UW Information Technology
2014 Strategic Investment Plan

Creating new capabilities to position the UW for the future

W **INFORMATION TECHNOLOGY**
UNIVERSITY *of* WASHINGTON

Contents

1. Introduction

This document presents a framework for discussing the University of Washington's information technology landscape, and an overview of UW Information Technology (UW-IT) investment priorities for the next three years. The investment plan was developed in partnership with the University's three IT governance committees: the IT Strategy Board, IT Service Investment Board and IT Service Management Board, and is intended to foster collaboration across all UW units.

UW-IT cooperates with other units to: 1) enable students, faculty and staff to be more effective; 2) help the UW manage risks and resources; and 3) encourage creativity, collaboration and the UW's competitiveness. UW-IT's plan for 2014 comes at a time when technical, political and economic forces continue to drive fundamental changes in the academy, and in the information systems needed to support it. These changes will affect every person connected to the University of Washington.

To fulfill its mission, UW-IT must anticipate what is coming, and identify how best to leverage current and emerging technologies and resources to support the work of students, faculty and staff. It also must mitigate operational and opportunity risks while delivering services in the most efficient, cost-effective way. This plan provides responses to those needs by describing key drivers, service directions and strategic investment priorities to accomplish these aims. While it focuses on future initiatives, it is important to remember that the majority of UW-IT's budget goes to sustaining current services, i.e., "keeping the trains running."

IT plans have a short shelf-life. They should be considered snapshots suitable for fueling the continuing University-wide discussion of critical information technology goals and priorities. They must therefore also be living documents—requiring frequent adjustment in response to emerging technologies and evolving University needs.

2. Strategic Framework for IT at the UW

Context	➤ **Discovery** is at the heart of our University 　　➤ **Collaboration** is at the heart of discovery and learning 　　　　➤ **IT** is at the heart of collaboration
Vision	Our community has safe and simple access to information services across time, space, device and organizational boundaries. Our organization is a trusted, sought-after partner, passionate about using IT to improve the UW, via responsive systems, processes and advice.
Mission	1. **Enable students, faculty and staff to be more effective** 　• Tear down the walls (barriers to collaboration and productivity) 　• Build bridges (among disparate systems and communities) 2. **Help UW manage risks and resources** 　• Provide efficient IT services and excellent counsel 　• Prevent or prepare for and mitigate adverse incidents 3. **Encourage collaboration, creativity and UW's competitiveness** 　• Anticipate future IT needs; foster innovation, transformation
Drivers	Collaboration, Mobility, Consumerization, Cloud, Personalization, Big Data
Goals	1. **Provide Access to Excellent Infrastructure** 2. **Enhance Collaboration** 3. **Enable Innovative Teaching and Learning** 4. **Support World-Class Research** 5. **Modernize Information and Business Systems** 6. **Reduce Enterprise Risk** (privacy, security, continuity, compliance) 7. **Better IT Management** (operational efficiency, transparency)
Foundation	**Guiding Principles** 　• Value integrity, collaboration, creativity, service, accountability, respect 　• Continuous improvement, agility, transparency, data-driven decisions **Approach** 　• Engage: Listen, anticipate, communicate, execute, evaluate 　• Focus on service management 　• Focus on cost management and transparency 　• Anticipate future needs / trends (strategic pre-positioning of the UW)
Assessment	Key Performance Indicators (e.g., customer satisfaction, availability, cost and trends)

3. Drivers and Themes

An endless number of IT projects could improve the UW. The most difficult challenge in IT management is prioritization and resource allocation. Choices must be made in partnership with campus, balancing investment in new capabilities with operation and renewal of core services. In this section, key drivers and themes are identified that shape these choices.

Drivers *are those forces that shape the IT landscape either by enabling new capabilities, redefining norms and expectations, or limiting choices (constraints).*

The strategic framework highlights six service drivers: collaboration, mobility, BYOD, cloud, personalization and big data. These factors require particular focus over the next three years, but other drivers define baseline expectations for all IT services such as easy/simple, safe, open, global, green, sustainable, compliant. They shape our core design principles, but some define aspirational goals (e.g., "safe," which is never fully achievable).

Service drivers do not necessarily translate directly to specific initiatives or investment priorities; rather, they influence the approach taken to achieving different service goals. For example, it is not a goal to run all services in the cloud; it is a goal to operate as efficiently as possible and free up scarce internal capacity by leveraging cloud services where appropriate. Another example: "Bring Your Own Device" is not a goal, it is a reality that impacts many aspects of IT service delivery, from security to cross-platform collaboration.

Drivers for improving operations (the way we do business) are distinct from those shaping services. They include organizational imperatives of: efficiency, agility, forward-thinking, transparency, data-driven decisions, partnership, and a non-entitled, results-oriented culture. For the next three years, the primary organizational theme is: improve operational efficiency through advanced IT Service Management (ITSM) tools such as UW Connect (ServiceNow).

