# IT Strategy Board

May 13, 2013

Agenda

- Support for Research Computing
  - Overview
  - Discussion
- Kuali Student Review
  - Review Committee recommendation
  - Discussion
- Draft Criteria and Guidelines
  - IT Service Investment Board input
  - Ranking criteria and portfolio prioritization update

Support for Research Computing

Topics

- **Research Support Overview** (20 minutes)

    – Support Ecosystem

    – UW-IT Cyber-Infrastructure (CI)

    – UW-IT Concerns & Comparables

    – UW-IT Current Efforts

- **Strategy Discussion** (20 minutes)

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Research Support Ecosystem


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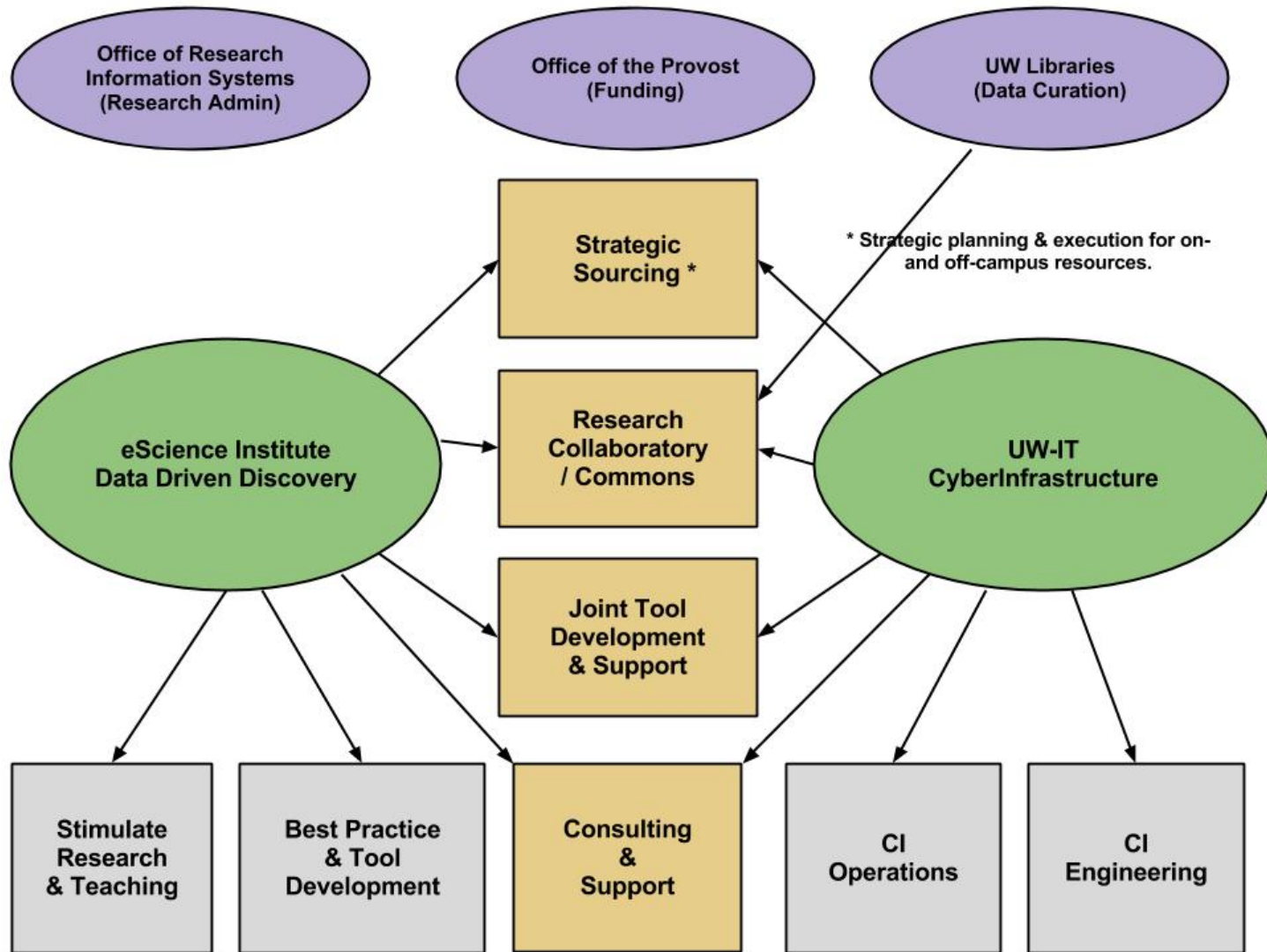
UW-IT Research Support Goals

- Be a broker and partner for research technology support

- Provide an alternative to managing CI locally

- Reduce friction
  - Improve "science/other-stuff" ratio
  - Increase the speed of science
 - Provide more time to investigate the data

UW-IT Cyber-Infrastructure

- Design, acquisition, deployment, & support
  - Networking & "Science DMZ"
  - High Performance Computing (HPC)
  - High Throughput Computing (HTC)
  - Big Data (velocity, variety, volume)
  - And the usual computing infrastructure, too
- Re-usable technology solutions
- Custom consulting solutions

