

Information Technology Services

Roadmap 2014-2016

Introduction

This document charts the direction for Humboldt State University's Information Technology Services department over the next three years.

It has been built to support HSU's key strategic priorities:

- Inclusive student success
- Generating additional revenue
- Advancing HSU's vision

The roadmap addresses three interlinked areas of activity in support of ITS' mission, vision, and values which focus on the following strategies:

- Fostering **student success** by developing a transformative environment that positively engages students on the path to a successful on-time graduation
- Deploying **enabling technologies** that provide staff, faculty, and students with the tools for student success and revenue generation
- Improving **operational effectiveness** to support the business of managing the University efficiently

Figure 1 provides an overview and summary of each area.

The remainder of this document outlines the initiatives proposed by ITS to support each area and a tabular view of the status of those initiatives (started, planned, or envisioned).

Information Technology Services Roadmap 2014-2016

Mission

Deliver useful tools and services in support of HSU's effectiveness

Vision

Meet HSU needs through ongoing innovation & outstanding service

Values

Service, teamwork, innovation, excellence, trust, accountability

Student Success

Expand the range and quality of **online student services**

Provide labs, smart classrooms and online resources that support **students' preferred learning**

Provide robust and user-friendly **technology tools for teaching**

Enabling Technologies

Data for analytics - a comprehensive resource providing the whole campus with a tool for strategic planning and operations

Mobility - provide consistent access to services and data from wherever you are and with any device

PeopleSoft First - wherever possible, use CMS capabilities rather than third party solutions

Cloud First - wherever practical, make use of cloud hosting flexibility over adding capacity in the data center

Operational Effectiveness

Process Improvement - strategies to improve both internal and customer-facing services

Secure Systems - ensure integrity and safety of campus data assets and community members' privacy

Planned Abandonment - realign/remove systems and services that no longer support priorities

Figure 1

Initiatives in Support of ITS Strategies

This section – the “meat” of the Roadmap – addresses the three strategies described in the foregoing section and associates specific ITS initiatives with each. Many of these initiatives overlap in the strategies they support, and we will always be looking for additional benefits to be accrued from any new technology introduced on campus to optimize our return on investment. The table in Appendix A illustrates the cross-benefits between initiatives.

Strategy #1: Student Success

These initiatives are designed to provide dynamic service to the learning community as evolving technology and social media change campus culture and impact students’ preferred methods of engagement with the University. In support of this continuing evolution, ITS will introduce and integrate new technology beyond computers that will expand the possibilities for mobile learning and enrich classroom and lab environments.

Student Success Initiative #1: Online Student Services

myHumboldt

We will continue to evolve and enhance the myHumboldt portal to maximize its value to students; this will include the provision of an appropriate mobile interface to the portal’s personalized communications channels.

Status: In process

Support systems for distance learners

We will collaborate with other areas on campus such as the College of eLearning & Extended Education, Student Affairs, and the Library to deliver timely and effective support services to students taking online courses. These services will include advising, registration, financial aid, library, and software usage.

Status: Totally new

Improved retention rates and academic experience for students

We are collaborating with other areas on campus, including Disabled Student Services, Student Affairs, and Retention and Inclusive Student Success, to deliver tools that give students the best possible opportunities for a successful on-time graduation. These tools will support optimal academic experiences across a diverse student population.

Status: In process through MAP-Works, DARS, College Scheduler

Student Success Initiative #2: Students' Preferred Ways of Learning

Virtual Lab

We will work to expand the number of applications available through the Virtual Lab (VLab) that will provide students with more flexibility in when and where they are able to study.

Status: Foundations established

Self-service

We will work to expand the number of self-service opportunities that can be made available to students through a mobile interface, enabling them to access and interact with necessary services on their own schedules.

Status: Foundations established

Collaborative resource development

We will seek student input on improvements they would find helpful in our Learning Management System (LMS). This process may point us in the direction of a different LMS in order to obtain the desired functionality.