Current themes—areas of emphasis for services and operational improvement
- Enhancing the student experience
- Improving research support
- Cloud-ready design
- Mobile device focus
- Risk management: disaster preparation and reducing compliance exposure

- Reducing operational costs to create capacity for transformational projects
- Campus IT collaboration and governance; prioritization with zero-based budgeting

Deferred priorities—examples of areas where resource constraints limit progress
- Cross-platform collaboration
- Establishing technical procurement standards for purchasing
- Leveraging social media for improving IT service delivery
- Increased transparency via less restrictive document permissions
- Digital lifestyle analytics: Extracting important information from endless IT complexity

4. Investment Priority Overview

Each "X" represents a fiscal year quarter in which the project is active. This does not include all initiatives, nor ongoing operations, only the top UW-IT investment priorities for FY 2014–2016. Details on the major FY 2014 initiatives can be found in Appendix A.

CATEGORY	INITIATIVE	FY 2014 By Quarter				FY 2015 By Quarter				FY 2016 By Quarter			
❶ Infrastructure	1. Science network upgrades	X	X	X	X	X	X						
	2. Wi-Fi expansion & refresh	X	X	X	X		X		X		X		X
	3. Cloud IaaS* (Azure, AWS)	X				X	X	X	X	X			
	4. TIER (identity mgt)					X	X	X	X	X	X		
	5. Workflow, REST, Events	X	X	X	X	X	X	X	X	X	X	X	X
❷ Collaboration	1. Office 365	X	X	X	X	X							
	2. SharePoint							X	X	X	X		
	3. Unified communications	X	X	X	X								
	4. Deskmail retirement				X	X	X	X	X	X	X		
❸ Teaching and Learning	1. MyPlan/Academic Explorer	X	X	X	X	X	X	X	X				
	2. MyUW	X	X	X	X	X	X			X	X		
	3. Curriculum management	X	X	X	X	X	X	X	X				
	4. CTC2UW – Gates Foundation	X	X	X	X	X	X	X	X	X	X		
	5. Admissions modernization	X	X	X	X	X	X	X	X				
❹ Research	1. CyberInfrastructure tools					X	X	X	X	X	X	X	X
	2. Enhanced lolo services						X	X	X	X	X	X	X
	3. Hyak Phase III							X	X				
❺ Business Systems	1. HR/Payroll Modernization	X	X	X	X	X	X	X	X	X	X	X	
	2. EDMS	X	X	X	X	X	X	X	X				
	3. Business intelligence	X	X	X	X								
	4. Mainframe refresh					X	X	X	X				
	5. Workstation / BYOD	X	X	X	X	X	X	X	X	X	X	X	X
	6. IM PaaS** refresh (SQL + IIS)		X	X	X	X	X	X	X	X	X		
	7. Procure to Pay	X	X	X	X	X	X	X	X				
❻ Enterprise Risk	1. Privacy and security				X	X	X	X	X	X	X	X	X
	2. Business continuity	X	X	X	X	X	X	X	X	X	X		
	3. Monitoring and logging	X	X	X	X	X	X						
❼ IT Management (Operational Efficiency)	1. IT Service Mgt (UW Connect)	X	X	X	X	X	X	X	X				
	2. Software dev. environments	X	X			X	X						
	3. Financial Mgt (Dynamics)	X	X	X	X	X	X	X	X				
	4. IT Business Mgt (Apptio)					X	X						

*Infrastructure as a Service   **Platform as a Service

5. Strategic Goals

For each strategic goal category, this section will identify key services, a future vision, and how the relevant drivers impact the plan for achieving that goal. This overview includes only a subset of UW-IT's services; see the UW-IT Service Catalog for a complete list.

Appendix A provides details on major FY 2014 efforts (some of which will continue beyond FY 2014), identifying specific **objectives**, **initiatives** and **benefits** for each strategic goal.

The initiatives listed in **Appendix A** typically have a one- to two-year horizon. Clearly there are major changes happening in IT services that have a longer time horizon. However, many of these strategic shifts have to do with **how** IT services will be provisioned, more than the kind of services. For example, in the past, central IT organizations have developed key infrastructure and application technologies (and often contributed them to the community). Now, consumer-oriented "Do It Yourself" (DIY) IT, with pervasive and inexpensive cloud services, is shifting the role of central IT from "builder" to "broker." Thus, consulting and curation, along with vendor relationship management will undoubtedly become core services and a key value-add for UW-IT in the future. However, this does not mark the end of software engineering, system architecture or administration as essential IT skill sets. There are three areas where these skills will remain crucial:

- System integration, both across different vendor offerings and between cloud systems and UW enterprise services such as identity management
- Tools, to leverage our major platforms and services to provide additional value
- Advanced transformative applications, where there is no marketplace alternative, e.g., MyPlan

Longer term, UW-IT (indeed, all IT service-providing organizations) must respond to these challenges:

- Anticipating future needs in the age of accelerating change
- Delivering value in the age of DIY computing
- Discontinuing legacy services in a high-inertia culture
- Maintaining excellence in the age of adequacy and austerity, especially excellent technical staff as IT units do less building and more brokering and consulting

This last point has policy implications for funding, as consulting services often fail in universities when offered as fully costed self-sustaining operations. It will be up to UW-IT to make the case that its expertise provides sufficient value-add to the UW that

access to it should be broadly available as a common good. Finally, it's worth noting that all existing and new services must be backed up with documentation, a business continuity plan and a support organization—available 24x7 for critical services.