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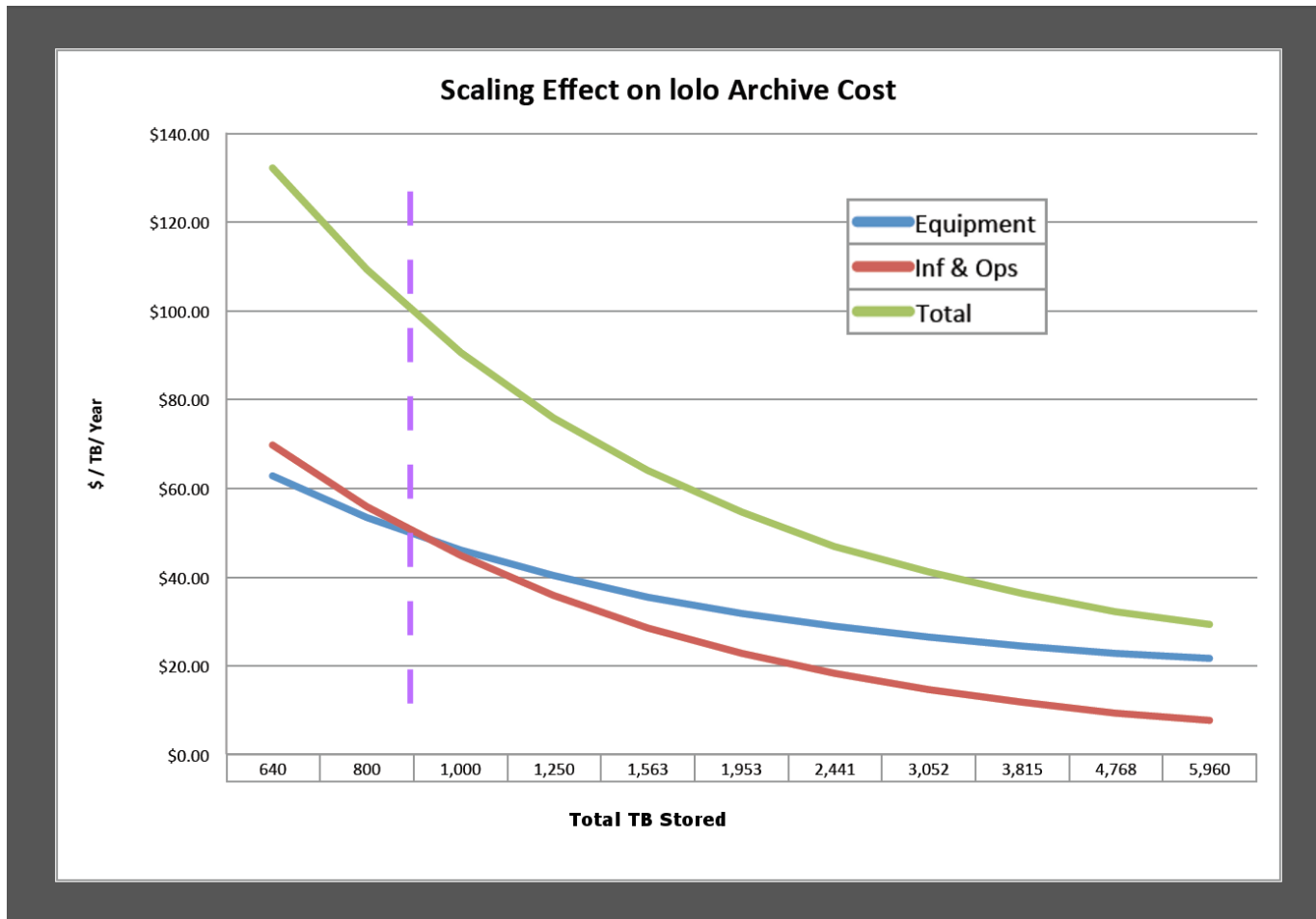
UW-IT Cyber-Infrastructure
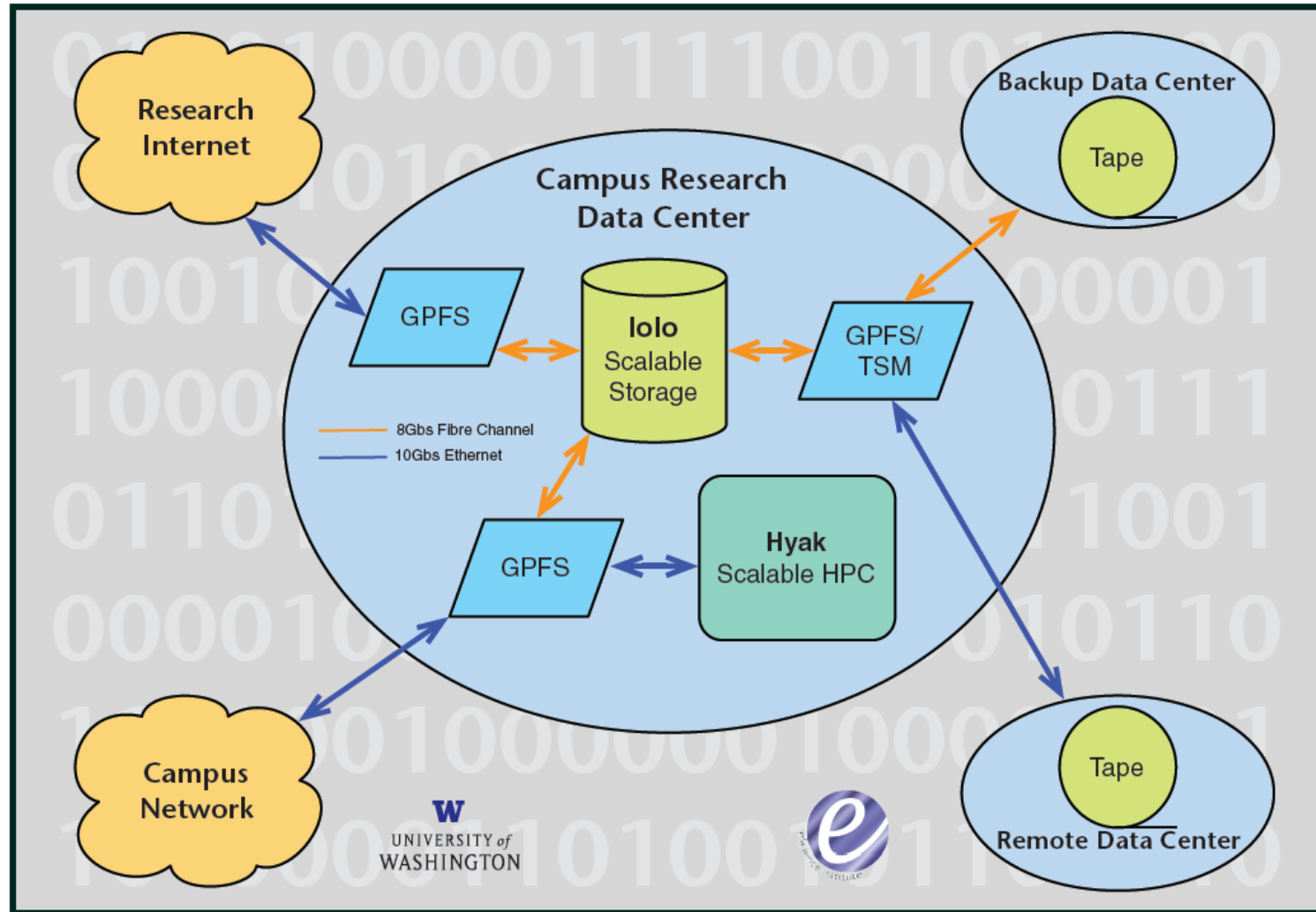
UW-IT Computing Infrastructure
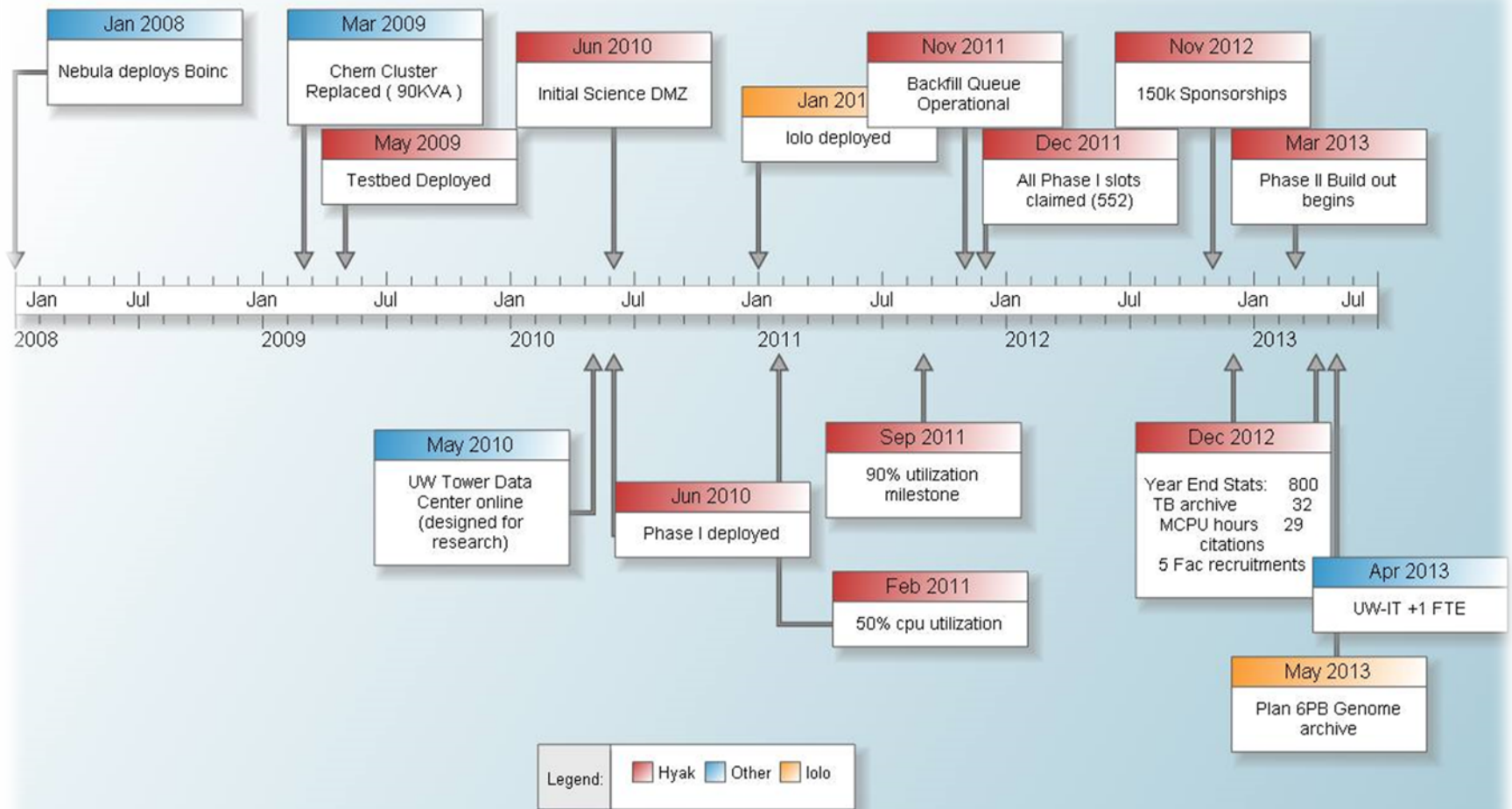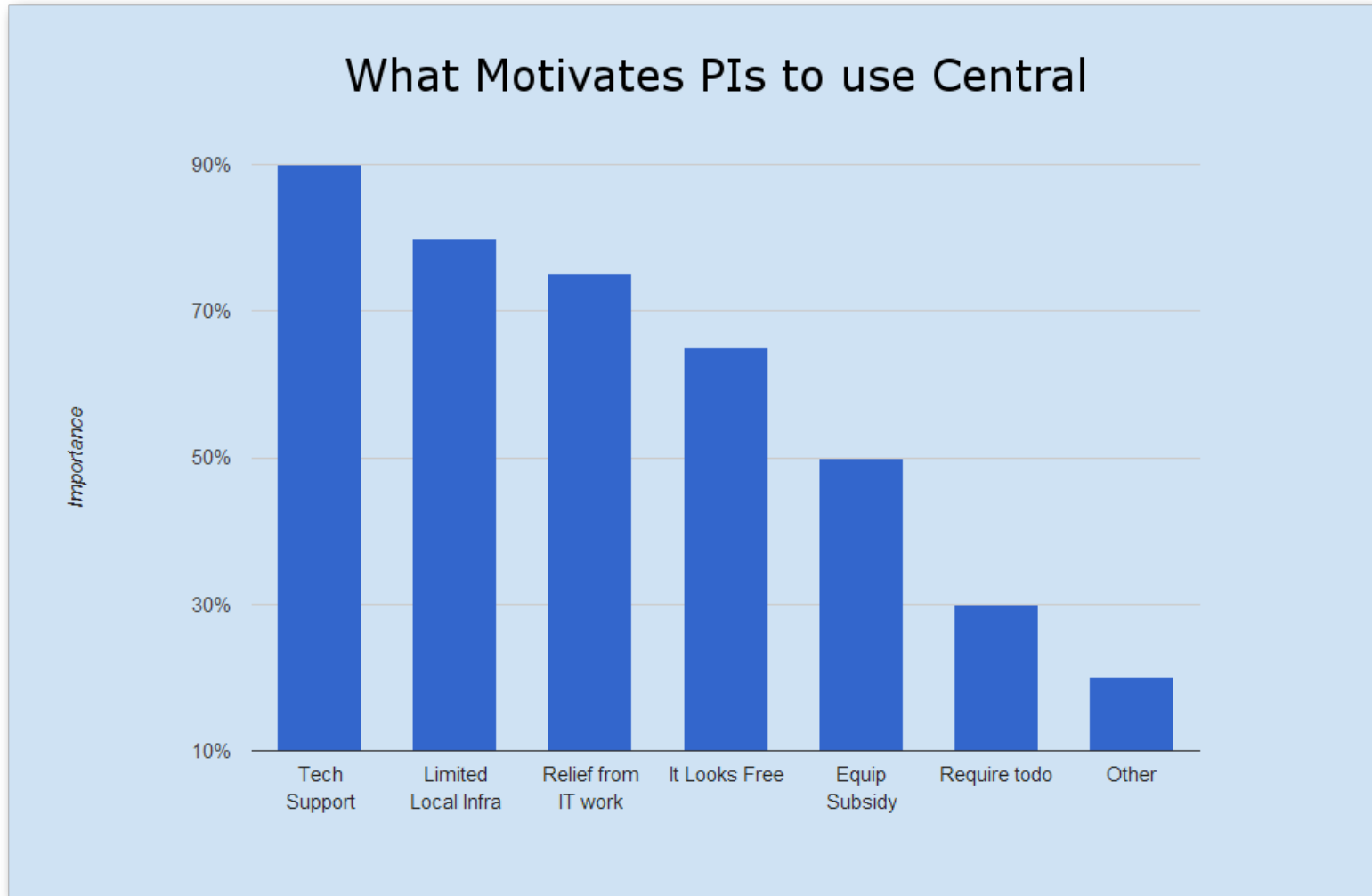
UW-IT CI Support Concerns