Status: In process through Moodle / Alternative systems may be considered

Student Success Initiative #3: Technology Tools for Teaching

Learning Management Systems (LMS)

We will research options to expand the functionality, ease of use, and adoption levels for our current learning management system and also explore whether our LMS goals may be better achieved through the adoption of a different system.

Status: In process through Moodle / Alternative systems may be considered

Video streaming services

We will develop internally or identify a hosted video streaming service that is adaptable to multiple screen sizes and can be used over slower connections to make more online content available to distance learners.

Status: Totally new

Interactive classroom technology

We will collaborate with faculty and Facilities to expand the interactive capabilities available to students and instructors in Smart Classrooms and computer labs through outsourced and/or internally developed technology.

Status: Foundations established

Strategy #2: Enabling Technologies

The initiatives described here are designed to expand upon, improve, and support HSU's core enterprise-level information systems and services. Once deployed, they will function as building blocks to drive administrative innovation and efficiency.

Enabling Technologies Initiative #1: Data Analytics

Big Data

We will explore and deploy tools to store, manage, and analyze the information the University uses to make decisions, with a particular focus on unstructured data sets that cannot be analyzed using traditional database methodologies.

Status: In process through MAP-Works, Identity Management; additional areas under consideration

Consolidated Data Warehouse

We will combine efforts with other departments in order to create a single consolidated data warehouse. This will reduce duplication of effort and free up time for report development as well as enriching the data sets available to campus.

Status: In process through MAP-Works, PeopleSoft upgrades, Data Warehouse Leadership Team; additional areas under consideration

Self-Sufficiency in Report Building

We will cultivate self-sufficiency among users in the design and development of new reports through ongoing professional training. This will enable efficiencies in customer service through faster response times.

Status: In process through Data Warehouse Leadership Team

Enabling Technologies Initiative #2: Mobility

Server Virtualization

We will continue to aggressively convert our remaining physical servers into virtual machines to reduce energy consumption, free up physical space, and increase flexibility in system and resource management. This will enable us to restore service more quickly in the event of server failure.

Status: Foundations established through Cloud Computing Pilot Project, Drupal upgrade; additional areas under consideration

Desktop Virtualization

We will build out pools of virtual desktops that will enable mobile and remote users to access University computing resources and fileshares securely using mobile devices.

Status: Foundations established through Virtual Desktop Project; additional areas under consideration

Application Virtualization

We will extend and expand on the virtual application library support capabilities in VLab to provide mobile access to key software applications across the campus community.

Status: Foundations established through VLab; additional areas under consideration

File synchronization

To better support an increasingly mobile community, we will identify and adopt cloud file hosting solutions that will provide secure, reliable access to campus computing resources through multiple mobile devices whether HSU- or personally-owned.

Status: Totally new

Bring Your Own Device (BYOD)

We will develop a set of policies, standards, and services that will enable staff, faculty and students to connect personally owned devices to the University network and information resources securely and reliably.

Status: Foundations established through various wireless projects

Mobile myHumboldt

We will research, design, and deliver personalized communications through an appropriate mobile user interface for the myHumboldt portal, taking into account the range of mobile platforms in use.

Status: Foundations established

Mobile Self-Service

We will work to expand the number of mobile interfaces and applications available to students, faculty, and staff for self-service interactions with University information systems and resources.

Status: Foundations established

Single Sign-On

We will expand the number of University services and resources for students, staff, and faculty that are configured for single sign-on and accessibility through myHumboldt.

Status: In process through myHumboldt; additional areas under consideration

Enabling Technologies Initiative #3: PeopleSoft First

Prioritize PeopleSoft

If the functionality to do what needs to be done exists in PeopleSoft, making use of that functionality will always be our first option. Doing so will enable us to keep our data in one place and make full use of the investment the University has already made in PeopleSoft.

Status: In process through PeopleSoft

Continuous Training

We will provide additional and refresher training in core PeopleSoft functionality to ensure all units that are intensive PeopleSoft users will get the maximum benefit from the software.

Status: In process in collaboration with Training & Development

Eliminate Shadow Systems

We will inventory all processes that are currently carried out using subsets of PeopleSoft data and use the resulting information to explore whether there are practical opportunities to move these processes into the PeopleSoft environment.