Goal 1: Provide Access to Excellent Infrastructure

Make sure UW has highly functional, reliable and invisible IT infrastructure that just works—and doesn't get in the way.

1a. Computing Infrastructure
Primary services:
- Managed servers—for departments, researchers and many applications
- Personal, group and infrastructure file storage and backup
- Data center co-location
- Identity and access management
- Enterprise middleware for Web services, events and workflow
- Software development tools
- Network management
- Email routing and delivery
- Monitoring and logging

Future vision:
- Consolidated computing infrastructure across the UW
- Improved sustainability and economy achieved via best practices, e.g., dense computing
- Economies of scale have led to improved utilization
- "Invisible" hybrid cloud solutions
- Simplified user identity management and improved account security
- Enterprise Architecture (EA) "bricks" exist that allow for fast system integrations
- Support for current BYOD platforms (multiple OS, browsers, apps)

Applicable drivers:
- *Cloud:* Broker cloud Infrastructure as a Service (IaaS) offerings transparently within UW-IT services, so customers do not have to learn specific cloud features, and different clouds can be easily leveraged for other service areas (research, collaboration, business, teaching and learning, etc.)
- *Consumerization:* Leverage vendor-provided tools and technologies whenever possible so our staff can focus on solving UW-specific needs

- *Big Data*: Need to design and provide solutions that scale for next generation data requirements

1b. Communication Infrastructure

Primary services:
- Data networking
- Telephony infrastructure

Future vision:
- Improved reach and capacity: More coverage across the UW for data networks (especially mobile data), and more bandwidth where it's needed for big data
- Unified Communications (UC): voice, data and video services have been integrated across desktop and mobile devices by leveraging commercial tools such as Microsoft Lync and Google Hangouts
- Mobility services have been enhanced through improvements to wireless technologies, including customized access to services relevant to who you are and where you are (e.g., access to local printers, displays, personal and group resources, etc.)
- Software Defined Networking (SDN) has enhanced research networking capability by allowing for customized, high-capacity data flows

Applicable drivers:
- *Cloud:* Leverage Software as a Service (SaaS) tools wherever cost efficiencies and/or service enhancements can be achieved. Increased reliance on cloud services by our users increases use and dependence on the data network.
- *Collaboration:* Unified Communications strategies provide more options for one-to-one and one-to-many interactions.
- *Consumerization:* This demand-side driver directly impacts network provisioning: more and faster devices = more network resources (i.e., reach and capacity) required.
- *Mobility:* UC applications and increased reach of wireless/cell coverage will support increased mobility for our users.
- *Big Data:* General campus backbone capacity, as well as specific network design decisions and architectures, are all driven by the need to support massive data flows for our researchers and their collaborators.

Goal 2: Enhance Collaboration

Provide excellent productivity tools, and enable easy, secure collaboration with partners at the UW and beyond.

Primary services:
- Google Apps
- Office 365
- SharePoint
- Shared Web hosting (e.g., students.washington.edu)
- Official UW Web site (www.washington.edu)

Future vision:
- The UW is positioned to easily implement emerging technologies by moving from on-premise to a combination of on-premise and cloud-based solutions
- Strong partnerships with faculty and researchers across the UW result in tools that meet their needs and support teaching and learning

Applicable drivers:
- *Cloud:* Moving from aging on-premise collaboration tools to cloud-based solutions that are scalable and reliable. These tools will provide file sharing, presence, chat and Web conferencing capabilities.
- *Collaboration:* Implementing state-of-the-art tools that increase organizational efficiency, promote collaboration and mitigate operational risk. Cloud-based collaboration tools position the UW to take advantage of emerging technologies.
- *Big Data:* Consulting with top UW researchers across disciplines to determine emerging high-scale data storage and analysis needs, then using these findings to guide strategic technology decisions.

Goal 3: Enable Innovative Teaching and Learning

Provide technology to support and improve the teaching and learning experience.

Primary services:
- MyPlan
- Canvas Learning Management System (LMS)
- Lecture capture
- MyUW
- Notify.UW

Future vision:
- Services have been integrated to form ecosystems
- Faculty and administration have advanced analytics to improve teaching and learning
- Software as a Service (SaaS) is the default
- Our teaching and learning tools span all instructional modalities

Applicable drivers:
- *Cloud:* Identifying and incorporating SaaS tools that employ the cloud
- *Collaboration:* Common toolsets that allow co-creating and sharing content
- *Mobility:* Incorporating responsive design to provide an improved mobile user experience
- *Personalization:* Including information personalization in MyPlan and MyUW
- *Big Data:* Acquiring data and analyzing it to inform resource allocation decisions

Goal 4: Support World-Class Research

Support UW research with up-to-date tools and resources.