- Financial: Start-up cost, rates, sustainability
- Limited collaboration with peer Universities
- More tools needed, along with expertise to support
- Very limited support capacity for non-expert clients
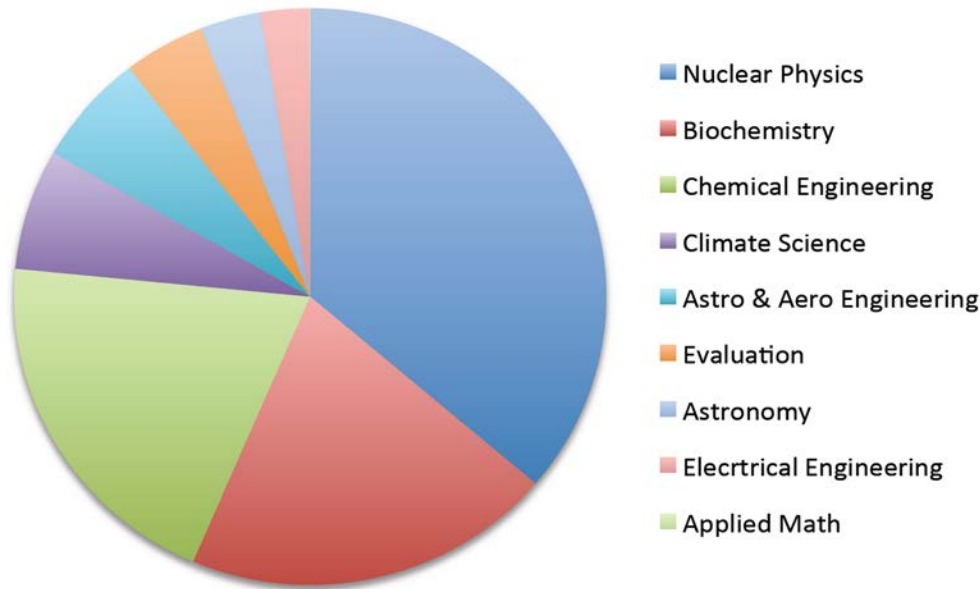
UW-IT Archive Storage Financial Example

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Support Resource Importance

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Top Few and Long Tail
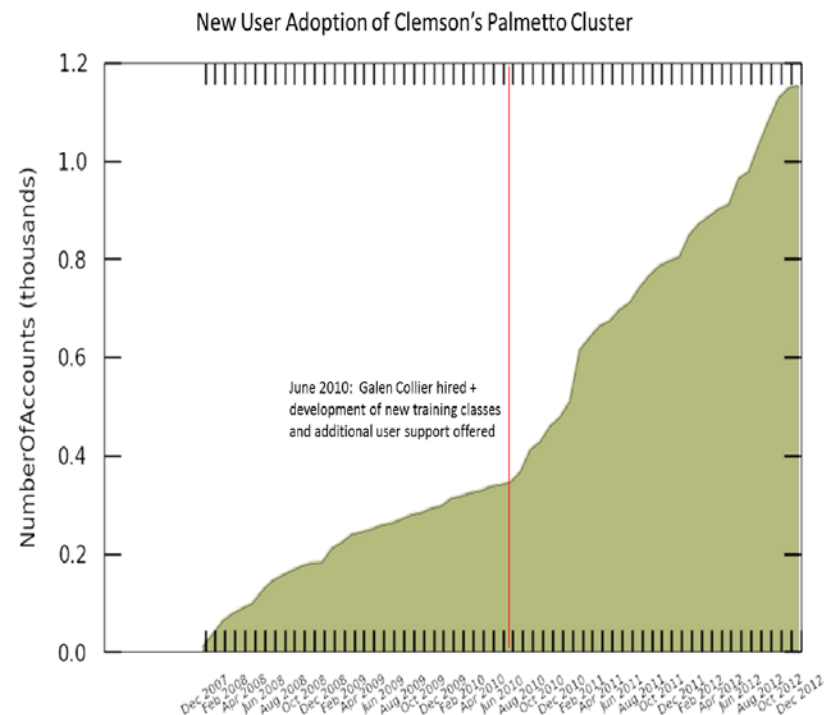
Comparable Institutions

EDUCAUSE Center for Applied Research, **Research Computing, The Enabling Role of Information Technology** (Research Report November 2012)

		Respondents by FTE Size					
		< 2,001	2001-4000	4001-8000	8001-15000	>15,000	Total
Total	Count	76	101	80	77	93	427
	% of Total	17.8%	23.7%	18.7%	18%	21.8%	100%

"There is room to improve the effectiveness of research computing practices and strategies. Even institutions of high research intensity did not rate any of their research computing practices/strategies any higher than 'somewhat effective' on average." (page 4)

