. It appears that the model could be effective however; we found that current model lacks integrated planning and effective participation from all stakeholders at CWU. There is not one sufficiently encompassing group that sets forth and communicates University-wide vision and priorities for IT on a consistent basis.

Elements of an Effective Model

A successful IT Governance model that BerryDunn has observed in the past includes an upper-level and senior leadership committee of University professionals with business and operations perspective who may or may not be directly involved with IT operations on a day to day basis. This group sets direction and priorities for IT and reports to the Cabinet on a regular, planned basis rather than “as needed.” The responsibilities of this committee include:

- Cataloging technology needs and working together to identify and agree upon a limited set of top priority initiatives to present to senior leadership. (Also, see Project Intake Process Recommendation 1.2)
- Ensuring that major technology decisions are appropriately considered, planned, and communicated as a formal project plan is necessary to facilitate the successful execution of any project.
- Monitoring progress on technology initiatives.
- Guiding the development of the University-wide Strategic Technology Plan. (See Strategic Information Technology Planning Recommendation)
- Serving as a forum for communication to and from representative departments.

The group described above is then coupled with a more “hands-on” group of IT providers and key users (practitioners) that works to set technical standards and ensure that

business/academic decisions are made in a way that is cognizant of IT architecture, infrastructure, and technical considerations. This group would inform purchasing decisions, for example, and also work to ensure that decisions align with the University's technical architecture. Responsibilities of this group include:

- Monitoring overall awareness of University-wide technology standards, priorities, and policies.
- Helps to create a standard "requirements definition" template that can help improve the collection and dissemination of potential technology projects so that the IT governance groups can compare "apples to apples" when determining priorities.
- Works with ITS to create an IT Service Catalog of all services provided on campus (both within ITS and from "distributed" IT).
- Serving as a forum for communication to and from representative departments.

The model described above requires leadership both from IT as well as academic and administrative operating departments and consistent and active engagement from the University's Cabinet.

Central has an Enterprise Information System Governance Charter that describes the current governance structure and provides detailed information about the charge and composition of the EISGT. The University should consider consolidating and reorganizing the EISGT and UATAC in light of the elements of effective IT governance described above. A timeline and consistent structure of responsibilities should be established for maintaining the IT governance function.

Strengthening the IT governance structure at CWU will be an important prerequisite for implementing the recommendations contained in this report.

1.2 Project Intake Process

There is no formal and consistent method for evaluating projects and determining the strategic value of each proposed effort.

Background Information

The University’s project management department is part of ITS. Requests for project work are usually made to the AVP of IT, who relays the request to the Director of Project Management. All projects are initially researched by the Director, and added to the IT Major Projects Roadmap with project specifications such as: contact, description, benefits, risks, constraints, cost estimate, timing and funding information. The project management division of ITS does not have a set process for defining what projects make it to the IT Major Projects Roadmap; rather all projects are generally added to the Roadmap.

The preliminary research of the project specifications is often based on assumptions or estimates as not all of the information is available to ITS. The Director of Project Management is also responsible for setting the prioritization for the project. Projects are prioritized with a rating of “Mandatory” or P1 through P4, with a P1 priority being of the highest importance after mandatory projects. As of February, 2012, of the 88 projects on the Roadmap, 41 projects, or 47%, were either prioritized as mandatory or P1.

The following table provides a summary of projects by priority rating:

Figure 5: IT Projects by ITS Priority Rating

IT Project Roadmap Analysis		
Priority Rating	Count	% of Total
Mandatory	11	13%
P1	30	34%
P2	30	34%
P3	11	13%
P4	0	0%
No Priority	6	6%
Total	88	100%

Recommendation

Improve project intake and prioritization by incorporating business case analysis practices.

The process for technology project intake needs to be evaluated and redefined to consistently establish a business case for the project, coordinate technology spending, and align with the long term strategic vision of the University. Establishing a business case for the project will define the justification for undertaking the project, based on financial factors such as costs of undertaking the project weighed against the anticipated benefits to be gained. This should drive the decision making process for undertaking new projects, and be used to continuously evaluate projects to determine that they are aligned with the University's business objectives.

Additionally, IT strategic planning and IT governance will help to define University technology objectives and inform the project intake process. Developing and communicating these project management standards will create a consistent, transparent process for evaluating, assessing and determining technology project priorities.

The business case analysis process should be applied to requests for new/modified/retired IT services. See IT Service Portfolio Recommendation 2.5.

1.3 Strategic Information Technology Planning

The University needs to create and sustain an IT strategic plan that encompasses all of the assets and resources of CWU.

Background Information

The University's last strategic technology plan was developed in 2008. Currently, decisions about the University's IT services and resources appear to be driven by customer demand and resource availability that is not sustainable. It is not clear that decisions have consistently been made with a University-wide technology vision and plan in mind.

The IT department has had difficulty proactively planning for the evolving needs of the University, and the University's expectations for IT are unclear. The University needs a strategic plan to provide a baseline for decision-making.

Recommendation

Develop an Information Technology Strategic Plan that includes strategic goals, priorities, and initiatives that will guide decisions about technology over the next five years.

The University should develop a strategic information technology plan that provides direction for the role of technology over the next five years. The plan should be a 'living document' that is updated as progress is made and needs evolve. The plan should be the product of a collaborative strategic planning process that engages executive leadership and academic, administrative, and technical stakeholders in proactive decision making about the role of technology at the University.

The strategic IT plan should inform the ITS Department as it plans for projects, staffing, and services (See Project Intake Process Recommendation). Technology planning should be conducted with the purpose of optimizing technologies and services that support business objectives (such as improved service or productivity) and guide the IT decision making and priority setting process University-wide. This process should be incorporated into a formal governance structure (See IT Governance Recommendation).

SECTION 2: MANAGEMENT AND OPERATIONS

2.1 PeopleSoft as the System of Record

Many users believe they cannot access the information that they need from the University's PeopleSoft system in a timely and reliable fashion. Contributing to this issue is data ownership frustrations and the extent and availability of IT staff resources to respond to user needs.

Background Information

The University implemented PeopleSoft in 1999. At the time of implementation, it appears the software was implemented without the necessary business process analysis and re-engineering required that would create a more effective and efficient use of the technology. While it appears that some business process analysis was done in 1999, it is evident that older, more cumbersome processes were utilized in the design of the PeopleSoft configuration. The security configuration in particular follows a "siloes" model, with each department placing strict access restrictions on its data with no subsequent efforts made to re-analyze the process or rebuild the security configurations.

The result of such an implementation is that data for end-user reporting is either unavailable due to security considerations or due to improper configuration of PeopleSoft Query Security. In general, both the Query tool and XML Publisher are underutilized and unavailable to many "super users." There is no data warehouse and there are no business intelligence tools to extract and manipulate the data.

Recommendation

Perform a business process assessment and fit-gap analysis to inform the development of a workplan for improving the University's use of PeopleSoft.

Deploy data warehousing and business intelligence tools, and train users in their usage.

Work to change the culture to view PeopleSoft and related software as tools of workflow and collaboration, not as technical databases.

The University should perform a business process analysis to redesign the processes to more closely match system processes. As organizations are often built around independent silos of work teams, it can be a challenge to model such disparate processes into a system designed to be a functionally integrated solution; often, however, it is ultimately more effective to redesign business processes to more closely resemble the flow of data in the ERP systems.

The business process analysis should include information needs and work flow. The addition of a business process analyst role will facilitate this process. For more detail on this role, see the Functional and Technical Staff Collaboration Recommendation. The output of this work should

be two sets of documents: a list of “as is” business processes, and a list of “to-be” new processes. Performing such a gap analysis will allow the University to better manage change, to develop effective security configurations and to implement those requirements in the process to address gaps.

To facilitate data access to users, the University should deploy data warehousing and business intelligence tools, and train “super users” in their usage. The University will need to clearly define the delineation of data ownership to ensure the proper balance between data security and data access to support user needs. In addition to the aforementioned use of a data warehouse and business intelligence tools, data access to users can be facilitated by creating different views of PeopleSoft tables, or by re-examining and rebuilding the configuration of some of the primary or foundation tables in the PeopleSoft database. These tools can provide real solutions to “super user” needs if properly managed.

Enabling broader access to data where appropriate will promote a positive culture change as users begin to view PeopleSoft and related software as tools of workflow and collaboration, not just as technical databases.

2.2 PeopleSoft Upgrade Processes

Due to the need to focus a large number of IT resources on PeopleSoft upgrades over the years, and to accommodate various customizations for each upgrade, other software processes and systems do not receive the level of attention that would provide optimal response to users in the CWU community.

Background Information

The University is currently undergoing an upgrade of PeopleSoft to v9.0 for HRSA. The most current release is v9.1 and there were a number of concerns raised regarding the decision not to upgrade directly to the current release of PeopleSoft, as this meant that the University would need to undertake an additional upgrade process to be on the current release. Upgrading to the current release would have required splitting the Campus Solutions products and HR products into separate database instances, adding substantial complexity to the upgrade.

From discussions with the Cedar Crestone, the consultants being used for the v9.0 upgrade, it appears that the upgrade process has been lengthy (15 months) and taken longer than anticipated partly due to University IT resource limitations and partly due to the customizations needed. The SmartERP Personnel Action Form was a major obstacle in this upgrade.

While performing upgrades without business process analysis is not atypical, a better approach when planning an upgrade is to look more closely at the rationale behind specific customizations. The University did this to some extent, retiring 80 customizations in Campus Solutions.

Recommendation

Refine the upgrade process by adding structure and discipline through business process analysis and evaluation of customizations.

Based on technology plans and service level objectives, proactively plan for additional staffing needs associated with upgrades.

Improve upgrade efficiency by keeping up with quarterly PeopleSoft bundles and utilize the PeopleSoft upgrade lab.

The upgrade process should be strengthened and improved by adding structure and discipline through business process analysis and evaluation of customizations. Business process analysis with a gap assessment is important when performing such large upgrades or changes to software systems. See PeopleSoft as the System of Record Recommendation for further detail on business process analysis.

Additionally, ITS department resources should be properly allocated to ensure that the University's needs are being addressed during intensive projects, such as the PeopleSoft upgrade. Not properly responding to user needs in a timely manner can lead to frustrations, and force users to find their own solutions and create their own unique databases independent of IT, thus further exacerbating the problem. The process of developing an IT Services Portfolio and strengthening service level agreements will improve the ITS department's ability to proactively plan for staffing resources to the needs of users (See IT Services Portfolio Recommendation).