Primary services:
- High performance computing cluster
- High performance file system for collaboration
- Long-term data archiving system
- SQLShare
- Consulting for data pipelines and research workflows solutions

Future vision:
- The UW research community is empowered by relevant, shared, cutting-edge technologies, services and support
- A core cyberinfrastructure toolset exists that is well-supported and can be used across many different disciplines

Applicable drivers:
- *Collaboration:* Common toolsets that allow users to share information, content and expertise
- *Big Data:* More research across multiple disciplines are gathering and sharing (potentially large) data sets

Goal 5: Modernize Information and Business Systems

Provide modern, flexible and integrated business information systems to support a complex, global research institution and access to better business information for planning and analysis.

Primary services:
- Administrative applications in support of enterprise HR/Payroll, Finance, Facilities and UW Advancement business processes
- Enterprise Information Management services, including data warehouse and business intelligence solutions, business process automation tools and data integration to support critical business systems

Future vision:
- The UW has modern, flexible and integrated business information systems, able to support a complex, global research institution
- Faculty and staff have access to better business information for planning, forecasting and analysis

Applicable drivers:
- *Consumerization, mobility* raise end-user expectations for service levels and agility
- *Personalization* enables ease of use and self-service, which increases efficiency
- *Cloud* creates opportunities (scalability, flexibility, business continuity) and challenges (data security) for infrastructure-supporting business systems
- *Big Data* platforms and management services enable sophisticated analytics

Goal 6: Reduce Enterprise Risk

Support UW's risk management objectives by promoting privacy, security, business continuity and compliance.

6a. Privacy and Security
Primary services:
- Promote a University-wide culture of security and privacy
- Develop and maintain University-wide information security and privacy policies, standards and guidelines
- Provide the University with security and privacy education and awareness training
- Provide major organizational areas of the University with risk mitigation resources and consulting to develop security plans

- Provide the University community with information security and privacy incident or breach reporting, forensics and management
- Promote appropriate University-wide risk transfer strategies and liability mitigation related to data involved with interactive technology service deployments, vendor or partner contracts/agreements
- Maintain appropriate University governance of security and privacy
- Conduct regular security risk management program review and evaluation
- Provide timely and useful intelligence and risk assessments of evolving cyber-threats for distributed computing
- Maintain the University's ability to obtain insurance underwriting for cyber-security risks

Future vision:
- High quality and effective situational awareness and consulting services are available that inform University decision makers about cyber-based threats, privacy issues and risks associated with their critical assets so that they can prioritize risk mitigation activities for their organizational areas
- Improve detection and management of information security and privacy incidents in order to minimize the impact of such incidents on organizational areas, the UW and the people it serves
- Staff are actively involved in the global information security community so that the UW benefits from the most useful, timely and valuable industry intelligence and experience

Applicable drivers:
- Efforts in security and privacy are heavily shaped by all of the drivers identified on page 4. The Office of the Chief Information Security Officer (CISO) takes a strategic approach to mitigating risks and managing unintended adverse consequences associated with the evolving technology environment and how people use their technology interactively with UW information assets. Initiatives are focused on addressing the multitude of security and privacy requests, challenges and opportunities for the University.

6b. Business Continuity
Primary service:
- Disaster preparedness and business continuity services for critical UW administrative IT systems

Future vision:

- The capability exists for technical systems supporting critical UW administrative capabilities to be recoverable and resumable following an unexpected event affecting the main campus IT systems, ranging from local campus and/or data center disruptions to large-scale disasters (e.g., earthquake). This, in part, will be accomplished by implementing some of those critical systems and supporting network and infrastructure in different geographic locations outside of Western Washington. These geographically redundant locations include:
    - A UW-managed data center in Eastern Washington
    - Data centers operated by cloud service providers
- New business processes have been implemented to support critical administrative systems to permit them to continue and/or resume operations at geographically redundant locations.
- Training and assistance in developing processes for transition and major incident management for the affected administrative services teams has been provided to administrative units across the UW in order for them to make effective use of these new, geographically redundant technical systems.
- Throughout the project, value is brought to the institution through incremental improvement in the ability to perform "ad hoc" recovery of these critical systems.

Applicable drivers:

- Business continuity, while not directly driven by any of the key strategic drivers, is critical for two of the "essential" service drivers: the *expectation of reliability* and *sustainability*
- Without the ability to resurrect certain critical business systems, the primary missions of the University could not continue to be served following a major disaster, and the University would not be able to operate

Goal 7: Better IT Management

Improve the operational efficiency and transparency of UW-IT, and potentially other IT organizations at the UW. **Note**: Unlike the previous six goals, this one is internally focused; UW-IT expects in the future to offer services to the University in this area.