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CI Staffing as Percentage
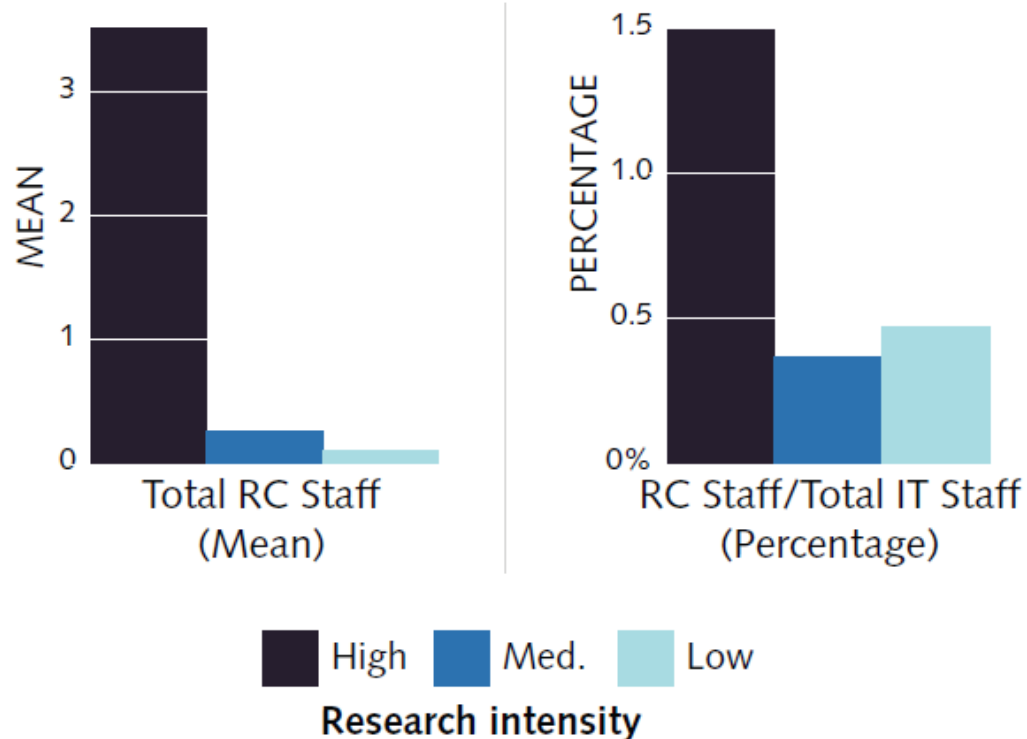
Figure 3. RC Staffing at High, Medium, and Low Research Intensity Institutions

CI Support Efforts
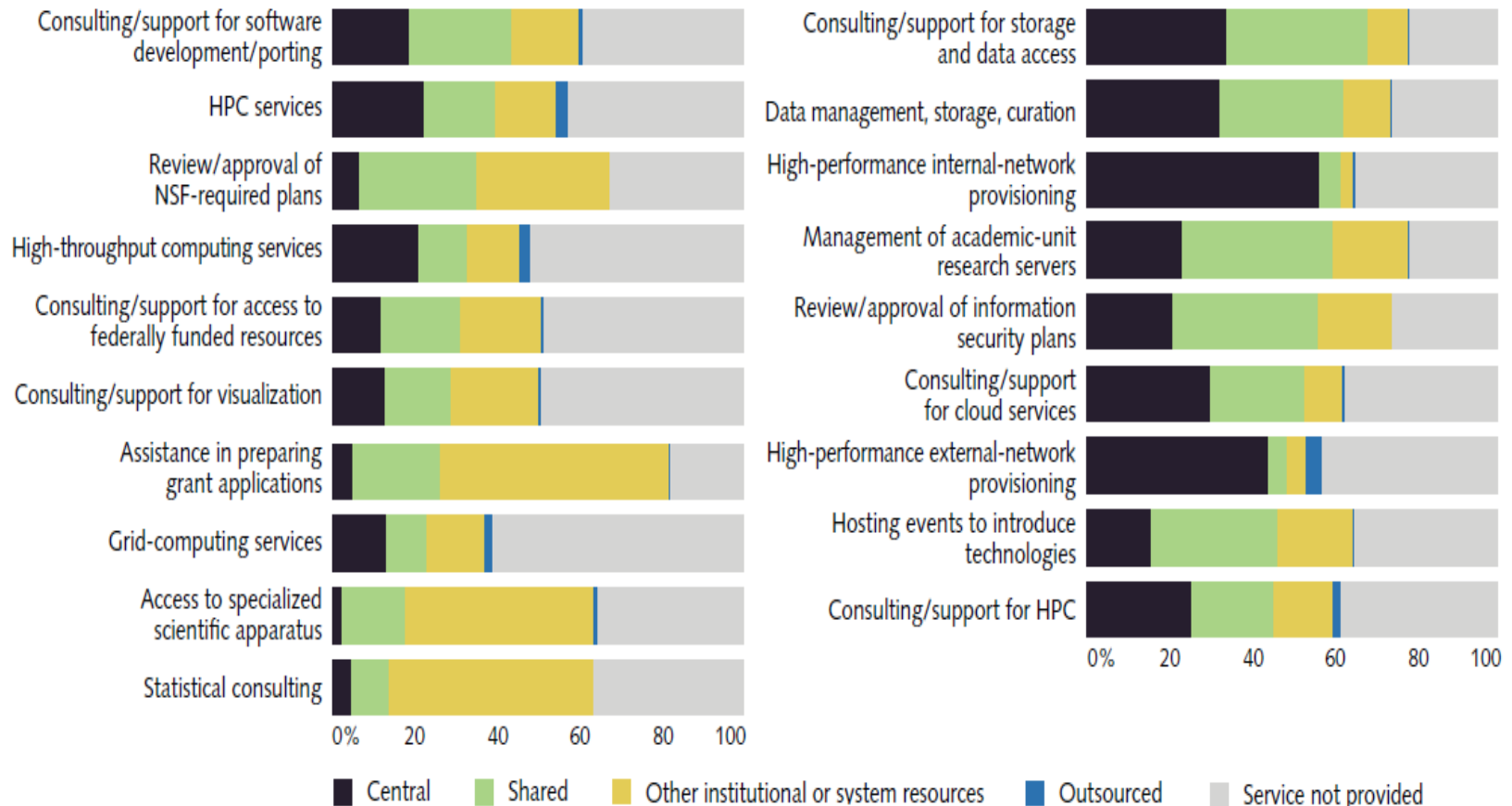
Figure 5. Research Computing Services Provided by IT

Research Support: Topic 1

Efficiencies and Effectiveness

- Consolidation and sharing
  - Hardware and software, roles and skills
  - Backfill queues - Condor - BOINC
  - Department -> UW -> cloud rate of transition
  - Central application lifecycles (SAGE, FIDS)
  - Network bandwidth, Science DMZ
- Best practices and policies
  - "Local" deployments
  - Central inventories (skills, assets, usage, …)
  - Security and compliance

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Research Support: Topic 2

Financial Topics

- Subsidies and investments
  - Consulting rates, Hyak sponsorship, Data Center co-location
  - Service rates - large use, small use
- F&A on storage and compute services
- Initial deployment cost depreciation
- Purchase lifetime (monthly, "one-time")
- R&D efforts to increase technology portfolio
- "Cash for Clunkers"
- Sustainability

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Research Support: Topic 3

Consulting

- Availability/Partnerships
  - More coordinated support
  - Condo of Condo facilitators
  - Rate setting
- UW-IT Service Management
  - Service Catalog entries
  - CAMS - Customer or Technology oriented
- Build support communities
  - Virtual, physical
  - UW-IT Central Help Desk
  - Long Tail

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UW-IT Current Efforts

- Active Project: Campus Research Enhancements (Aug 2014)
  - 100G Connection - UW Data Centers, PNWGP (done)
  - Campus backbone 10G->40G. Extendable to on-campus locations
  - Science DMZ - Open Flow/Software Defined Networking
  - 10TB lolo storage for any researcher to use
- Active Project: Hyak Phase II (July 2013)
- IT Service Management initiative:
  - Service Catalog - add or flag more entries for research support
  - help@uw.edu request routing
  - New IT Connect Web site will have Research as top level menu
  - Add SQL Share to Service Catalog
- Engineering Staff +1 FTE from IT SMB recommendation

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UW-IT Near Term

- Submitted NSF STCI proposal with Clemson (+2 FTE for 4 years)

- Submitted NSF 13 528 - HPC proposal for Hyak Phase III

- Discussing 6PB tape storage project for Genome Sciences (extend DMZ)

- Discussing 1PB storage project for Ocean Observatory (extend DMZ)