Important in this process, is the proper prioritization of tasks, which is further described in the Project Intake Process Recommendation. IT Governance needs to provide the proper guidance for the ITS department, especially when resources are so limited (See IT Governance Recommendation). The role of business process analysts who understand both the PeopleSoft system and the business processes will be important in the process of prioritization. See the IT Functional and Technical Staff Collaboration Recommendation for further discussion of this recommendation as it relates to the process analyst role.

To facilitate more efficient upgrades, it is also important to keep up with the rollout of quarterly PeopleSoft bundles. Utilizing the PeopleSoft upgrade lab can also reduce the amount of effort required with technical upgrade issues and free up valuable University resources for other tasks.

2.3 PeopleSoft Data Security Standards

CWU has not developed a set of University-wide security standards that govern the use and management of its enterprise systems and institutional data.

Background Information

The current design for PeopleSoft data security at CWU is based on models developed in 1999. At that time, the University opted to develop custom roles and permissions for individual groups of users instead of modifying out-of-the-box delivered security roles and permission. Staffing is inadequate to support such extensive specialization, and the level of variation in security roles and permissions among departments perpetuates the “silos of influence” model.

Recommendation

Establish data security standards for PeopleSoft.

To further reduce the level of customization in PeopleSoft, evaluate current custom-created roles and permissions to determine if the PeopleSoft-delivered roles can be modified to meet the University’s needs.

The University needs to develop enterprise system security standards that appropriately balance business and security needs. The process of developing these standards should be a collaborative effort that involves data custodians, functional leads, and technical personnel (See Functional and Technical Staff Collaboration Recommendation). As part of this process, the group should review current security roles that have been developed in PeopleSoft to determine whether or not these roles can be standardized using PeopleSoft delivered functionality. This will help minimize future ambiguity about what comprises appropriate access.

2.4 Functional and Technical Staff Collaboration for PeopleSoft

The University needs to improve the level of coordination in its approach to managing the technical and functional aspects of the PeopleSoft suite of modules and establish an expectation that various groups will respect the data dependencies that an enterprise system requires.

Background Information

Every department across the University relies on enterprise data for reporting needs. When the PeopleSoft system was implemented, a representative from each of the major functional areas was assigned as the data custodian for their department. These departments include Human Resources, Finance, and Enrollment Management. The data custodian role is typically filled by the Vice President of each department.

The Enterprise Applications group consists of the technical IT staff that support the University's enterprise systems, with the primary system being PeopleSoft. Technical leads within the Enterprise Application group are assigned to specific PeopleSoft modules. The technical leads are responsible for working with functional personnel and assisting with analysis, development, testing, troubleshooting, and production support for their assigned module.

Functional personnel are the department-embedded subject matter experts who are responsible for business process documentation, population of set-up tables, fit/gap analysis, testing, and training.

Human Resources and Financial Services each have a Lead Functional System Analyst who serves the needs of the functional users and data custodians by working directly with the appropriate technical lead within the Enterprise Applications group. An equivalent role does not currently exist for the Student Administration module. Historically, this role was filled by the Director of Enrollment Management Information and Planning. Due to attrition and budget cuts, this role was eliminated in 2008. Without this Lead Functional System Analyst role, it has been difficult for functional users and technical personnel to collaborate effectively.

PeopleSoft access requests are frequently initiated by functional leads and approved by the applicable data custodian(s). Once the appropriate approval(s) are collected, the request is emailed to the Enterprise Applications group. This process is typically straightforward for Human Resources and Financial Services, as each department has one designated Lead Functional System Analyst and one data custodian. However, requests for the Student Administration module data involve multiple data custodians, and there is no single functional role responsible for facilitating this process. In the event of disputes, there is no clear authority for resolution, and the ITS Department is left without a clear charge.

Many departments reported frustrations related to limitations on their capability to extract and report on data in the PeopleSoft system. In some cases, functional users have developed cumbersome workarounds or separate databases to meet the reporting needs of their departments. There is a strong desire among functional users for access to the PeopleSoft development environment tools (PeopleTools), which would allow them to better understand ‘what’s possible’ in the system.

Other times, functional users make requests for customizations that may be better served by an alternative approach, or a change in business process. However, without the role of a technically and functionally adept coordinator (Lead Functional System Analyst role) to analyze and vet requests, the Enterprise Applications department is often left with an unclear sense of what is truly the best decision for the University.

Unresolved issues related to access to PeopleSoft are escalated to the EISGT for remediation; however, it was reported that this process has not effectively resolved access and reporting challenges.

Recommendation

Establish the role of a Lead Functional System Analyst to improve coordination between the Enrollment Management Department, the Office of Institutional Effectiveness, and the Enterprise Applications group.

The Lead Functional System Analysts, the Enterprise Applications Security Administrator, and the Office of Organizational Effectiveness should work collaboratively to address Enterprise System challenges and needs.

Implement a non-production PeopleSoft development environment for functional users until a data warehouse can be established.

Establish an IT Code of Conduct that is understood and acknowledged by technical and functional PeopleSoft users.

The University needs to improve coordination and collaboration between functional and technical IT staff, particularly with regard to the relationship between Enrollment Management and the Enterprise Applications group.

The University should reinstate the Lead Functional System Analyst role for the Student Administration module. Due to the complexity and size of the Enrollment Management department and the Student Administration module, this position will require a fairly high level of authority, business process knowledge, and technical expertise in order to be effective. Accordingly, the University should consider making this a Director level position, similar to the prior position of Director of Enrollment Management Information and Planning.

The reestablished SA Lead Analyst (Enrollment Management), the HRSA Lead Analyst (Human Resources), the FMS Lead Analyst (Financial Services), the Enterprise Applications Security Administrator, and the Office of Institutional Effectiveness should work collaboratively to establish security standards and to review current roles and permission. This group should meet regularly to discuss current challenges and opportunities related to PeopleSoft, business processes, and information management.

The implementation of a data warehouse will help the University improve many of the current issues related to data reporting and access. However, the data warehouse will require careful planning and review of the current system configuration. Until the data warehouse is implemented, the University should consider establishing a development environment that is specifically designed for the use of the functional personnel. The development environment should be stripped of all sensitive information, including social security numbers, but should otherwise provide all data available in the Production PeopleSoft database.

In order to address trust issues regarding access to department owned data, the University should implement an IT Code of Conduct. The IT Code of Conduct should be reviewed and signed by all technical and functional IT staff. An example of an IT Code of Conduct is included as Appendix D.

2.5 IT Service Portfolio

The ITS Department has not established a set of baseline technology services that can serve to focus and clearly communicate available ITS service offerings at Central.

Background Information

The culture of the ITS Department is to say ‘yes’ to most requests. However, staffing cuts and increased technology demands have left the ITS Department overextended. Not only does the ITS project roadmap currently list over 80 projects, but the ITS Department is currently supporting a handful of specialized technology services for individual departments. The ITS Department has not established clear practices around defining service level agreements and managing resource allocation for projects and specialized service requests.

Recommendation

Establish an IT Service Portfolio to establish, communicate, and proactively manage baseline IT services.

The University should establish an IT service portfolio that includes planned services, current services, and retired services. Current services should be published in an IT service catalog. The IT service catalog should enable users to easily determine the appropriate course of action to successfully initiate a service or gain access to a resource. While the IT service and resource catalog will continue to be managed by ITS, the catalog should list information for all IT services and resources offered by or through CWU. The service catalog may even point users to other third party resources, such as free online training, that have been vetted by CWU.

The University should consider establishing both a technical service catalog, which is viewable by the ITS department, and a business service catalog, which is visible to the public. The service catalog should identify the following components for each service:

- Service description
- Service provider/owner
- Who the service is available to
- When the service is available
- Service cost, if applicable
- Process for requesting service
- Service level objectives

The process of developing the service catalog will facilitate decisions about what distinguishes baseline IT services from those services that have an associated chargeback model or service level agreement. Those services associated with Service Level Agreements should hold IT to

specific timetables for deliverables. By establishing baseline enterprise IT services, the ITS department can proactively allocate existing resources and will have mechanisms for securing additional resources when necessary.

When establishing baseline IT services, it will be important for the University to consider how fee structures will impact user decisions and behaviors. For instance, many Universities decide to include desktop support as a baseline IT service in order to discourage departments from opting out of central IT services to save money. Charging for these types of 'core' services often leads to the development of duplicative services and distributed IT 'silos'.

By establishing a service portfolio and a service catalog, the University can better manage and plan for customer demand, develop clear service fulfillment workflows, maintain compliance with service level agreements, and identify opportunities for service delivery efficiencies.

2.6 Training for IT Staff

Budget cuts over the past few years dramatically reduced IT staff training and this has likely had a negative impact on the ability of ITS to provide sufficient support and services.

Background Information

In 2011, the ITS department’s training and professional development budget was \$17,281. In 2008, the training budget was \$125,662. This equates to an 83% decrease in funding per ITS staff FTE since 2008. According to the 2011 Educause Core Data Service Report for Master’s Institutions, average spending per IT staff on training/conferences/seminars and travel is \$777. In 2011, the ITS Department’s training and professional development budget equated to \$329 per FTE, or less than half of average spending levels reported in the EDUCAUSE survey.

Figure 6: ITS Training and Professional Development Expenditures per FTE

	Training and Prof. Dev. Budget	ITS Staff (FTE)	Expenditures per FTE	Change from Previous Year
2011	\$17,281	52.5	\$329	+61%
2010	\$11,126	54.5	\$204	-64%
2009	\$31,276	55	\$569	-71%
2008	\$125,662	64	\$1,963	NA (Base)

In 2009, Washington State implemented stringent limits on out-of-state travel and multi-day training events. Key training activities, such as the Oracle and PeopleSoft training seminars and user conferences were no longer an option for IT staff.

During this time, state funding levels were cut, and the entire University suffered significant budget cuts. Although the ITS Department recognized the importance of training, training was one of the few areas that the Department was able to cut without directly impacting IT service and resource availability. However, since that time, the lack of training has begun to catch up with the ITS Department, as ITS staff have been unable to keep pace with the progression of the technologies that they are expected to maintain and support.

Recommendation

In order to effectively and efficiently support technology resources, the University should increase recurring funding for training IT staff.

To improve the consistency and reliability of services, cross-training should be strengthened across the IT community.

In order to effectively and efficiently support technology resources, the University should increase recurring funding for training IT staff.

Complex systems such as the University's PeopleSoft ERP are constantly evolving as upgrades are introduced and users demand additional functionality and integration. In order to provide the level of maintenance, programming, security, consultation, troubleshooting, and user training necessary to support such a robust system, recurring training is essential.