There are a variety of organizational "continuous improvement" initiatives underway at any given time, but for the immediate future, our primary operational investment priority is IT Service Management.

Primary activities:

- IT Service Management (ITSM) tools and processes to support all UW-IT services
- IT Business Management tools and processes to support internal operations

Future vision:

- Efficient processes are in place, providing maximum organizational capacity for transformational initiatives
- Uniform service delivery to users across all University units
- A common governance model is used to prioritize services and resources
- Internal IT Service Management is at a high level of capability and maturity

Applicable drivers:

- Our ITSM activities are in direct response to the need for more *efficiency* and *transparency*. Reducing the number of service management tools we support by migrating to a cloud-based solution, coupled with implementing consistent processes across UW-IT teams, will increase *efficiency* and *organizational capacity*. The reporting and dashboard capabilities available in the UW Connect (ServiceNow) application will increase *transparency* to campus.

Appendix A: FY 2014 Objectives, Initiatives and Benefits

Note: Many of the initiatives listed below will continue beyond FY 2014.

Goal 1: Provide Access to Excellent Infrastructure

Make sure UW has highly functional, reliable and invisible IT infrastructure that just works—and doesn't get in the way.

1a. Computing Infrastructure

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Consolidate IT server infrastructure across the UW	Deploy "Standard Hosted Servers" service Deploy Net+ Azure Self-Managed Tenant service Add Amazon Web Services via NET+ offering	Lower-cost server solution Enables faster adoption and consolidation Encourages common expertise across IT groups
2. Improve computing infrastructure density	Server and storage system replacements (end of life) redesigned for Cloud IaaS Adopt NET+ Azure IaaS Services for UW-IT infrastructure where appropriate Report per-rack power utilization for all data center customers	Maximize investment in data center facilities Avoid expansion of physical data centers, lowering both capital and operating costs
3. Increase utilization of robotic tape silos	Scale backup services for petabyte (PB) and terabyte (TB) use cases Review system for HIPAA compliance with the CISO office	Large-scale (PB) customers help reduce cost to existing medium-scale (TB) customers Reduce duplication of costly tape infrastructure on campus Security review enables

		service for use by large number of clients
4. Simplify user identity management and improve account security	Explore options for multi-factor and federated authentications, social identity, TIER (Trust and Identity in Education and Research) Develop password policies Explore scalable privacy solutions In-Common Silver Assurance	Through easy provisioning of identity services, better support for virtual organizations, a rapidly growing segment of our research portfolio Updated password policies will reduce the likelihood of stolen accounts
5. Increase consulting and outreach with departmental IT	Focus more staff on helping to migrate departmental IT toward common solutions	Faster rate of consolidation of infrastructure and expertise Discover unique needs to help shape future services
6. Build standard Enterprise Architecture software designs that are reusable	Pilot scalable, event-driven message bus plus instant search architecture as an integration platform Pilot Reusable Workflow API Develop Enterprise Business Services to support EDMS five-year goals	Faster and more reliable integrations of different systems (on-premise and off-premise, buy and build) Faster data updates between systems

1b. Communication Infrastructure

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Increase general campus network capacity	Upgrade campus backbone from 10G to 40G	Staying ahead of the ever-increasing demand curve of more devices in more places using more bandwidth Allowing the network to be scalable as demand grows
2. Increase network capacity for specific "big science" networks	Deploy research network overlay (using virtualized data flows) on 40G campus and 100G interconnections to national high-speed research networks	Allow researchers and scientists to move massive data sets, remotely manage high-capacity instruments and sensors, etc., in real time, without traversing normal campus "firewalled" data paths
3. Increase UW network capacity to national research networks like Internet2	Upgrade paths from UW to Pacific Northwest Gigapop (PNWGP) from 20G to 100G	Allow higher capacity data flows between UW and our peer institutions to support collaborative big data science projects
4. Increase reach and capacity of wireless networks	Finish final year of current wireless refresh project, and continue to update underlying wireless infrastructure to remain current with emerging technology advances	Increased coverage for mobile devices across the UW Respond to high growth in number of devices Accommodate higher bandwidth demands for streaming video applications Allow for customized wireless services based upon who and where you are
5. Create Software Defined Network (SDN) testbed	Deploy OpenFlow switches in selected portions of the campus network	Explore whether the customization of network flows for large data users can enhance discovery and learning

Goal 2: Enhance Collaboration

Provide excellent productivity tools, and enable easy, secure collaboration with partners at the UW and beyond.