- Joining Coalition for Academic Scientific Computation

- Net+ services on horizon: Amazon AWS, Microsoft Azure

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CI Support Efforts
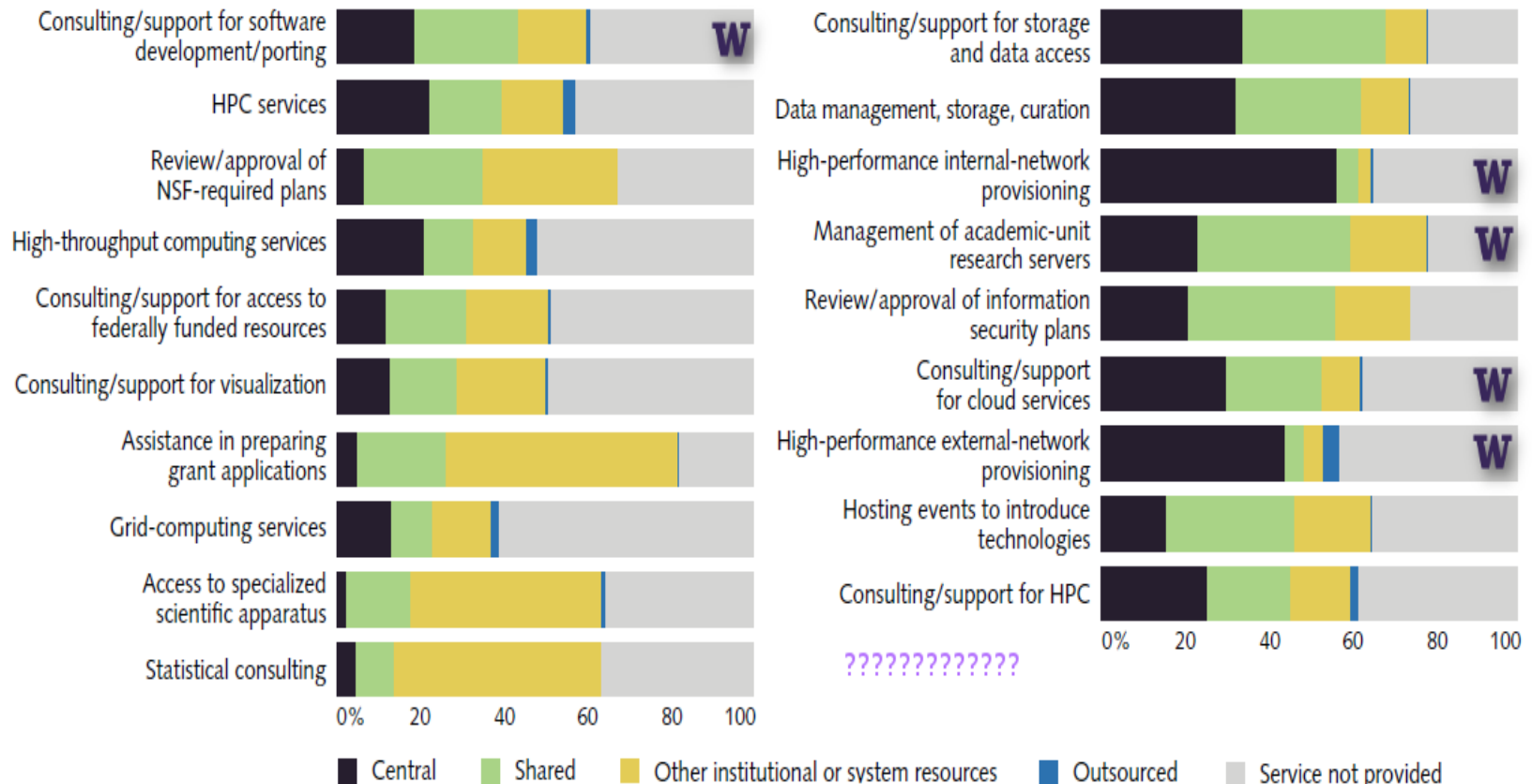
Figure 5. Research Computing Services Provided by IT

Questions & Discussion

Given UW-IT's limited resources, what should our strategy be for supporting UW research computing?

Research Support Ecosystem
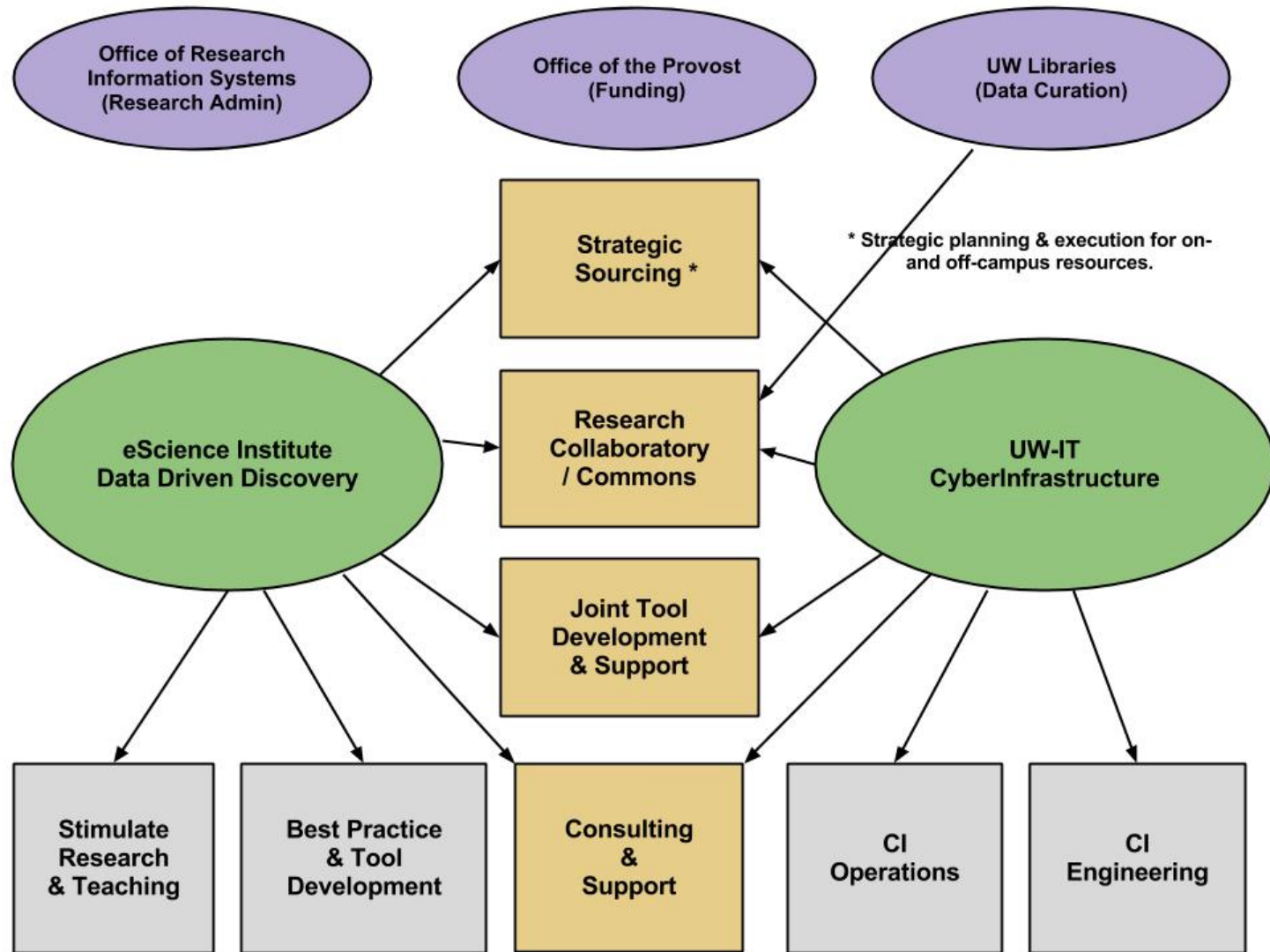
Kuali Student
MoU Renewal Assessment
Summary & Recommendations

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Kuali Student Investment History

May 2008 Strategic Roadmap planning complete

UW Staffing allocated to Kuali Student

Curriculum Management (CM) 1.0

CM 1.2

MyPlan development starts

Student Accounts Development begins

UW CM implementation initiated

CM 2.0

2008 **2009** **2010** **2011** **2012-13**

State of WA and BOR approval to invest in Kuali Student

MyPlan proposed to STFC

Enrollment Development begins

MyPlan Year 1 released

KS MOU renewal?