While the ITS Department has cross-trained staff in certain key areas, it was reported that additional areas need to be addressed. IT staff should continue to engage in regular cross-training with their peers. Cross-training can be effective to improve the capacity, versatility, and sustainability of the ITS Department. Cross-training among ITS staff with varying skill sets should be encouraged as part of staff development. The ITS Department should consider developing a cross-training matrix to ensure that critical functions can be carried out by more than one individual.

Training should not be limited to the ITS Department. Distributed IT staff also requires training that is appropriate to their function. As the University makes improvements to the configuration of PeopleSoft and establishes a data warehouse, functional IT staff will require training in business intelligence tools, as well as internal training on the University's agreed upon set of data standards and definitions. Here, training will play a critical role in ensuring that ITS and distributed IT roles are complimentary and not redundant. The Upgrade to 9.1 will be a good opportunity to provide both new and baseline level training to both the people who use and those who support PeopleSoft at CWU.

2.7 Training for IT Users

The University does not provide sufficient IT training opportunities for students, faculty, and staff.

Background Information

The University has established numerous IT related training resources with the intention of provisioning end users with accessible and relevant knowledge and skills to use technology effectively. However, during the IT assessment, faculty and staff expressed a desire for expanded technology training resources. The type of training desired ranges from basic skills with Microsoft Office products to advanced training with academic and administrative systems, such as PeopleSoft and Blackboard. Without sufficient formal training, users rely on less efficient and effective methods, including self-training, the support of power users, and the help desk.

Recommendation

In order to fully leverage current tools and resources, faculty and staff require introductory training on new technologies and refresher training on existing technologies. The type of training offerings and delivery options should be regularly assessed to verify that stakeholder needs are met.

University leaders should promote technology training by encouraging users to learn how to better use the University's technology resources. Technology training is a critical component of the University's ability to keep daily operation and business processes efficient. In order to fully leverage current tools and resources, faculty and staff require introductory training on new technologies and refresher training on existing technologies. In addition to face-to-face training, the University should maintain a set of self-paced, on-demand training resources, such as online tutorials.

In order to ensure that users are aware of training opportunities, the University should publish all available IT training services and resources, including those offered outside of the ITS department, in an IT Service Catalog. (See IT Service Portfolio Recommendation)

2.8 Distance Education Technology

The University has not developed a cohesive strategy for the role of technology in supporting its distance and online learning programs.

Background Information

The Multi-Modal Taskforce is a cross-sectional group of University stakeholders that was created to examine and provide recommendations to increase the way students can complete Distance Education (DE) courses and programs (i.e., interactive television, online, hybrid). As part of its assessment, the Taskforce held numerous public presentations intended to facilitate the exchange of knowledge and perspectives about distance education, including public forums at each of the University's Distance Learning Centers. The Taskforce report includes the following four recommendations that are intended to enhance the organization, planning, implementation, and assessment of DE at CWU:

- Consideration should be strongly given to transitioning DE courses from ITV to online and using Bb Collaborate.
- A budget framework and yearly plan should be developed to ensure an appropriate mix of funding streams (state, fee, and self-support) to support the development, growth, delivery, and assessment of online courses, minors, certificate, and degree programs.
- A transparent governance structure should be established.
- An institutional assessment plan related to online learning should be developed.

During our assessment we heard conflicting perspectives about the future of iTV as a platform for distance education course delivery. While the Multi-Modal Taskforce report asserts that Blackboard Collaborate would be a comparable substitute for iTV, many of the University's current iTV users disagree. One of the primary concerns about Blackboard Collaborate is the loss of students who live in areas with insufficient broadband access, or who do not have access to a computer at home. Blackboard Collaborate also puts more responsibility on the faculty member to learn the technology, whereas iTV allows faculty members to purely focus on teaching while a technician facilitates the technological aspect of the course.

Recommendation

To develop an effective strategy for the growth and development of online and distance programs, the University must establish a clear direction that is understood and supported by stakeholders. University leadership will need to facilitate collaborative planning process that engages a representative group of academic, technical, and administrative stakeholders in the decision-making process.

The University should develop a plan for the support and development of online and blended learning initiatives. The development of this plan should involve a collaborative approach, with representation from the Colleges, the Distance Learning Centers, the ITS Department, and the Provost. As part of this plan, the University should establish standards for the types of technology that will be used for delivering online learning and distance education, including the platform (Collaborate, iTV, or other web based conferencing and collaboration software such as Adobe Connect Pro, Saba Classroom, or even some combination of the growing number of collaboration tools offered by Google+) and assessment of software (See Redundant Applications Recommendation). Online and distance learning include an array of variables that extend beyond the traditional campus. In order for the University to develop an effective strategy for the growth and development of its online and distance programs, it must establish a clear direction that is understood and supported by stakeholders. For this to occur, collaboration of people and standardization of resources will be critical.

It is apparent that a great deal of energy and effort has been exerted in analysis and consideration for distance learning course delivery platforms. However, these efforts have not been sufficiently collaborative, and as a result, little action has been achieved. In order for the University to move ahead with these types of decisions, it will be imperative to have the right people at the table from the start of the discussion.

2.9 IT Staffing and Organization

The University needs to strengthen the alignment of existing and future IT services with its organization of IT staffing resources in relation to institutional needs and priorities.

Background Information:

In order to maintain a level of service availability and quality that adapts to the evolving needs of the University, the organizational structure and staffing of IT roles should be regularly assessed in light of operational objectives and service needs.

Based on our assessment, we have identified opportunities to better position the University today and in the future by improving the organization and alignment of IT staffing resources. Many of these opportunities are related to other recommendations described in this assessment.

Recommendation:

Consider IT staffing and organizational structure changes that will improve IT service quality, efficiency, and utilization of resources.

To be continually adaptive, the University should establish a mechanism to review IT staffing, organization, and structure in light of operation and service needs. Changes can occur through organizational redesign or through attrition. Changes to individual positions may be considered in light of the following factors:

- **Replace.** The IT position should remain as is. Should an existing position be open, new staff should be hired.
- **Redefine/Reassign.** The IT position is no longer needed in its current capacity, but the resource is needed to meet other new or growing IT needs. Determine new reporting structure (if necessary) and revise description as necessary.
- **Add.** Need for a new IT position is created to meet operational and service needs and to achieve specific academic or business objectives of the University.
- **Remove.** The IT position is no longer relevant to the current IT organization or the IT service is no longer provided. Do not fill this position and remove from the organization chart.

During our assessment, we identified changes that the University should consider. Each change is categorized as short term (to be considered in the next six months), medium term (to be considered in the next 18 months), or long term (to be considered over the next three years). These changes are identified in the following table.

Figure 7: IT Staffing and Organizational Change Considerations

Timing	Proposed Change	Rational
Short Term	Reestablish the role of the Director of Enrollment Management Information and Planning.	Reestablishing this position will be a critical step in improving the University's experience with PeopleSoft, and may help improve the trust issues that we observed between functional and technical staff. Please see Functional and Technical Staff Collaboration Recommendation for further detail.
Medium Term	Merge ITS Telecommunications services into the ITS Networking and Operations group.	It was reported that a significant percentage of employees within the telecommunications group will be retiring over the next 2-3 years, as well as some within the networking group. In addition, Voice over Internet Protocol (VoIP) requires more network operations and design expertise than traditional telecommunications systems. By merging telecommunications and networking, the University can more effectively manage its voice and data system resources.
Medium Term	Establish dotted line reporting between ITS Department and academic/instructional technology staffing resources.	It was reported that the University Instructional Technologist provides effective training and works well with the ITS Department. Recognizing this relationship with a more formal connection will foster ongoing coordination and collaboration as the University continues to grow and develop its online and distance learning programs.
Medium Term	Establish the role of a University Center Technology Coordinator.	This role would be responsible for maintaining an improved level of communications, service quality and consistency amongst the University Centers.
Long Term	Establish the role of an Information Security Officer.	This role would provide coordination and oversight of information security policies and procedures across campus. This individual would be responsible for monitoring the University's compliance with regulatory requirements, as well as ensuring that the University's information technology standards and practices are aligned with the University's policies and procedures.
Long Term	Increase instructional technology staffing resources.	As the University continues to expand online and distance learning programs, additional staffing resources will be necessary to support elements of

Timing	Proposed Change	Rational
		instructional technology; including technical support, training, and instructional design.
Long Term	Merge Computer Support and Customer Support Services.	The University should consider merging the two groups to improve service quality and efficiency. This will improve cross-training, better leverage resources, and improve customer service.
Long Term	Improve coordination between the ITS department and distributed IT.	The relationship between ITS and distributed IT should be strengthened to improve coordination in service delivery and consistency in training and development. To improve coordination and collaboration, some distributed roles may benefit from dotted-line reporting relationships with the ITS Department.

Please refer to Appendix C that provides a high level overview of the changes recommended here compared to the current organization of IT resources at Central.

2.10 Deployment of PeopleSoft Time & Labor Module, Portal, and Self-Service Capabilities

The use of PeopleSoft Self-Service capabilities has been very limited, creating additional work for administrative staff. This issue may be heightened in the future as CWU will be required to adopt a more robust timekeeping system due to state mandates.

Background Information

There has been limited usage of the delivered PeopleSoft employee self-service applications, and most have not been deployed. What has been deployed has some customization associated with it. As an example, the University owns the PeopleSoft Time and Labor module, but has not implemented it. CWU is using a manual time reporting and attendance reporting system, which will likely be inadequate in meeting the anticipated state-mandated time-keeping requirements. Currently, a significant number of resources are devoted to performing routine HR and Payroll tasks that employees could be performing on their own.

Listed below, are examples of Employee Self-Service and Manager Self-Service functions that could be utilized:

Figure 8: Self-Service Functions

Self-Service Functions	
Employee	Maintenance of address, email, phone number, emergency contact, marital status information; completion of I-9 and W-4 forms; viewing of paycheck; benefit plan elections; requests for W-2 reissue; updating payroll voluntary deductions; changing direct deposit information; participating in performance reviews and maintaining Key Performance Indicator (KPI) documents; providing information on current competencies, skills and training.
Manager	Providing KPIs and conducting performance reviews; tracking skills, competencies and accomplishments of employees; creating and defining employee career plans.
Faculty	Maintaining information on administrative posts, activities, publications, committees, professional training, student advising, and teaching responsibilities.

The delivered security with both the Employee Self Service and Manager Self Service roles in Time and Labor provides a strong layer of protection to keep users away from data that they should not be seeing.