Status: Totally new

Enabling Technologies Initiative #4: Move to the Cloud

Conduct Comparative Assessments

We will undertake a detailed study to compare the capital expenditure and ongoing cost (return on investment) of locally deployed applications and servers with their cloud-based equivalents.

Status: Foundations established

Investigate Consumer Services

We will engage in a proof of concept project using consumer cloud resources (Google, Microsoft, Box, etc.) to determine the potential value for student file storage, hosted application adoption, and other potential usage.

Status: Totally new

Strategy #3: Operational Effectiveness

This strategy will focus on developing and implementing practices that will lead to maximum institutional value from the University's resources – time, money, people, and information. By focusing on the improvement of underlying processes, the campus will benefit from a more solid and effective foundation on which to build future technology projects.

Operational Effectiveness Initiative #1: Process Improvement

Streamline Common Business Processes

We will coordinate with and support units seeking to acquire technology tools that transform their work, such as budget management or event organization.

Status: In process through project teams

Improved Project Management

We will add structured strategies to the ITS project management processes, with the goal of ensuring that every automation project leads to better customer service, increased productivity, and decreased costs to the University.

Status: Foundations established through Process Improvement Manager hire

Process Improvement Training

We will provide training to build process improvement methodology capabilities across the University. This will enable individual departments to conduct their own internal process improvement initiatives.

Status: Totally new

Nolij

We will continue to deploy the Nolij document imaging and automated workflow solution across campus, with a strong emphasis on process improvement before automation.

Status: In process through multiple ITS projects

Web Standards

We will work in partnership with Marketing Communications to increase campus awareness of web standards and improve competence with web tools. This collaboration will help us to build a stronger practice in good web content development and execution across the University.

Status: Foundations established through Drupal Upgrade project

Human Resources Data Synchronization

We will coordinate and support the implementation of the Common Human Resources System (CHRS) including the Higher Education Constituent Hub (HECH), which will synchronize personal information between HR and student systems.

Status: Foundations established through Common Human Resources System project

Operational Effectiveness Initiative #2: Secure Systems

Expanded Training

We will expand and update our information security training programs to ensure the safety of campus data assets, beginning with the areas of highest risk.

Status: Foundations established

Reduce Protected Data Vulnerability

We will establish an ongoing program of scanning local hard drives and servers for Level 1 and Level 2 protected data; where there is no solid reason for local storage, the data will be securely erased. Business processes that enable local storage of Level 1 protected data will be modified.

Status: Foundations established

Identity Management

We will replace our existing home-grown identity management system with a comprehensive commercial package. As a part of this process, we will consolidate the information we store about users and provide a portal for policy, resource, and privilege management.

Status: In process through Identity Management 2.0 project

Streamlined Campus On- and Off-boarding Processes

We will re-engineer the on- and off-boarding processes to ensure that appropriate and secure access to enterprise systems is always in place. We will also work to improve supervisors' understanding of the security roles in PeopleSoft and other enterprise software applications, as well as their responsibilities with regard to their staff's access privileges.

Status: Totally new

Unified Backup Processes

All current independent backup processes will be combined into a single unified procedure. Tape backups will be phased out, and we will establish reciprocal backup mirroring with another CSU campus.

Status: Totally new

Consolidated File Storage

File storage architecture will be standardized for all categories of files (personal, shared, web, etc.) and consolidated on dedicated file storage servers.

Status: Totally new

Operational Effectiveness Initiative #3: Planned Abandonment

Optimize Resources

We will evaluate all existing IT systems and services, and either remove or realign those which do not support HSU priorities. This will free up time and resources to deliver services with greater value and impact, and enable us to consolidate redundant systems, services, and data.

Status: Totally new

Reduce Legacy Systems

We will extract archived data from old, infrequently used applications and make that data more widely available by consolidating it in a common location and format. The old applications will be retired, removing the need to maintain and support them.