Committee Process

Charge: Assess rationale for the UW's ongoing investment in Kuali Student and issue recommendations related to renewing the UW's founding partner MoU.

The Committee met four times to:

- Refine evaluation criteria

- Gather updated peer institution data

- Consider vendor offerings

- Discuss outcomes to date and risks

- Develop recommendations

Committee Members:

- Gary Quarfoth (Chair), Associate Vice Provost, Office of Planning and Budgeting, Kuali Student Board

- Julia Carlson, Director Graduate Enrollment Management Services

- Virjean Edwards, UW Registrar

- Sara Gomez, Associate Vice President for Information Management, Kuali Student Board

- Michaelann Jundt, Assistant Dean, Undergraduate Academic Affairs

- Kay Lewis, Assistant Vice President for Student Life, Director of Financial Aid and Scholarships

- Kevin Mihata, Associate Dean for Educational Programs, College of Arts & Sciences

- Greg Miller, Chair of Civil and Environmental Engineering

- Phil Reid, Associate Vice Provost, UW-IT Academic Services, Professor of Chemistry

- Darcy Van Patten (ex-officio), Director of Student Program, UW-IT

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Assessment Criteria

- Strategic drivers

- Strategic framework for replacement

- Architecture and integration

- Costs

- Kuali Foundation stability

- Vendor marketplace

- Peer benchmarking

- Outcomes to date

- Current risk profile

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Strategic Drivers:
Flexibility to address emerging needs
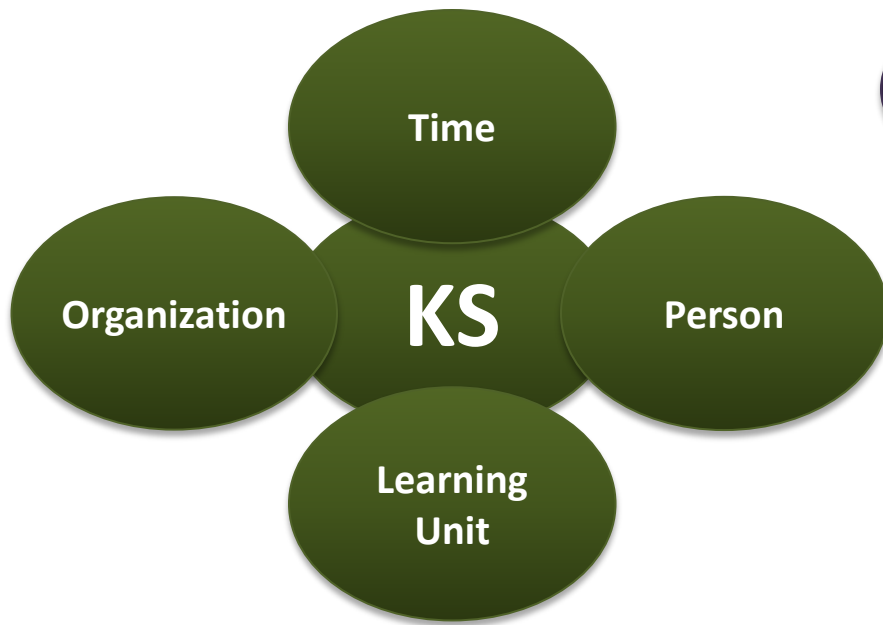
High-level entities
define core services
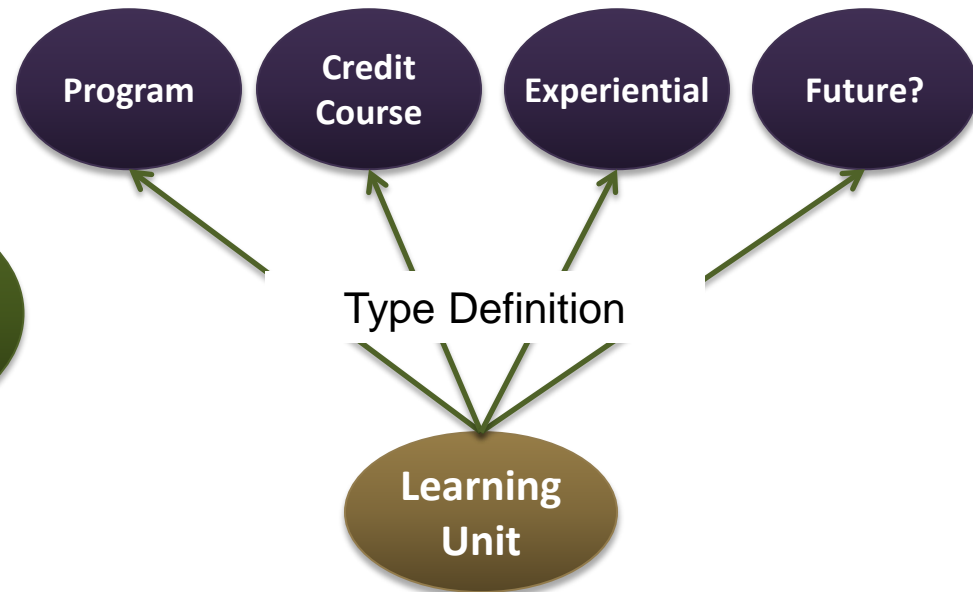
New types can be
defined as needed

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Strategic Drivers:
Improve the student experience

Institutional Information

Personal Information

Requirements

Goals

Information about the experiences of others

Possibilities

Inform Decisions, Guide Exploration

Strategic Framework for Replacement

Value to Mission (vertical axis, from *Important* to *Transformative*)

Market Availability to Meet Needs (horizontal axis, from *Commodity (Buy)* to *Custom (Build)*)

EDW
Enterprise Portal
Workflow

Academic HR
eFECS
Research
Student

Budget
Finance
Payroll
Staff HR
Procurement

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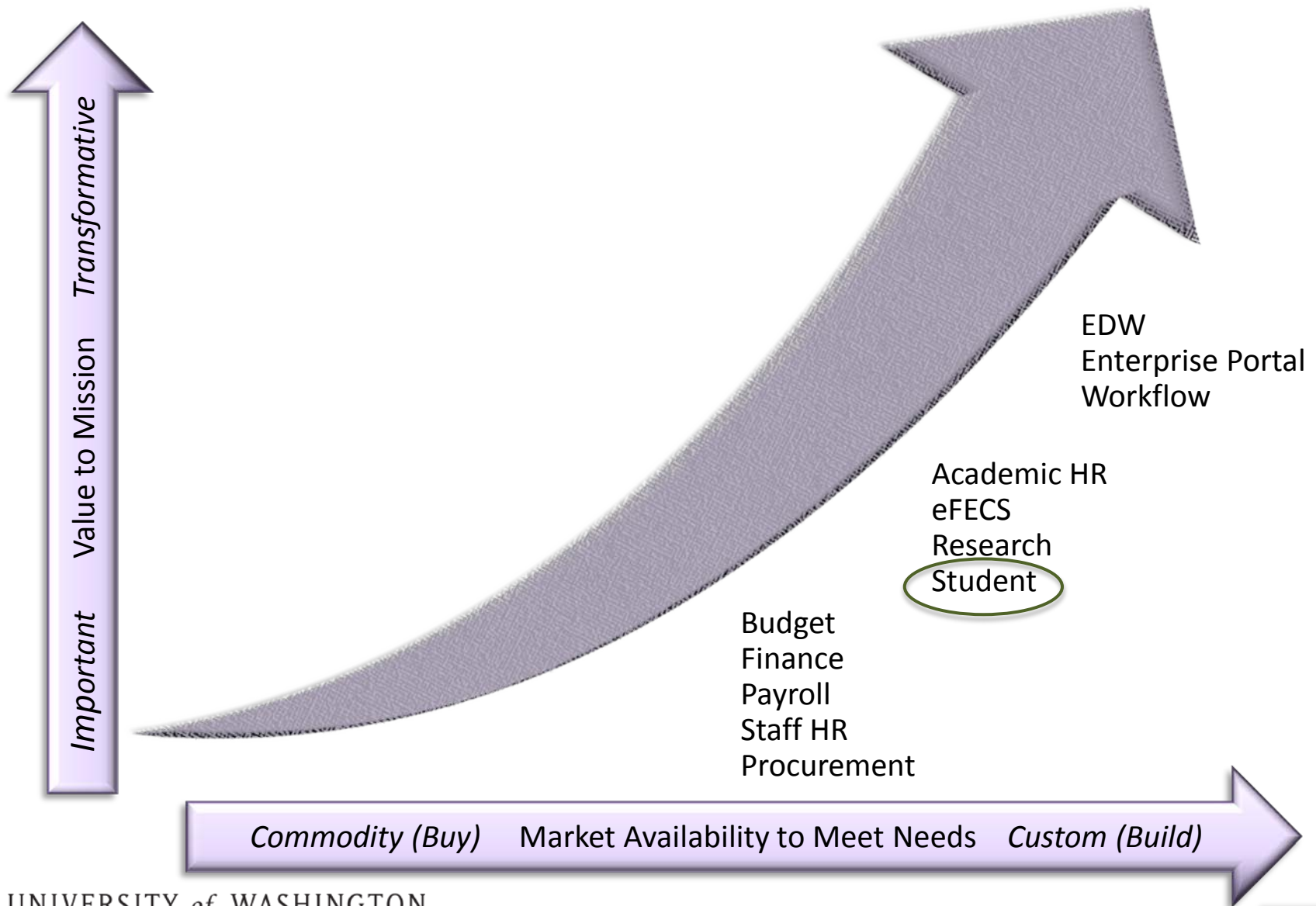
Architecture and Integration