Recommendation

The University should deploy the PeopleSoft Time and Labor Module, establish a Portal presence, and expand its use of Self-Service functionality.

CWU should budget for the implementation of PeopleSoft Time and Labor and implement it. Deploying Time and Labor would provide a single-location time-keeping repository that is useful for audit purposes (as well as an audit trail of everyone who has touched an employee time record). It can also provide a standard set of rules for interpreting employee time entry, assuring that all employees are treated equally in terms of official policies and procedures governing overtime, shift differentials, hours worked per day, etc. and will meet state compliance guidelines.

The Time and Labor module also provides easy-to-access timesheet approval capabilities for the approvers via Manager Self Service, and in version 9.1, provides pre-configured workflow that can be configured to address specific departmental needs. Training for Time and Labor should be developed and planned concurrently with the roll-out of the module.

Implementing Self-Service should be a long-term strategy of the University. In order to move forward with this CWU will need to establish a Portal presence that drives faculty, students and staff to use Self-Service, in other words, “one-stop shopping.” Subsequently, the employee Self-Service modules which are easier to implement and are popular with employees should be deployed in the near-term. A plan can then be developed and implemented to deploy additional self-service modules thereafter.

Training should be designed to explain to employees how to use these self-service features in PeopleSoft. Any delivered PeopleSoft HELP functionality (PeopleBooks) attached to the self-service modules should be turned on.

An additional option, deploying PeopleSoft Absence Management, could provide robust maintenance of all types of leaves and employee time-off programs. As other absence reporting capabilities exist in PeopleSoft, CWU should examine their absence reporting requirements and determine if the existing functionality is adequate for their needs before deploying PeopleSoft Absence Management, which, like Time and Labor, requires a substantial commitment of effort. It should be noted that the absence reporting features available in Absence Management have now been integrated into the Employee Self-Service Timesheet inside the Time and Labor module, so that if Absence Management were utilized, all reporting could take place on one page.

SECTION 3: SYSTEMS AND INFRASTRUCTURE

3.1 Disaster Recovery and Business Continuity

The University's current Disaster Recovery and Business Continuity Plan is not implementable.

Background Information

The University has developed a Disaster Recovery and Business Continuity Plan that provides detailed guidance on how to respond to a disaster that impacts the availability of IT services. The plan covers the following four phases on an IT-related disaster at the University:

- Incident Response
- Assessment and Disaster Declaration
- Incident Planning and Recovery
- Post incident Review

According to the current DRP, critical University operations include the following systems and services:

- PeopleSoft Systems (Payroll, AP/AR, Financial Aid, Finance, Safari)
- Central Computer Facility (Wildcat Shop)
- Electronic Mail and Web Services
- Desktop Equipment, Labs, Classrooms
- Data Networks and Telecommunications (networks, file services, telephony)
- Auxiliary Computing (Conference Center, Facilities, Parking, University Store, CBORD Dining Services, Housing, Health, ResNet, Student Recreation)

While the plan is thorough, the effectiveness of the plan is limited due to the lack of a disaster recovery site. This is of particular concern, as the current Data Center is housed in a building that has been deemed one of the 'three most vulnerable' on campus in the event of an Earthquake. The University does have a secured backup data storage unit housed in a separate building on campus. However, this unit is intended for storage and cloning of tapes, and does not meet the physical or environmental requirements of a disaster recovery site. The lack of a secondary redundant loop internet connection poses yet another risk to the availability of certain critical University operations.

Recommendation

The University should establish an off-campus disaster recovery site.

The University should also plan for the installation of a secondary independent internet connection to support business continuity for critical web-based applications. This will enable the University to consider cloud computing and hosting arrangements as it plans for the future.

The University should establish a disaster recovery site from which to recover operations in the event of an IT related disaster. Ideally, a hot site would be configured to receive continual, synchronous data feed from the primary Data Center. In the event of a failure at the primary Data Center, the hot site would take over operations immediately, with little-to-no loss in data or services.

A 'warm site' does not have a synchronous data feed, but is equipped with all of the equipment necessary to assume the operations of the primary Data Center. A warm site typically relies on the use of backup tapes to restore critical systems. Because backup tapes are typically created on a daily or weekly basis, changes that occur after the most recent tape backup will be lost.

If a hot or warm site is not feasible in the near future, the University should identify a 'cold site' as an alternative Data Center. While a cold site is not equipped with servers, systems, and networking equipment, the cold site would provide sufficient power and networking infrastructure to support the execution of the DRBCP.

The University should also prioritize the need for a secondary redundant loop Internet connection. The lack of this secondary connection is not only a business continuity concern for the current environment, but is a major limitation in the University's ability to consider the 'cloud' as an alternative service delivery platform.

3.2 Redundant Applications

The University should evaluate opportunities to streamline services and reduce costs by eliminating redundant applications.

Background Information

It was reported that technology purchases are not consistently coordinated to determine if existing resources can fill the desired capability. Due to staffing constraints and upgrade projects, the ITS Department is not always able to respond to user needs in an expeditious manner. Consequently, departments will sometimes plan technology projects without consulting the ITS Department. This has led to concerns about potential redundancy in applications implemented across campus. Not only do redundant applications present budgetary inefficiencies, but there are indirect risks associated with these scenarios. As the application requires upgrades and the overall IT environment evolves, additional resources are required and the application may become unsustainable.

Recommendation

The University should further assess the potentially redundant applications identified in this report to determine if certain functions/capabilities can be consolidated to one or fewer applications.

Applications that are implemented without the assistance of the ITS Department are typically supported by a member of distributed IT, or by functional users. The expertise of central IT should be leveraged whenever possible, and applications not supported by IT should be assessed to determine if they should be supported by ITS, if the current arrangement is appropriate, or if an alternative application can meet the need. As part of this assessment, we were asked to identify redundant applications. While we did not find this to be an extensive problem, the following areas should be reviewed to determine if the delivered capability could be met by one rather than many applications.

Figure 9: Potentially Redundant Applications

Accreditation Management and Academic Assessment: 3		Scheduling: 3	
Department Owner	Application Name	Department	Application Name
College of Business	Sedona	University-wide	Resource 25
College of Education and Professional Studies	Live Text	Facilities	AIM
College of the Sciences	Data 180	Public Affairs	Drupal

(Under Consideration)			
Student Advising and Retention: 2		Desktop Diploma Software: 2	
Department Owner	Application Name	Department	Application Name
Registrar	Early Alert and CPORT	University-wide ²	XML Publisher
Enrollment and Admissions	Hobson CRM Retain	Registrar	Diploma on Demand
Online Student Communities: 2		Content Management: 2	
Department Owner	Department	Department	Application Name
Undergraduate Studies	Undergraduate Studies	Public Affairs	Drupal (First Instance)
University-wide	Blackboard Connect	Library	Drupal (Second Instance)

Some of these applications provide multiple capabilities, with some duplication. For these applications, the University should establish campus standards for the system of record for that particular function. This decision should be reflected by the IT Service Catalog. (See IT Service Portfolio Recommendation)

The University should develop a standard questionnaire for owners of potentially redundant applications to complete. Completed questionnaires should be reviewed by the EISGT, and application owners should be invited to participate in this review. The objective of these reviews should be to improve awareness for existing functionality, and to consolidate applications only if they are truly redundant.

As the University moves forward in assessing potentially redundant applications, such as those outlined above, the following criteria should be considered:

- What is the purpose of the technology?
- What are the direct costs associated with using this technology?
- How is this technology currently supported?
- Is this support model sustainable?
- Are there privacy or security concerns associated with the use of this technology? If so, how are these concerns being addressed?
- If alternative technology already existed, why was this technology acquired?
 - Lack of functionality of existing technology?

² Functionality is available, but is not currently utilized by the University.



- Lack of awareness for existence of technology?
- Cost constraints associated with use of existing technology?
- Lack of support or dissatisfaction with quality of support?
- Desire to experiment/try new technologies?
- Other?

The concern about duplicative applications is indicative of a need for stronger coordination, collaboration, and support across the entire IT community. This can be addressed by improving the IT governance function and engaging the entire University in the IT strategic planning process (See IT Governance and Strategic IT Planning Recommendations).

3.3 Computer Classrooms/Open Labs

The University needs to establish a plan for the future of computer classrooms/open labs.

Background Information

It was reported that user's desire dedicated computer lab space. However, the University has more computers per institution FTE than other MA I institutions (see EDUCAUSE benchmarking in the Introduction Section of the report). What appears to be lacking at the University is computer lab spaces that are dedicated to open student use. Instead, the University has computer classrooms that double as open computer labs when not scheduled for class time.

Computer classroom/open lab support costs are funded by a combination of department budgets and the student technology fee. This funding does not cover maintenance and replacement costs for existing technology classroom/open lab equipment. Open labs are monitored by student monitors. Until recently, each open lab was assigned a student monitor. This was recently modified by the Student Technology Committee, who decided to assign 'roaming monitors' and cut back on the number of student lab monitors. These monitors are responsible for visiting each open lab assigned to them at least once per hour, and provide basic services, such as loading paper into printers and verifying that computers are operating effectively.

Computer classrooms/open labs are owned at the department level. As a result, the type of software available in open labs can vary significantly among buildings. During peak usage, the availability of open labs becomes limited, it can become difficult for students to access the software they need to complete their work. This also creates issues during examination periods, as faculty members are sometimes unable to schedule a classroom with the appropriate software installed.

Recommendation

The University should establish dedicated study spaces that provide students with the technology resources they need.

The University should consider the role of computer labs to determine if traditional, dedicated computer labs will be beneficial in the future, or if student needs would be better met by flexible learning spaces and application virtualization technology.

As the University moves forward, it will be important to consider the role of computer labs. IT is important that students have access to dedicated, technology-friendly study spaces. However, further research is necessary to determine if the desire for dedicated computer labs is symptomatic of the quality (not quantity) of lab computers due to ineffective computer refresh.



In order to ascertain the appropriate plan for computer labs, further research should be completed to understand student needs, program (college) needs, and ITS capacity. The University may find that students desire more flexible learning spaces that accommodate Bring Your Own Devices (BYOD), rather than computer labs equipped with stand alone computers. Before investing in a large number of lab computers, the University should consider how application virtualization may impact future needs.

3.4 IT Assessment and Refresh Program

The University does not maintain an effective IT assessment and refresh program.

Background Information

During our interviews, faculty and staff expressed frustrations with the age of the University's IT equipment. Older computers are slower, less reliable, and do not meet the processing requirements associated with newer software programs and upgrades. This is an impediment to workplace and classroom efficiency, and limits effective knowledge access and sharing. Older computers also require more frequent support, which results in an increased workload on the help desk.