Status: Foundations established

Eliminate Aging Hardware

Older hardware that cannot easily support or run current software versions, or that requires intensive care to maintain, will be eliminated. This will enable us to focus on systems that can reliably deliver University services with lower costs and resources.

Status: In process

Simplify Software Imaging

We will remove older or unused versions of software applications so that we can speed up deployment of new systems, thanks to smaller, simpler software images. Where appropriate, older versions will be upgraded to eliminate compatibility and operational problems.

Status: Foundations established

Reduce Use of Older Services

We will reduce or eliminate services based on older, locally maintained technology in those situations where newer commercial technology more closely aligns with University priorities, ITS strategies, and user expectations, and is more efficient to support.

Status: Foundations established

Reduce Use of Shadow Systems

Discover and reduce or eliminate the number of shadow systems maintained by users, particularly for functions that are widely needed across campus. This will significantly improve efficiency, propagate best practices, and reduce asynchronous data stores where the data in shadow systems conflicts with the data in systems of record.

Status: Totally new

Appendix A: Mapping Strategy and Initiatives

The table below shows how each strategy and each initiative map to each other and the status of each.

◆ In Process ◆ Foundations Established ◆ Totally New

INITIATIVES ↓	ACTIONS ↓	STUDENT SUCCESS			ENABLING TECHNOLOGIES				OPERATIONAL EFFECTIVENESS		
		Online Student Services	Technology Tools for Teaching	Preferred Ways of Learning	Data for Analytics	Mobility	PeopleSoft First	Cloud First	Process Improvement	Secure Systems	Planned Abandonment
myHumboldt	MyHumboldt	◆				◆					
Distance learner support		◆		◆							
Improved retention and academic experience	MAP-Works, DARS, College Scheduler	◆									
Learning Management Systems	Moodle	◆	◆ ◆								
Video streaming services		◆	◆			◆					
Interactive classroom technology			◆								
Virtual Lab	VLab			◆							
Self-Service	myHumboldt	◆		◆		◆					
Collaborative resource development	Moodle	◆	◆	◆							
Big data	MAP-Works, Identity Management				◆ ◆	◆					
Consolidated data warehouse	MAP-Works, PeopleSoft upgrades, DWLT				◆ ◆	◆	◆				
Self-sufficient report building	DWLT				◆						
Server virtualization	Cloud Computing pilot, Drupal upgrade					◆		◆			
Desktop virtualization	Virtual Desktop project					◆		◆			
Application virtualization	VLab		◆	◆		◆		◆			
File synchronization						◆		◆		◆	
Bring Your Own Device	Wireless projects			◆		◆				◆	
Mobile myHumboldt	myHumboldt	◆				◆		◆			
Mobile self-service	myHumboldt	◆				◆		◆			
Single sign-on	myHumboldt	◆		◆		◆					
Prioritize PeopleSoft	PeopleSoft upgrades				◆		◆		◆		
Continuous Training							◆		◆		

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		Online Student Services	Technology Tools for Teaching	Preferred Ways of Learning	Data for Analytics	Mobility	Peoplesoft First	Cloud First	Process Improvement	Secure Systems	Planned Abandonment
Eliminate shadow systems							◆		◆		◆
Conduct comparative assessments	Cloud Computing pilot							◆			
Investigate consumer services		◆				◆		◆	◆		
Streamline common business processes	Project teams								◆		
Improved project management	Process Improvement Manager hire								◆		
Process improvement training									◆		
Nolij	Multiple ITS projects								◆		
Web standards	Drupal upgrade							◆	◆		
HR data synchronization	CHRS				◆		◆		◆		
Expanded security training										◆	
Reduce protected data vulnerability										◆	
Identity management	Identity mgmt project				◆					◆	
Streamlined onboarding and offboarding							◆		◆	◆	
Unified backup								◆	◆	◆	◆
Consolidated file storage										◆	◆
Optimize resources											◆
Reduce legacy systems											◆
Eliminate aging hardware											◆
Simplify software imaging											◆
Reduce use of older services											◆
Reduce use of shadow systems								◆			◆