MyPlan demonstrates value of Kuali Student's service oriented architecture:

- Incremental adoption

- Deliver more value from legacy systems

Kuali Student Service Oriented Architecture

SDB | Degree Audit | Course Descriptions | Curriculum Management | Academic Planning

UW Legacy Systems   Kuali Student

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Cost Profile

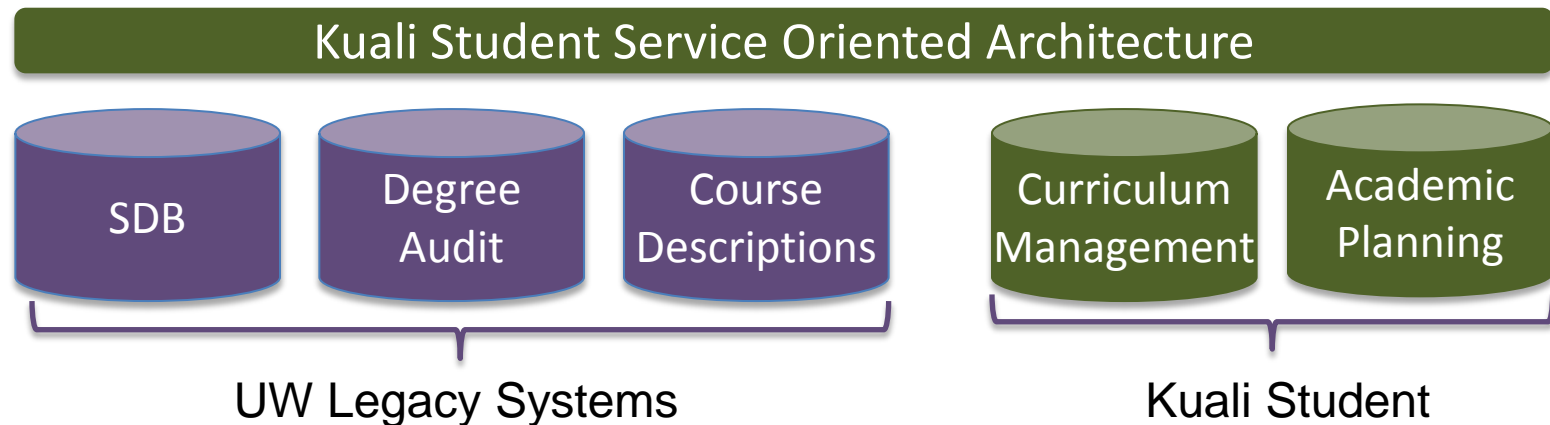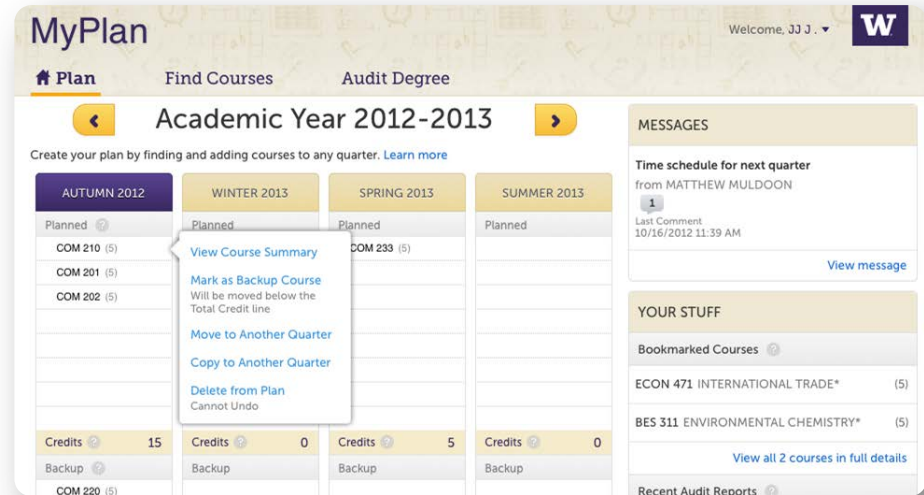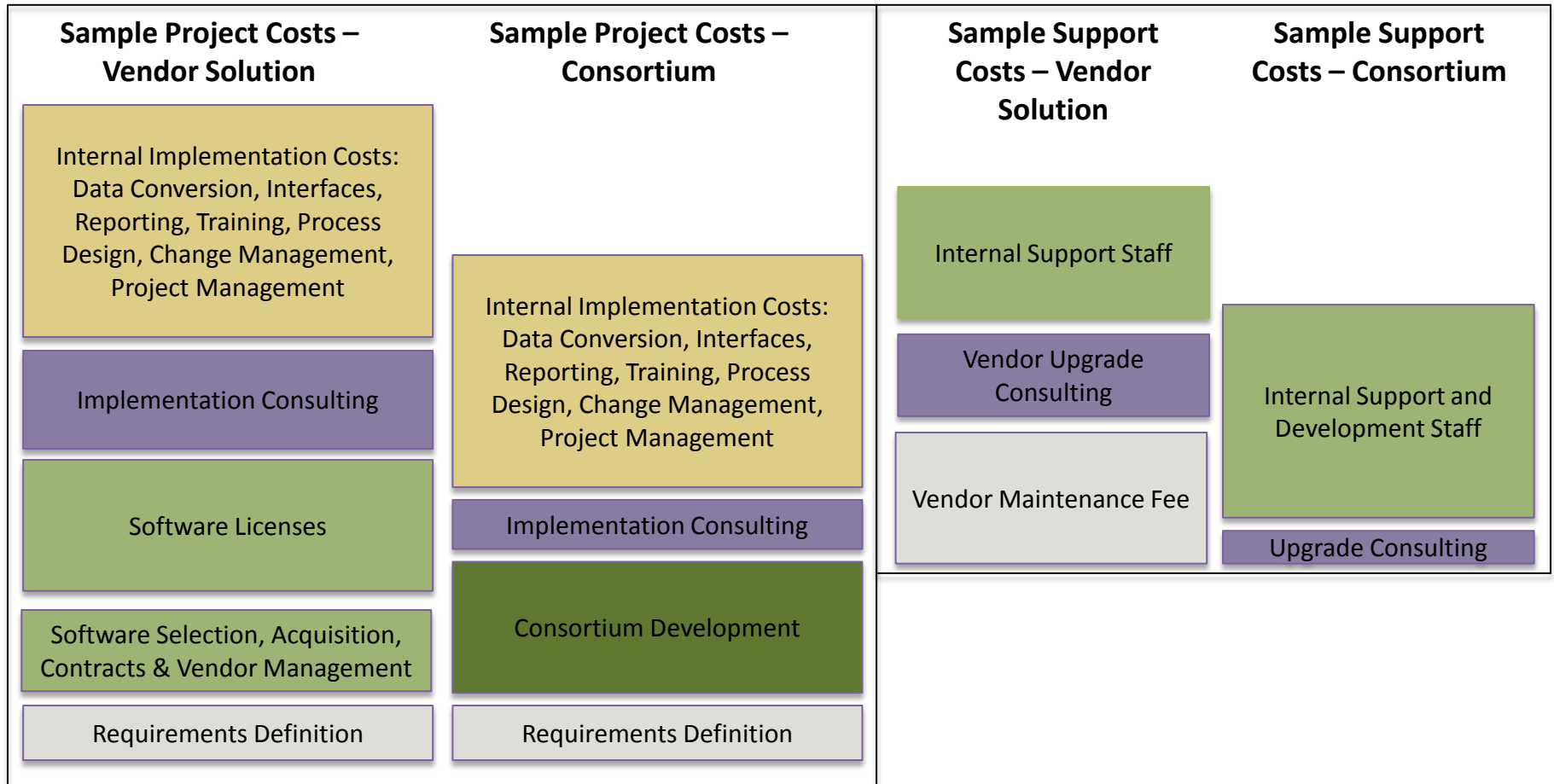| Sample Project Costs – Vendor Solution	Sample Project Costs – Consortium	Sample Support Costs – Vendor Solution	Sample Support Costs – Consortium
Internal Implementation Costs: Data Conversion, Interfaces, Reporting, Training, Process Design, Change Management, Project Management		Internal Support Staff	
Implementation Consulting	Internal Implementation Costs: Data Conversion, Interfaces, Reporting, Training, Process Design, Change Management, Project Management	Vendor Upgrade Consulting	Internal Support and Development Staff
Software Licenses	Implementation Consulting	Vendor Maintenance Fee	Upgrade Consulting
Software Selection, Acquisition, Contracts & Vendor Management	Consortium Development		
Requirements Definition	Requirements Definition		