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Expand the suite of state-of-the-art collaboration tools that meet performance expectations of students, faculty and staff	Migrate existing users of UW Exchange Local, Live@edu and Deskmail to UW Exchange Make Microsoft's OneDrive for Business (formerly SkyDrive Pro), SharePoint Online and Lync Online products of the Office 365 suite available to UW students, faculty and staff Improve cross-browser and mobile experience of UW SharePoint users by migrating from SharePoint 2010 to 2013	Lower barriers to collaboration Increased organizational efficiency Lower cost and better redundancy
2. Increase the UW's capability to adopt technologies from vendors, providing agility to respond to new IT demands from the UW community	Continued evaluation and adoption of applications into Google Apps Full deployment to Office 365 suite of tools Evaluation of interoperability issues between Google Apps and Office 365	Mitigates operational risk and increases business continuity Provides new, easily accessible, cloud-based services for use by UW students, faculty, staff and alumni
3. Make available collaboration and storage solutions with HIPAA compliance	Microsoft's OneDrive for Business/SharePoint Online and Lync Online offer a HIPAA-compliant hosted service to customers in the School of Medicine and UW Medicine	Mitigates compliance and financial risk by providing the UW (specifically, UW Medicine) with HIPAA-compliant storage By providing a HIPAA-compliant service, the

	The SharePoint Enhancement project will deliver a new HIPAA-compatible SharePoint 2013 farm with the full Enterprise feature set	SharePoint Enhancement project will greatly decrease the risk and cost associated with separate units deploying their own SharePoint farms
4. Restructure Web publishing and Web hosting services to use shared infrastructure and cloud-ready technology (Platform as a Service, or PaaS)	Investigate RedHat OpenShift to provide PaaS LAMP Web stack Align www.washington.edu, {students, faculty, depts, staff}.washington.edu services to use same technology	Consolidating platforms helps lower costs and consolidate IT variance across campus Aligning with cloud PaaS products provides future growth and geographical redundancy (GR) capabilities that won't require additional UW data center resources
6. Promote Unified Communications services at the desktop	Continue with rollout of the final phase of our Unified Communications plan, adding specific services to desktop phone and workstations, laptops and mobile devices	Increase collaboration opportunities via the convergence of voice, video and data messaging for our faculty and staff

Goal 3: Enable Innovative Teaching and Learning

Provide technology to support and improve the teaching and learning experience.

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Integrate academic planning and registration	Adviser-created sample degree plans made available in MyPlan Integration of MyPlan to existing registration system Develop analytics for future course demand using MyPlan	Enhanced academic planning and registration experience for students Data on future course demand will inform institutional planning at the department and college level

2. Rebuild and personalization of MyUW	Incorporate personalization of information as part of the MyUW rebuild Incorporate responsive design in rebuild to provide a better mobile experience	Enhanced, personalized user experience Improved user experience on different devices
3. Canvas as the dominant Learning Management System (LMS)	Improve the features available in Canvas to drive adoption (i.e., the "approved app" initiative) Improve the Canvas Gradebook for use with the decimal grading system	Evolution toward a single LMS will result in a consistent experience for both students and faculty Retirement of legacy systems that duplicate Canvas functionality
4. Increase use of lecture capture	Identification and adoption of a single lecture capture system (currently distributed between Tegrity and Coursecasting) Consolidation of lecture capture services and improved support	Faculty will have a single lecture capture technology to learn Improved user support at a reduced cost
5. Provide data on course demand to academic units	Data regarding course demand is obtained from Notify.UW and made available to academic units to assist in meeting course demand	Data-driven decisions on resource allocation to meet demand
6. Initiate digitalization of course and program information (Curriculum Management)	Digitalization of course information with management of data by the Office of the Registrar Pilot online curriculum review and approval	Improved management of curricular assets Development of a curriculum review process that can be deployed across all three UW campuses

Goal 4: Support World-Class Research

Support UW research with up-to-date tools and resources.

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Identify research-relevant technologies and support needs	Obtain data regarding the needs of UW researchers through surveys, focus groups and interviews, following a process similar to the 2007 "PI Project" Update the technology and user experience of Catalyst WebQ, an application that allows users to easily construct surveys and quizzes, which is widely used throughout the UW's academic and research activities	User needs obtained from this project will guide the development of technologies that support the emerging needs of UW researchers, particularly in the area of high-scale data storage and analysis. The WebQ project will impact all students, faculty, staff, researchers and clinicians at the UW who use WebQ to gather data (including HIPAA and Human Subjects data) by enabling cross-device usage, data interoperability, and a user experience that minimizes error and maximizes usage and efficiency for everyone *(For a sense of scale, 6,697 users created 34,610 WebQ surveys in 2012 that gathered results from 1.28 million participants)*
2. Expand current cyberinfrastructure data processing tools	Big data tools in Hyak (Hadoop) Expand and enhance the SQLShare prototype—the "database as a service" that aims to remove obstacles to using relational databases: installation, configuration, schema design, tuning, data ingest and application design—available free to UW researchers	Standard deployment connected to high-speed computing and storage solutions SQLShare addresses strategic risks by enabling researchers to use and interact with their data in ways they formerly could not, without hiring expensive database administrators, and for the same reason raises

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
	Increase free/low-cost technical support to help with adoption of tools	institutional standing
3. Scale-up tape-based archive and backup services for petabyte (PB) use cases	Refactor tape storage system to maximize use of slots and tapes Leverage High Speed Research Network for large data transfers	Enables UW PIs to be more competitive and quickly deploy big data projects

Goal 5: Modernize Information and Business Systems

Provide modern, flexible and integrated business information systems to support a complex, global research institution and access to better business information for planning and analysis.