Until recently, a portion of the technology refresh program was provided by the WIN-WIN program. This program was funded with \$250,000 annually, and enabled the ITS Department to provide state funded departments with up to \$250 in matching funds for approximately 1,000 computers per year. As part of state budget cuts, the WIN-WIN program was eliminated and departments are now responsible for purchasing computer equipment independently. This has a significant impact on both classrooms and labs, as the University does not have dedicated general use computer labs, but technology classrooms that double as labs. Consequently, the age of 'lab' computers is determined by the department that 'owns' the classroom.

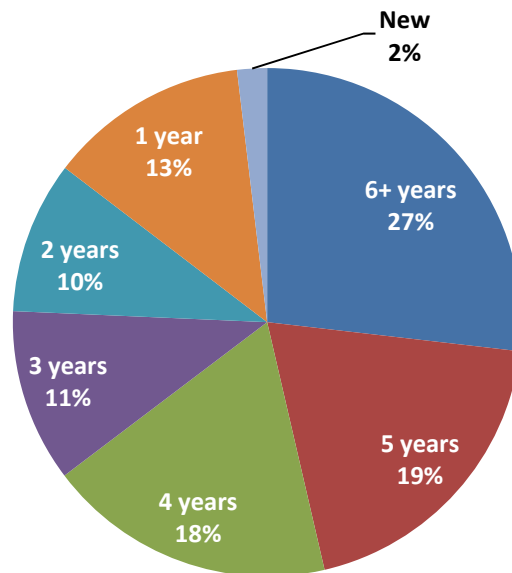
The combination of smaller departmental budgets and the loss of WIN-WIN program funding has resulted in the resurgence of outdated technology. As of February 2012, over a quarter of the University's computers are six or more years old. Industry best practices suggest that desktop computers be replaced every four years, and laptop computers every three years.

Not only are the classroom/lab computers aging, but much of the University's audio/visual equipment is over 10 years old. It was reported that the reliability of the equipment is deteriorating, and that many classrooms are not equipped with the technology desired by faculty.

In 2010 and 2011, the University upgraded all hardware associated with the PeopleSoft environment. During this time, the replacement of other servers and storage equipment was postponed until the following biennium. However, since that time the capital funding that was intended for replacement of this equipment was eliminated, and many of the University's servers and storage equipment is out of warranty and at the end of their expected life.

Figure 10 illustrates the age of the university’s computers and laptops by year.³

Figure 10: University Computers by Age



Recommendation

The University should establish an IT Assessment and Refresh program that is supported by a recurring budget.

The University should establish a comprehensive IT assessment and refresh program that includes computers, network devices, servers, and other peripherals that are managed by CWU. A successful technology refresh program requires a recurring technology refresh budget. The refresh budget should include a fund that is similar to the WIN-WIN program, in that it incentivizes departments outside of the ITS Department to reassess and replace/eliminate aging computers.

The refresh process should be guided by ongoing reassessment of refresh-qualifying technology. For instance, the ITS Department has identified 39 servers⁴ that are at end of life.

³ CSS Master Inventory List

Note: Of the 6,107 laptops and desktop tracked by the ITS Department, 1,264 have not been assigned ‘warranty start dates’. Computers without warranty start dates were not included in this analysis.

⁴ State of Non-Infrastructure Central Computing Equipment (Servers, Storage, etc.) at CWU

Before replacing these servers, thorough consideration should be given to alternative technologies, such as 'cloud' computing/hosting arrangements and server virtualization. By decreasing the number of physical servers in the data center, the University can save money on energy costs, reduce time spent on hardware maintenance, and minimize costs associated with future hardware replacements. It is important to note that cloud-based services should not be considered until the University establishes a secondary internet connection and increased bandwidth. The University is currently working with FairPoint and the Washington State K-12 consortium to address bandwidth needs, but plans for a secondary internet connection have not yet been established (See Disaster Recovery and Business Continuity Recommendation).

The assessment process should be guided by business needs, the input of the IT governance committee, and industry standards for technology refresh (see Appendix E).

Section 4.0: Recommendation Summary With Cost Impact

For the purposes of reading cost impact, please note the following:

<p>Black text = cost neutral. Implementing these recommendations will not have a significant impact on costs.</p>
<p>Green text = cost savings. Implementing these recommendations will provide an opportunity to reduce costs in the near to mid-term and will provide long-term benefit.</p>
<p>Red text = additional costs. Implementing these recommendations will require expending additional resources. However, there are expected long-term benefits from this investment. Benefits are identified where possible.</p>

This table cost impact considerations for planning purposes. A next step will be to prioritize actions and further refine the anticipated costs and benefits of moving forward with specific recommendations identified below. Where applicable, relevant cost estimates are cited from prior ITS work, such as the IT Major Project Roadmap, issued in February 2012. When costs are cited from this document, BerryDunn has presented the total estimated costs for this project, which are projected out over a six year horizon.

Figure 11: Summary of Recommendations with Cost Impact

Summary of Recommendations with Cost Impact	
Governance and Planning	<p>1.1 IT Governance. <i>Streamline and simplify the IT Governance model currently in place at CWU to improve decision making, prioritization, and communication.</i></p>
	<p>1.2 Project Intake Process. <i>Improve project intake and prioritization by incorporating business case analysis practices.</i></p>
	<p>1.3 Strategic IT Planning. <i>Develop an Information Technology Strategic Plan that includes strategic goals, priorities, and initiatives that will guide decisions about technology over the next five years.</i></p>
	<p>Cost Impact. The governance and planning recommendations do not require changes to existing staffing or systems. These recommendations do require the University to restructure its IT governance model and to subsequently reassess how IT projects are identified and prioritized at the University.</p>

Summary of Recommendations with Cost Impact		
Management and Operations	<p>2.1 PeopleSoft as the System of Record</p>	<p><i>Perform a business process assessment and fit-gap analysis to inform the development of a workplan for improving the University's use of PeopleSoft.</i></p> <p><i>Deploy data warehousing and business intelligence tools, and train users in their usage.</i></p> <p><i>Work to change the culture to view PeopleSoft and related software as tools of workflow and collaboration, not as technical databases.</i></p>
	<p>Cost Impact. The work of improving the University's usage of base functionality in PeopleSoft has already been started and significant progress was achieved with the last HRSA upgrade where over 80 customizations were removed from Campus Solutions modules. Additional work is necessary, though, and the University has identified the need to acquire some level of business intelligence capability.</p> <p>The current CWU IT Major Project Roadmap identifies Project ID#368 - Data Mart for Institutional Effectiveness/Business Intelligence. A consistent theme and point of frustration across the University was the lack of access to data and the poor quality of data in the PeopleSoft environment when developing reports. These efforts are complex and time-consuming. We suggest targets and priorities be established to perform a fit-gap analysis in a methodical manner that identifies opportunities for cost savings.</p>	
	<p>2.2 PeopleSoft Upgrade Process</p>	<p><i>Refine the upgrade process by adding structure and discipline through business process analysis and evaluation of customizations.</i></p> <p><i>Based on technology plans and service level objectives, proactively plan for additional staffing needs associated with upgrades.</i></p> <p><i>Improve upgrade efficiency by keeping up with quarterly PeopleSoft bundles and utilize the PeopleSoft upgrade lab.</i></p>

Summary of Recommendations with Cost Impact

Cost Impact. The University will incur costs by implementing these recommendations, as described above in 2.1. By strengthening the Upgrade process at Central, the University will improve efficiencies and make existing IT personnel available to focus on other tasks and priorities. By utilizing the PeopleSoft upgrade lab, Central staff can leverage existing vendor expertise. Although upgrade cycles may not be shortened, the amount of resources and attention that Central now spends on Upgrade packages should be reduced.

2.3 PeopleSoft Data Security Standards

Establish new data security standards for PeopleSoft.

To further reduce the level of customization in PeopleSoft, evaluate current custom-created roles and permissions to determine if the PeopleSoft-delivered roles can be modified to meet the University's needs.

Cost Impact. This will require upfront analysis and change. Security roles and standards should be considered when conducting the recommended fit-gap analysis outlined previously. The current CWU IT Major Project Roadmap identifies Project ID#12 – Identity Management with an estimated cost of \$51,000. This project should be implemented in conjunction with this recommendation.

The value of addressing issues around dissatisfaction with current security standards in PeopleSoft will have significant positive impact on the University staff. In addition, it should help to improve reporting and data access challenges outlined in prior section 2.1.

2.4 Functional and Technical Staff Collaboration

Establish the role of a Lead Functional System Analyst to improve coordination between the Enrollment Management Department, the Office of Institutional Effectiveness, and the Enterprise Applications group.

The Lead Functional System Analysts, the Enterprise Applications Security Administrator, and the Office of Organizational Effectiveness should work collaboratively to address Enterprise System challenges and needs.

Implement a non-production PeopleSoft development environment for functional users until a data warehouse can be established.

Establish an IT Code of Conduct that is understood and acknowledged by technical and functional PeopleSoft users.

Summary of Recommendations with Cost Impact

Cost Impact. It was reported to us that up until a few years ago, this position did exist at the University. When the individual that served in this capacity moved, this position was cut due to budget constraints and the State’s fiscal crisis.

In addition, implementing a non-production sandbox environment for functional users will require time and effort. The payoff will be seen in improved functional user satisfaction with PeopleSoft, understanding and documenting concerns and challenges they have in the current environment.

2.5 IT Service Portfolio

Establish an IT Service Portfolio to establish, communicate, and proactively manage baseline IT services.

Cost Impact. Establishing an IT Service portfolio will entail planning and start-up resources associated with it. However, by implementing a culture and discipline around IT Service management, the University can expect to strengthen customer service, have better visibility into what services (and applications) should be retired, and provide guidance to the Project Intake Process outlined in a prior recommendation.

2.6 Training for IT Staff

In order to effectively and efficiently support technology resources, the University should increase recurring funding for the training of IT staff.

To improve the consistency and reliability of services, cross-training should be strengthened across the IT community.

Cost Impact. Training for IT staff is an ongoing cost that is necessary to maintain appropriate levels of service and expertise. The University should work to restore training funding that is comparable industry standards as outlined in the Educause data. This would require roughly doubling the current allocation of IT training funding by ~ \$300 per IT employee.

2.7 Training for IT Users

In order to fully leverage current tools and resources, faculty and staff require introductory training on new technologies and refresher training on existing technologies. The type of training offerings and delivery options should be regularly assessed to verify that stakeholder needs are met.