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Continue HR/Payroll Modernization project	Complete HR/Payroll procurement effort Start HR/Payroll implementation effort Support HR/Payroll data integrations with other systems (Financial, et. al.)	Deliver advanced functionality, with best cost and risk balance for the UW Provide integrated data needed to support other business processes
2. Implement Enterprise Document Management System (EDMS) within the Enterprise Business Services Framework	Enterprise Business Services Infrastructure/Framework setup EDMS pilot deployments Define Enterprise Business Services as a program to support the EDMS five-year goals	Shared infrastructure reduces costs Pilots help refine service goals for future implementations Well-defined services improve customer satisfaction and reduce support costs

3. Refactor of Financial Systems Modernization roadmap to leverage opportunities of HR/P Modernization efforts	Begin Financial Systems discovery phase in winter 2014 Curtail incremental improvement efforts to focus on replacement rather than incremental modernization	Revised strategy and timelines improve planning and evaluation of options Better value for dollars spent on IT investment Shorter timeline for realizing major business value
4. Update and integrate Enterprise Data Warehouse	Add new data to support key enterprise metrics Build out modern and scalable infrastructure Develop flexible information architecture for fast data delivery	New data provides improved cross-domain analysis of business operations Improved infrastructure reduces risks and supports increased demand Flexible architecture improves development velocity
5. Provide faster, easier self-service access to data through new business intelligence capabilities and tools	Continue rollout of Tableau at UW and produce more institutional dashboards, reports and cubes (UW Profiles expansion) Provide intuitive portals, Web sites and trainings for data access and use	New data visualization capabilities provide intuitive insights into business processes Self-service tools and training increase adoption rate of analytics
6. Enhance enterprise database platforms and tools in support of data integration	Consolidate and modernize database platforms Investigate new tools to manage data definitions and improve integration capabilities	Improved platforms reduce risk and costs Tools that speed up classification and understanding of data improve ability to share data safely and reliably
7. Replace existing legacy procurement system in the Procure to Pay initiative	Complete implementation of Ariba e-procurement and retire PAS procurement	Consolidation onto new modern system is more efficient and cost effective, and enables better spend management

Goal 6: Reduce Enterprise Risk

Support UW's risk management objectives by promoting privacy, security, business continuity and compliance.

6a. Privacy and Security

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Strengthen risk transfer position	Support annual cyber-security insurance renewal Promote continued adoption of official approved online "Privacy Statement" and "Terms of Use" Promote use of "Data Security Agreement" in vendor contract negotiations	Reduced overall financial risk Reduce risk and enhance trust in UW Web-based services Reduce overall financial risk
2. Support UW's compliance goals while optimizing use of limited resources	Conduct security program review and evaluation	Compliance to Washington State RCW and maintain optimal targeting of program resources
3. Education	Expand online training Host information forums Information sharing with subject matter experts and data custodians	Reduce risk by increased awareness and training
4. Enhance security and privacy incident detection capabilities	Develop additional external threat information sources Improve internal detection methods and tools	Increased awareness of threat landscape allows for more proactive incident detection

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
5. Develop situational awareness	Improve network visibility and ingress traffic analysis capabilities Provide tools for understanding and managing risks	Create timely risk information to aid key IT stakeholders in defending their assets

6b. Business Continuity

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
Program Objective: Make all critical administrative applications operated by UW-IT: redundant, geographically diverse and recoverable, thereby maintaining capabilities in the event of a 30-day loss of primary data centers on the main campus, or other major facilities within the Puget Sound seismic zone	Geographic Redundancy (GR) Program, a five-year project to be completed in yearly phases. Just past the mid-point of this project, the following initiatives have been completed: • Established geographically redundant data center in Eastern Washington • Established primary underlying infrastructure in new data center (i.e., networking and mainframe)	Following a major disaster, have the capability to resume critical administrative functions, such as health and safety, payroll, grants receivables, financial management, teaching and learning Although the full capability will not be established until the program is completed, the ongoing work does improve the capability to resume some critical administrative applications in an ad hoc fashion
1. Continue the establishment of geographic redundancy for critical business applications by implementing their primary IT systems (e.g., hardware, software) and related infrastructure services (e.g., network, middleware) in locations outside of Western Washington	Continue and complete planning and implementation of critical business applications into geographically redundant locations	Enhanced capability to resume critical business applications in the event of a disaster—due to the geographic redundancy of the IT systems and related infrastructure services, which increases the likelihood that at least some portion of the capabilities will continue to operate in a localized or regional disaster