Summary of Recommendations with Cost Impact

Cost Impact. Almost everyone on a University campus depends upon information technology to do their jobs. IT training for end users is expected to be largely cost neutral because the investment required to increase training can be offset by efficiencies gained and a reduction in need for help desk and other IT staff.

2.8 Distance and Online Learning

To develop an effective strategy for the growth and development of online and distance programs, the University must establish a clear direction that is understood and supported by stakeholders. University leadership will need to facilitate a collaborative planning process that engages a representative group of academic, technical, and administrative stakeholders in the decision-making process.

Cost Impact. Students continue to demand more mobility, 24/7 access to course materials and the ability to collaborate with other classmates. ITS has evaluated a plan to migrate from ITV technology and towards other technology tools that should increase the flexibility instructors have in delivering courses, and that more easily integrate with Blackboard and other learning platforms. Investments in online learning will reduce costs and provide increased revenue.

2.9 IT Staffing and Organization

Consider IT staffing and organizational structure changes that will improve IT service quality, efficiency, and utilization of resources.

Cost Impact. Value to users and improvements in customer service will exceed any additional costs incurred by adding new positions identified in section 2.9. Overall, the strategy should be to create a culture of “reassessment” so that whenever an existing IT position is up for replacement or renewal it is evaluated against the IT strategic plan and direction of the University.

Long-term savings opportunities offset the initial costs required to hire new positions. In addition, by consolidating groups within IT where the technology and/or the processes warrant, the University should be able to further streamline the organization and improve service.

Summary of Recommendations with Cost Impact	
Systems and Infrastructure	<p>2.10 PeopleSoft Self Service</p> <p><i>The University should deploy the PeopleSoft Time and Labor Module and expand its use of Self Service functionality.</i></p>
	<p>Cost Impact. Implementing existing Self Service functionality in PeopleSoft is one way the University will be able to leverage its significant investment in its enterprise software and streamline processes and improve efficiencies. The current CWU IT Major Project Roadmap identifies Project ID#122 HR Time and Labor with a total cost of \$858, 576.</p> <p>In addition, as part of any Self Service strategy, the University will have to establish an online Portal that will allow the University community to easily access these modules. Currently, IT Major Project Roadmap Project ID#16 Web 2.0 Portal has a total cost of \$1,274,195. However, this estimate may be inflated if the PeopleSoft Portal is implemented in the next Upgrade.</p> <p>Championing self-service functionality will help drive the campus to evaluate current processes, reduce the need for administrative functions, and strengthen PeopleSoft as the “system of record” (2.1) at CWU. According to the American Payroll Association, organizations that transition from paper based timesheet systems to electronic time clocks can expect to realize a 1-2% savings of total payroll dollars. By implementing time and labor self services, the University has the potential to realize a comparable level of savings.</p>
	<p>3.1 Disaster Recovery and Business Continuity Planning</p> <p><i>The University should establish an off-campus disaster recovery site.</i></p> <p><i>The University should also plan for the installation of a secondary independent internet connection to support business continuity for critical web-based applications. This will enable the University to consider cloud computing and hosting arrangements as it plans for the future.</i></p>
	<p>Cost Impact. This will require additional funding. As outlined in IT Major Project Roadmap ID#271, the University has estimated costs of \$110,000 to improve DR capacity. This does not include the costs for establishing a redundant second Internet “pipe” in and out of the Ellensburg campus.</p>
<p>3.2 Redundant Applications</p> <p><i>The University should further assess the potentially redundant applications identified in this report to determine if certain functions/capabilities can be consolidated to one or fewer applications. Potentially redundant applications were identified</i></p>	

Summary of Recommendations with Cost Impact	
	<p><i>for the following functions/capabilities:</i></p> <ul style="list-style-type: none"> • <i>Online Student Communities</i> • <i>Scheduling</i> • <i>Student Advising and Retention</i> • <i>Desktop Diploma Software</i> • <i>Accreditation Management and Academic Assessment</i> • <i>Content Management</i>
	<p>Cost Impact. BerryDunn has identified several opportunities for consolidation of existing applications at the University that perform similar functions. Benefits can be realized in both acquisition and maintenance costs that may be duplicated. One incentive that has worked well in the past is to allow Departments that identify applications for elimination or consolidation to keep identified cost savings for other purposes that support their unit.</p>
3.3 Computer Classrooms/Open Labs	<p><i>The University should establish dedicated study spaces that provide students with the technology resources they need.</i></p> <p><i>The University should consider the role of computer labs to determine if traditional, dedicated computer labs will be beneficial in the future, or if student needs would be better met by flexible learning spaces and application virtualization technology.</i></p>
	<p>Cost Impact. Universities typically have excessive square footage and computers dedicated to labs. New technologies, such as application virtualization, provide an opportunity to increase access to specialty software and applications while at the same time reducing the need for hardware and in-demand University space.</p> <p>Currently, IT Major Projects Roadmap Project ID#288 estimates \$790,000 in unfunded costs to refresh labs. The University should investigate opportunities to consolidate computer lab space while at the same time ensuring that dedicated space exists and that future investments focus on providing as much access and flexibility to Students as possible.</p>

Summary of Recommendations with Cost Impact	
3.4 IT Assessment and Refresh Program	<i>The University should establish an IT Assessment and Refresh program that is supported by a recurring budget.</i>
	<p>Cost Impact. The most important aspect of this recommendation is the need to continually assess technology at the University, as opposed to simply “refreshing” existing technology. It is expected that implementing a full IT refresh program will require additional funding. This is important to ensure that faculty, students and staff have the right tools to do their jobs and be successful.</p> <p>However, for an IT refresh program to be sustainable it must also focus on the need to re-evaluate technology on a regular basis to ensure that IT investments align with strategic priorities and are meeting the needs and demands of Central’s IT customers.</p> <p>Currently, a number of IT refresh projects are identified within the IT Major Projects Roadmap portfolio. The costs for all of these initiatives are significant and will require further evaluation and analysis. Replacement projects include, but are not limited to:</p> <ul style="list-style-type: none"> Project ID#279, WIN-WIN: \$875,000 Project ID # 288, Computer Labs: \$790,000 Project ID # 300, Traditional Classroom: \$1,500,000 Project ID # 301, Distance Education: \$800,000 Project ID #303, Library Modernization: \$160,000

BerryDunn would be pleased to discuss any questions that may arise regarding the findings and recommendations in this report or the implementation of changes that leadership may choose to undertake.

SECTION 5.0: NEXT STEPS FOR IMPLEMENTING CHANGE

This report has identified changes that Central Washington University should consider making to its current IT environment with regards to people, processes, and systems. However, without proper planning, collaborative engagement from IT practitioners and their customers, and a vision of where the University wants IT services to be in the coming years, implementing change will be difficult and the resources expended may not be effectively utilized.

At the request of our client, we considered steps that could be taken to help the University move forward in planning for and realizing changes described in this report.

The following table identifies “change drivers,” outcomes associated with changing current processes and operations and next steps with which BerryDunn could assist the University. It also identifies potential timing and references specific issues and recommendations in the report relevant to each change driver. It is likely that this table will need further input and discussion with CWU leadership, but we believe that it outlines logical next steps in a way that will best benefit the University, the IT Department, and the community it serves.

Figure 12: Change Drivers and Actionable Next Steps

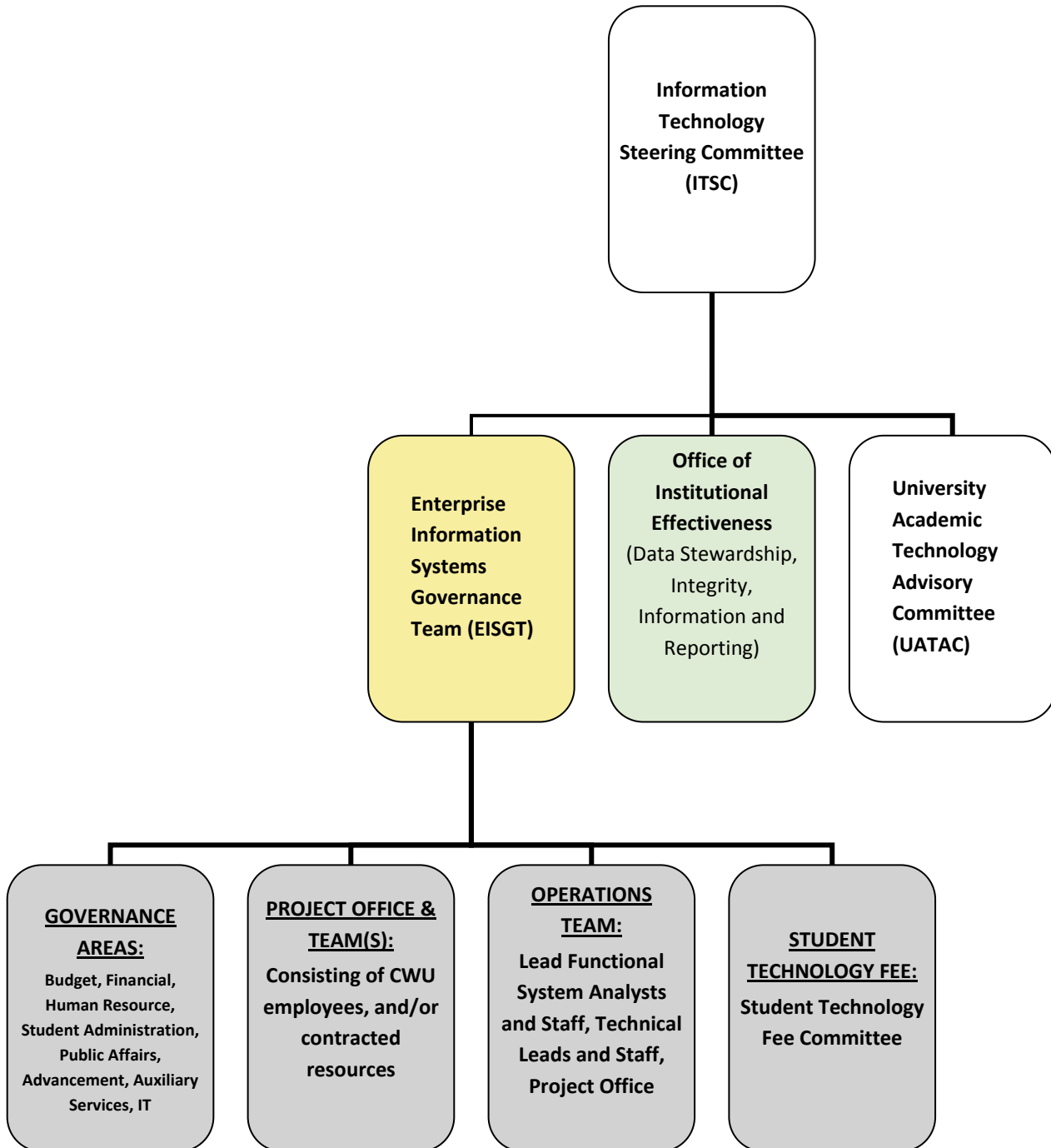
ID #	Change Driver	Outcomes and Next Steps	Timing
1.	The current number of IT Projects outlined in the IT Major Projects Roadmap is not feasible from a resource or staffing perspective. In addition, the lack of an effective IT Governance model is slowing down the prioritization and decisionmaking for critical IT needs.	<p>Outcome: the IT Major Projects Roadmap is revised and updated to reflect decisions made, strengthen the process of project analysis, and gain buy-in from stakeholders for securing resources for high priority initiatives.</p> <p>Next Step: BerryDunn facilitates a one-day work session with key IT, finance, and academic personnel to review the IT Major Projects Roadmap document and develop a strategy and plan to reduce the number of projects. Actions to strengthen the current IT Governance model are also identified.</p> <p>Examples of business requirement templates that could be adopted by CWU to improve standardization of project intake practices would also</p>	June 2012

ID #	Change Driver	Outcomes and Next Steps	Timing
		be beneficial.	
Please refer also to sections 1.1, 1.2, 1.3, 2.9, 3.3, and 3.4			
2.	The University needs to clarify roles and responsibilities amongst ITS and other Distributed IT personnel. This will benefit the entire IT community and improve the University's ability to provide effective customer service to academic and administrative stakeholders.	<p>Outcome: A draft "IT Service Grid" is created that serves as the starting point for developing an IT Service Catalog at CWU.</p> <p>Next Step: BerryDunn facilitates a one-day work session with IT leadership and a cross-functional group of Distributed IT to map out who owns what services at CWU and who should be the primary service provider.</p>	June 2012
Please refer also to sections 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, and 3.3			
3.	The University needs to fundamentally change the way it views data ownership and how information is shared at Central.	<p>Outcome: a workplan is developed that outlines changes that will need to take place to strengthen data management and data integrity at the University. The workplan also identifies current process "chokepoints" that will need to be addressed to improve data management.</p> <p>Next Step: BerryDunn facilitates one or more work sessions with the University's data custodians and IT representatives with the intent of improving access to data and clarifying the role that the Office of Institutional Effectiveness should play in creating a shared data governance model at CWU.</p>	August 2012
Please refer also to sections 1.1, 2.1, 2.3, and 2.4			
4.	The University needs to map out a vision for how it can streamline PeopleSoft upgrades and determine what Enterprise services should be handled internally by CWU staff	<p>Outcome: Create an Action Plan that outlines how to improve the current upgrade process and identify areas where outsourcing</p>	August 2012

ID #	Change Driver	Outcomes and Next Steps	Timing
	and what areas should be targeted for contractor support in meeting this objective.	certain aspects of upgrades would be beneficial for the University to consider. Next Step: BerryDunn facilitates a one-day worksession with Applications Services, Project Management Office and Functional Business Leads.	
Please refer also to sections 2.2, 2.6, 2.7, 2.9, 2.10			
5.	The University must have a current and sustainable Strategic IT Plan that aligns with the University’s core mission and vision. Over time the University needs to focus resources on those activities that support the strategic direction of the University in teaching, learning and public service.	Outcome: Detail an action plan and timeline for developing an IT Strategic Plan, establish the necessary inputs and process required, and then create the plan. Next Step: BerryDunn can work with the University to create a collaborative process for developing an IT Strategic Plan that incorporates the entire University’s IT needs and operating objectives and builds upon the work done in this assessment and other planning efforts.	Fall 2012
Please refer also to sections 1.1, 1.3, 2.8, 2.9, 3.4			

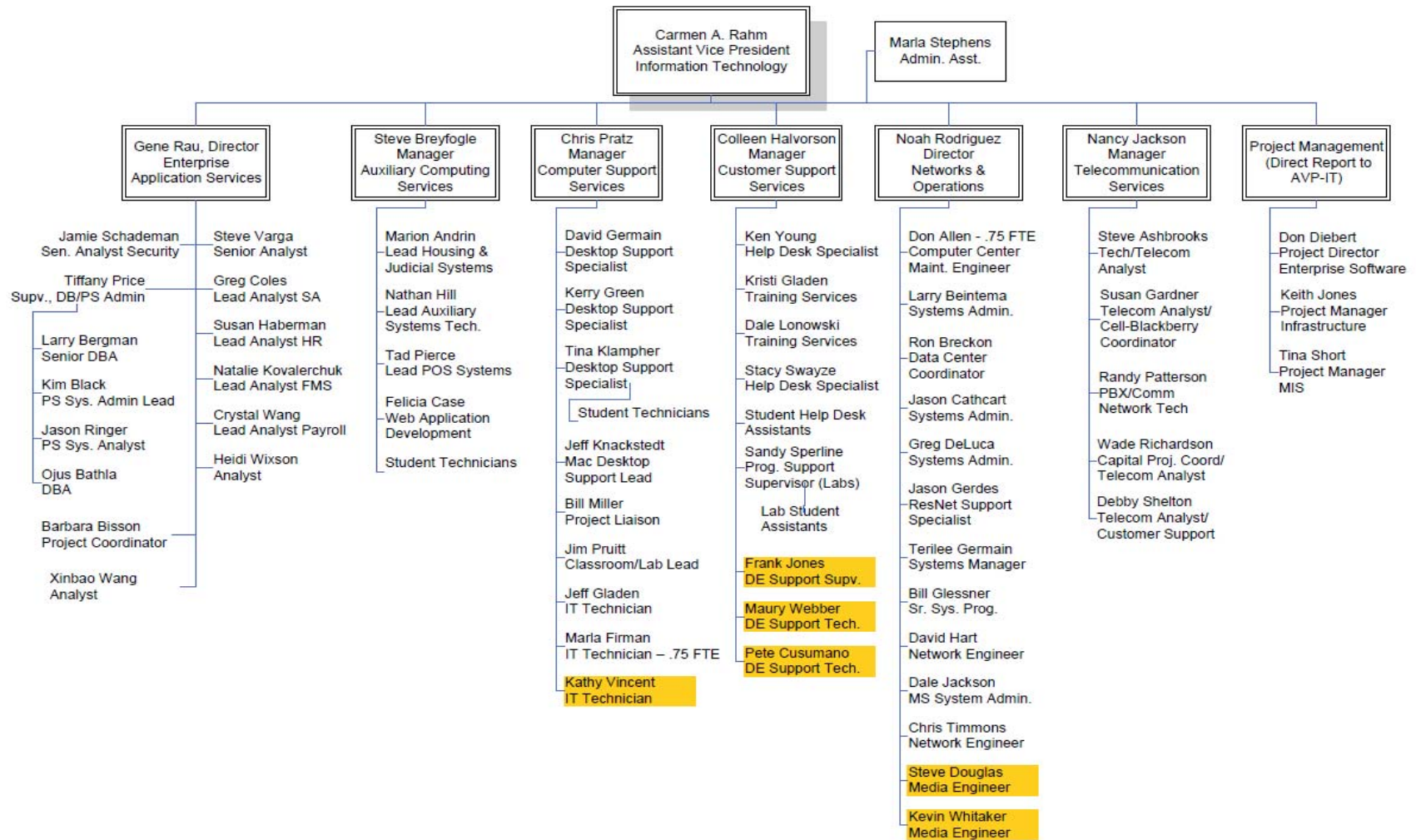
APPENDIX A: CURRENT CWU IT GOVERNANCE STRUCTURE

The following chart is from the Enterprise Information Systems Governance Charter, which was last updated in November 2011.



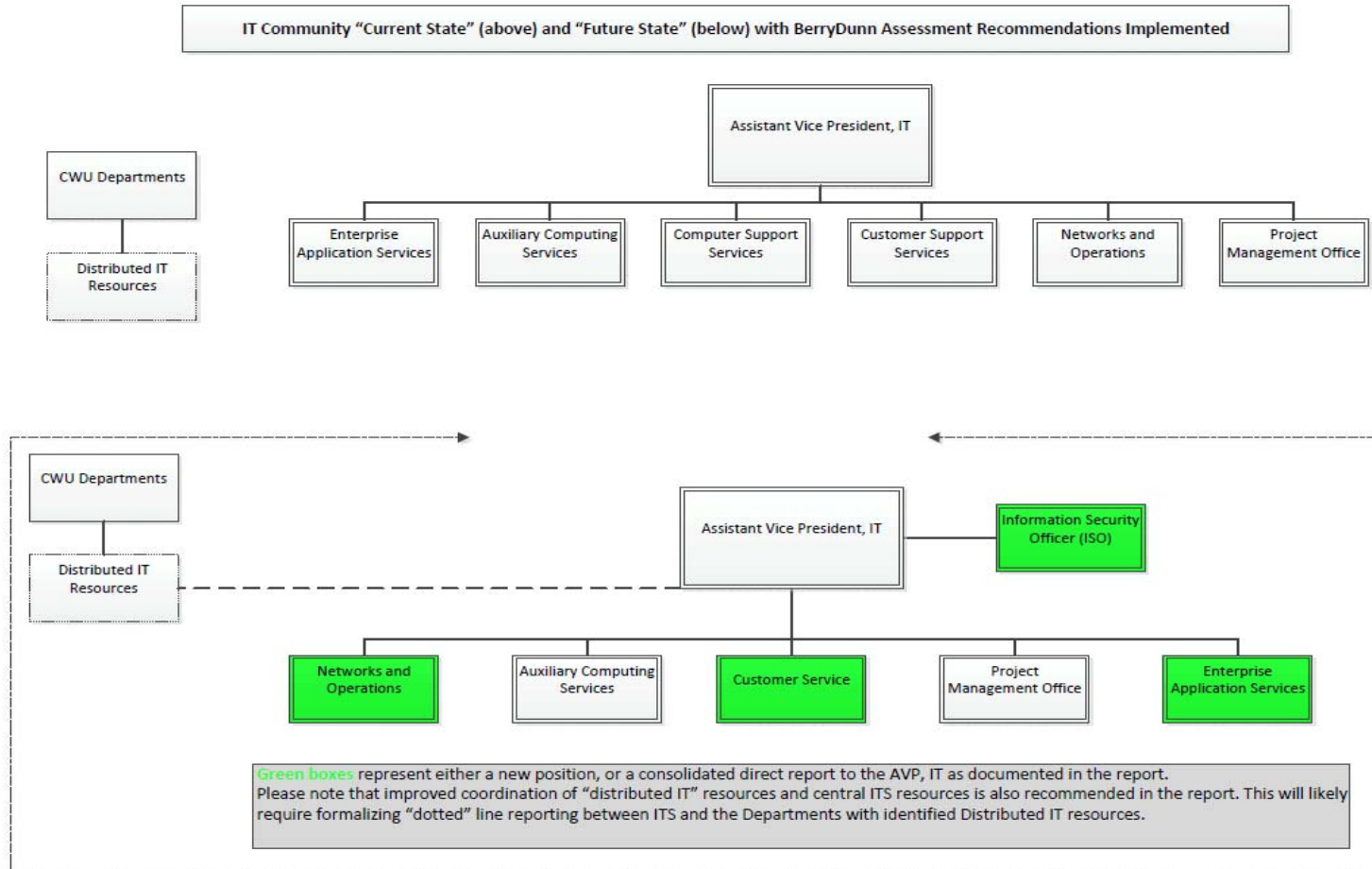


APPENDIX B: ITS DEPARTMENT ORGANIZATION



Effective: January 4, 2012

APPENDIX C: IT COMMUNITY FUTURE STATE



APPENDIX D: SAMPLE IT CODE OF CONDUCT

The following Code of Conduct is from the Franklin Marshall College website:

ITS Code of Conduct

Some members of the ITS staff have privileged access to technologies that might give them access to others' confidential information. These individuals have pledged to respect the rights of the system users, to respect the integrity of the systems and related physical resources, and to comply with any relevant laws or regulations. The principles of academic freedom, freedom of speech, and privacy of information are always respected as ITS staff provides appropriate, high-quality, timely, reliable, information technology services.

Specific provisions of the ITS Code of Conduct includes:

- Privileged access is granted only to authorized individuals in order to perform assigned job duties, such as system maintenance, individual file recovery, changing passwords upon request by the user or running security checking programs.
- ITS staff does not look at individual files or an individuals' electronic information (eDisk, email, files in folders, etc.) and would only do so if so requested by the user, or in writing by the Vice President responsible for the individual in question or presented with a subpoena for information from federal, state or local law enforcement authorities.
- Privileged access may be used to grant, change, or deny resources, access, or privilege to another individual only for authorized account management activities or under exceptional circumstances.
- Individuals with privileged access shall take necessary precautions to protect the confidentiality of information encountered in the performance of their duties. If, during the performance of their duties, individuals with privileged access inadvertently see information possibly indicating inappropriate use, they are advised to consult with their supervisor. If the situation is an emergency, intervening action may be appropriate.
- Under most circumstances, the consent of the account owners should be obtained, if possible, before accessing their files or interfering with their processes. However, if good faith efforts to obtain consent are not successful, or would unduly interfere with performance of assigned duties; refer to any organizational guidelines or procedures for taking such actions without consent.

APPENDIX E: BEST PRACTICES FOR TECHNOLOGY REFRESH CYCLES

Per Educause, best practices for technology refresh/replacement cycles are as follows:

- Desktop computers - 4 years
- Laptop computers - 3 years
- Servers - 4 years
- Wired network equipment - 4 to 6 years
- Wireless network equipment – 3 to 6 years
- Classroom projectors - 3 to 5 years
- Fiber in the ground - 20 years
- Fiber in the walls - 10 years
- Copper in the walls - 10 years
- Classroom technology - 4 to 5 years
- Telephony (VoIP) - 5 years⁵

BerryDunn’s experience is that refresh practices and cycles can vary in specific environments. Refresh cycles should be considerate of operating and business objectives as well as industry practices.

⁵ Educause – Replacement Strategy. Educause 18 November 2011.
<http://www.educause.edu/Resources/Browse/Replacement%20Strategy/33301>

APPENDIX F: LIST OF INTERVIEW PARTICIPANTS

Name	Department
Marilyn Levine	Academic & Student Life
Nicole Dunn	Academic Advising
Tracy Pellett	Academic Affairs
Becky Gubser	Academic Finance
Kelly Minor	Accounting
John Ebenal	Accounting
Anna Fischer	Accounts Payable
Mat Scott Carpenter	Army ROTC
Shelly Baird	Budget
Brenda Mofford	Budget
Scherry Sinclair	Budget
Marji Morgan	College of Arts & Humanities
George Drake	College of Arts & Humanities
Todd Shiver	College of Arts & Humanities
Allen Larsen	College of Arts & Humanities
Christina Barrigan	College of Arts & Humanities
Jerry Dougherty	College of Arts & Humanities
David Brown	College of Arts & Humanities
Scott Robinson	College of Arts & Humanities
Charlene Andrews	College of Arts & Humanities
Michael Chinn	College of Arts & Humanities
Roy Savoian	College of Business
Debra Boddy	College of Business
Rhonda Schmidt	College of Business
Laura Milner	College of Business
Margaret Smith	College of Business
Marv Bouillon	College of Business
Terry Wilson	College of Business
Jeff Stinson	College of Business

Name	Department
Nancy Graber	College of Business
Sharon Damm	College of Business
Marly Lowe	College of Business
Todd Weber	College of Business
Bill Provasn	College of Business
Ron Tidd	College of Business
Connie Lambert	College of Education and Professional Studies
Sue Wright	College of Education and Professional Studies
Kirk Johnson	College of the Sciences
Kari Linnell	College of the Sciences
Doug Lonowski	Continuing Education
Ian Loverro	Educational Foundation & Curriculum
John Swiney	Enrollment Management
Kathy Gaer-Carlton	Enrollment Management
Tracy Terrell	Enrollment Management
Tami Morrill	Enrollment Management
Patrick Stanton	Enterprise Accounting
Lohn Logwood	Enterprise Accounting
Lisa Saucier	Facilities Management Department
Mickey Parker	Facilities Management Department
Bill Vertrees	Facilities Management Department
Ed Castaneda	Facilities Management Department
Doug Ryder	FF & OS
Kevin Conwell	Financial Services
Tim McGuire	FMS
Wayne Quirk	Graduate Studies
Rob Harden	Human Resources
Andy Clemen	Human Resources
Steven Herrera	Human Resources
Lynn Hutchins	Human Resources

Name	Department
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Kirk Eslinger	Human Resources
Mike Launius	International Studies/Programs
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Carmen Rahm	ITS
Donald Diebert	ITS
Noah Rodriguez	ITS
Nancy Jackson	ITS
Tina Short	ITS
Chris Pratz	ITS
Colleen Halvorson	ITS
Gene Rau	ITS
Steve Breyfogle	ITS
Tiffany Price	ITS
Frank Jones	ITS
Marion Andrin	ITS, Auxiliary Computing
Nathan Hill	ITS, Auxiliary Computing
Tad Pierce	ITS, Auxiliary Computing
Marla Firman	ITS, Computer Support Services
Kathy Vincent	ITS, Computer Support Services
Jim Pruitt	ITS, Computer Support Services
Jeff Gladen	ITS, Computer Support Services
William Miller	ITS, Computer Support Services
Dave Germain	ITS, Computer Support Services
Tina Klampher	ITS, Computer Support Services
Dale Lonowski	ITS, Customer Support Services
Kristi Gladen	ITS, Customer Support Services
Sandy Sperline	ITS, Customer Support Services
Ken Young	ITS, Customer Support Services
Sridher Komakula	ITS, Enterprise Applications

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Heidi Wixson	ITS, Enterprise Applications
Jamie Schademan	ITS, Enterprise Applications
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David Hart	ITS, Network & Operations
Jason Gerdes	ITS, Network & Operations
Terilee Germaine	ITS, Network & Operations
Steven Douglas	ITS, Network & Operations
Larry Beintema	ITS, Network & Operations
Greg DeLuca	ITS, Network & Operations
Don Allen	ITS, Network & Operations
Bill Glessner	ITS, Network & Operations
Dale Jackson	ITS, Network & Operations
Ron Breckon	ITS, Network & Operations
Randy Patterson	ITS, Telecommunications
Wade Richardson	ITS, Telecommunications
Debby Shelton	ITS, Telecommunications
Steve Ashbrooks	ITS, Telecommunications
Susan Gardner	ITS, Telecommunications
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Chris Mayer	Library
Gavin Spomev	Library
Gayle Score	Library
Christopher Gwyn	Library
Gerard Hogan	Library
Patrick Owens	Library

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Ping Fu	Library
Kathy Nelms	Library
Jane Jorgen	Library
John Creech	Library
Steve Hussman	Library
Daniel Cannasciato	Library
Marcus Kieltyka	Library
Mary Wise	Library
Karen Stephens	Library
Carol Peterson	Library
Kerry Slaughter	Library
Erin Bledsoe	Library
Becky Severin	Library
Carlos Diaz	Library
Geri Hopkins	Library & Online Learning
Delayna Breckon	Online Learning
Chris Schedler	Online Learning
Jane Chinn	Online Learning
Ed Day	Organizational Effectiveness & Institutional Research
Amy Zukowski	Organizational Effectiveness & Institutional Research
Coleen Gelatt	Organizational Effectiveness & Institutional Research
Mark Lundgren	Organizational Effectiveness & Institutional Research
Chris Huss	Organizational Effectiveness & Institutional Effectiveness
Cindy Rickey	Payroll
Sherer Holter	President's Office
Sandy Colson	President's Office
George Clark	President's Office
James Gaudino	President's Office
Jesse Days	Public Affairs

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Linda Schactler	Public Affairs
Teri Olin	Public Affairs
Ty Purdy	Student
Joe Burns	Student
Kaitlin Harrison	Student
Agnes Canoda	Student Accounts & Financial Aid
Uriel Hernandez	Student Financials
Ethan Bergman	Student Success
Jesse Nelson	Student Success
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Mike Smith	University Advancement
Tippy Cooper	University Advancement
Karri Hansberry	University Advancement
Brian Jacobson	University Advancement
Barbara Hodges	University Advancement
Chris Frankenfield	University Advancement
Michoan Spoelstra	University Advancement
Scott Wade	University Advancement
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Olivia Ripka	University Centers - Des Moines
Scott Leong	University Centers - Des Moines
Amber Darting	University Centers - Lynnwood
Faimous Harrison	University Centers - Lynnwood
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Bree Callahan	University Centers - Lynnwood
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Christine English	University Centers - Pierce County
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Marcus Kiltika	University Centers - Yakima