2. Identify dependencies between all critical business applications and systems, related infrastructure services and business processes	Complete and document results of technical dependency analysis for all of the critical business applications, IT systems, related infrastructure services and business processes	Decrease the time to recover from disasters due to a more thorough understanding of critical business processes and underlying IT systems and infrastructure
3. Test fail-over capability of completed portions of the system	Continue and complete recovery and testing processes	Increased confidence in ability to recover from a disaster
4. Commence to "operationalize" the resumption of critical business capabilities	Write a charter to establish "Service Continuity Management" program to oversee planning, testing and maintenance efforts for disaster recovery	Increased likelihood of sustaining business resumption capability as technology and business processes evolve over time

Goal 7: Better IT Management

Improve operational efficiency and transparency of UW-IT.

Specific Objectives	Initiatives (to achieve objective)	Benefit to the UW
1. Implement IT Service Management based on the ITIL framework	Develop uniform processes across UW-IT for Incident Management and Request Fulfillment Assign and implement roles for processes and services to improve accountability, strategic alignment and delivery of services	UW customers experience a consistent and predictable response for incidents and requests Improved accountability and clarity for and increased transparency to UW-IT services and related processes
2. Replace existing home-grown applications with a robust SaaS ITSM application	Implement ServiceNow Service Automation Suite (branded as "UW Connect") and retire a set of existing applications	Increased transparency, customer satisfaction and improved service delivery

3. Establish a Service Management Governance framework to incorporate UW priorities into service planning	Support the IT Service Management Board Incorporate recommendations for new service requests and the retirement of low-value services	Increased influence to UW-IT to prioritize services and resources
4. Implement Technology Business Management practices to help manage business processes and prioritization of services, and to provide information for decision making	Expand and leverage capabilities of new Financial Management System (Microsoft Dynamics AX) Implement Apptio, a technology business management tool to help aggregate and display financial data	Provide transparency for total cost of services Allow for benchmarking and establishment of metrics Support enhanced budgeting process

Appendix B: Portfolio Prioritization Criteria

Importance

Strategic Value
1. Does the project improve the University's academic or research excellence?
2. Does it improve the UW's competitiveness by helping to attract the best students, faculty and staff or by increasing and diversifying funding?
3. Does it enhance interdisciplinary collaboration in research, instruction or other University efforts across organizational, regional or global boundaries?

Impact
1. Does this project improve the personal productivity or experience of students, faculty or staff (i.e., individual end user of system or service)?
2. Does it benefit a large number of UW students, faculty or staff?
3. Does it improve administrative efficiency or reduce overall administrative costs for the University (and not by shifting costs to units)?

Risk
1. Does this project help sustain and strengthen core IT operations, mitigate operational risk or ensure key services are resilient?
2. Does this project address compliance, financial or information security and privacy risk?

Likelihood of Success
1. Does UW-IT have resources available to support this project?
2. Does this project require minimal contributed resources from other divisions?
3. Does this project carry minimal risks related to an outside vendor or contractor?
4. Does this project have funding for implementation (not including UW-IT contributed effort)?
5. Does this project have funding to sustain this service on an ongoing basis (not including UW-IT contributed effort)?
6. Does this project align with UW-IT's enterprise architecture strategy?

Appendix C: Campus Engagement

A plan provides a sense of direction and priorities, but to remain relevant it must both evolve and be embraced—by the community UW-IT serves, and by the UW-IT staff charged with executing the plan. Accordingly, the internal and campus engagement that shaped this plan must be continued, so that it reflects current University needs and conditions, and so that UW-IT staff efforts are aligned with strategic priorities.

Specific steps to continue engagement with the UW community include reviewing investment plans with:
- UW-IT governance committees (IT Service Management Board, IT Service Investment Board and IT Strategy Board)
- The UW Computing Directors
- The University Board of Deans and Chancellors
- The University Board of Regents

UW-IT's commitment to engagement with the UW community about key goals, directions and initiatives is also reflected through the following:
- Providing ongoing updates through UW-IT's regular publications, including monthly *IT Connect News* and quarterly *UW-IT Insights*
- Providing information about IT services and resources through the UW-IT Service Catalog, and both the UW-IT and IT Connect websites
- Soliciting input through IT satisfaction and technology surveys
- Developing methods for continuous customer feedback
- Receiving guidance from faculty and staff through oversight committees and collaborations with other UW teaching and learning service groups

In addition, UW-IT is re-instituting campus computing support meetings in 2014, which will give departmental IT staff greater visibility and voice into these plans.

Within UW-IT, individual units are responsible for aligning their tactical service and operational plans in support of these overall goals and objectives. These tactical plans include specific timelines and resource estimates. For major services, periodic Service Assessments are prepared and reviewed. The UW-IT service owners and service managers are responsible for engaging with their specific constituencies and jointly developing roadmaps for their respective services.