- Lower overall cost to implement and maintain than vendor solutions
- No upfront procurement and licensing fees
- UW controls level and speed of expenditures

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Kuali Foundation Overview

Stability Metrics:

- 72 foundation members

- 9 commercial affiliates

- 2011 total assets: $23,959,434

Growth Metrics:	2005	2006	2007	2008	2009	2010	2011	2012
# of Members	7	10	22	33	37	57	58	72
# of Projects	1	2	3	4	5	7	8	8
# of Investing Partners	5	13	22	31	44	63	70	71
Kuali Days Attendees	120	219	207	520	350	690	815	816

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Kuali Product Profiles

(does not include Ready, Mobility, Open Library, and Personnel Management)

System	Investors	In Production	In Progress	Investors/Implementers Short-list
Kuali Financial System (5.0)	11	13	4	▪ Indiana University ▪ Michigan State University ▪ University of Arizona ▪ Cornell ▪ University of Southern California ▪ Colorado State University ▪ UC Davis
Kuali Coeus (5.0.1)	18	8	8	▪ Indiana University ▪ MIT ▪ Johns Hopkins ▪ University of Hawaii ▪ UC Irvine ▪ University of Arizona ▪ Cornell ▪ Michigan State University ▪ Colorado State University
Kuali Student (2.0)	8	3	6	▪ University of Toronto ▪ University of Maryland College Park ▪ University of Southern California ▪ Indiana University ▪ University of Utah
Kuali Rice (2.2)	6	21	8	▪ UC Davis ▪ UC Irvine ▪ UC San Diego ▪ University of Arizona ▪ Cornell ▪ University of Maryland College Park ▪ Michigan State University

SIS Vendor Marketplace

Ellucian Banner

- Not seen as a viable option for UW's size and complexity

## Oracle/PeopleSoft Campus Solutions

- After assessment, Committee does not consider an acceptable solution

- Technology platform from the 1990s

- Some attempts to modularize and provide improved integration

- No significant functional innovations over the last 20 years

- Oracle's higher education market is ½ of 1% of their business

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Peer Benchmarking

| Oracle/PS	Kuali Student (future): Oracle/PS (legacy)	Kuali Student	Undecided (evaluating options)
- University of Michigan - University of Wisconsin, Madison **University of Minnesota** **Washington State University**	- Indiana University - University of Utah	- University of Maryland, College Park - University of Toronto - University of Southern California	**Michigan State University** **University of Texas, Austin** **Iowa State University** - Penn State University **UC Berkeley**

- Institutions on burning platforms (**shown in red**) are forced to go with a vended solution if Kuali Student's timeline does not align to institutional timeline.

- Institutions with time have flexibility to select a SIS based on institutional priorities and constraints. Three of the five 'undecided' organizations (**shown in green**) have been exploring Kuali Student, as demonstrated through their participation in Kuali Days and outreach to peer institutions (including the UW) for information.
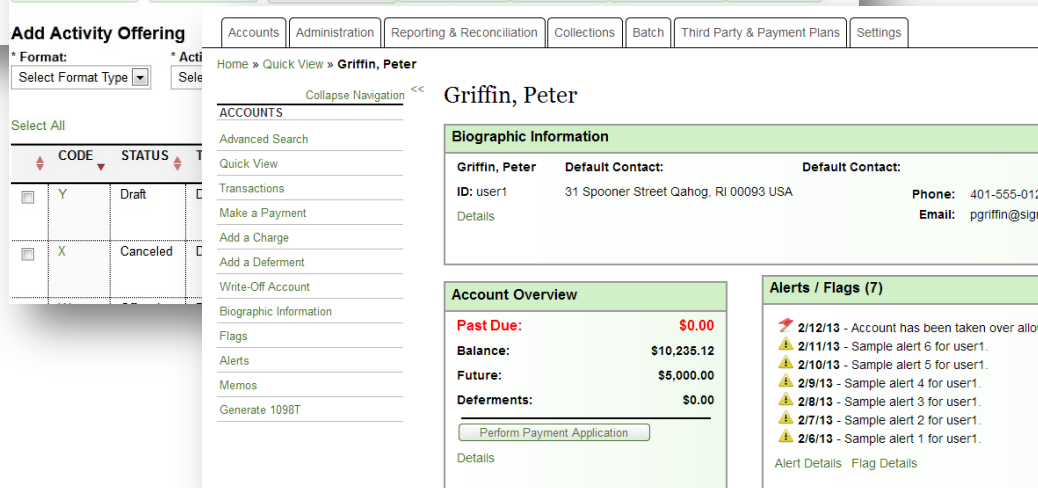
Kuali Student Software to Date
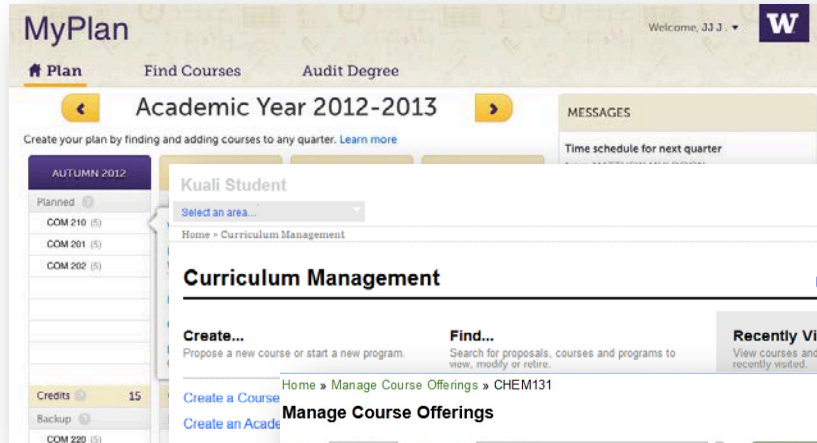
MyPlan (2012)
Live at UW; Contribution underway
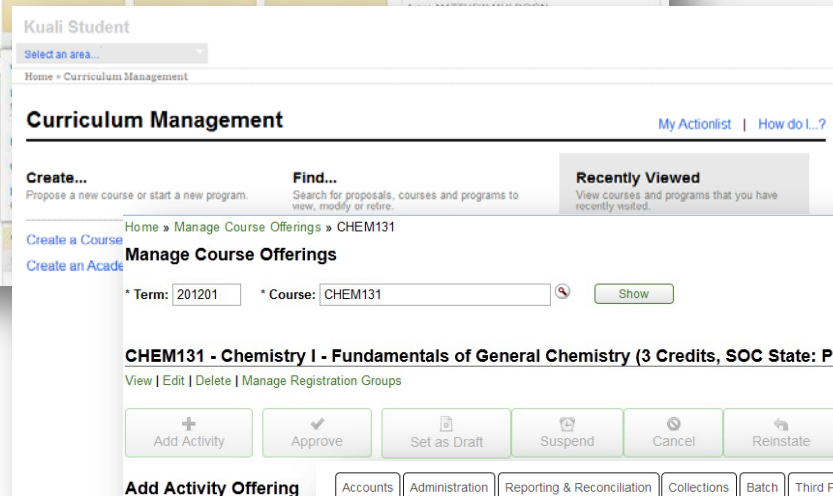
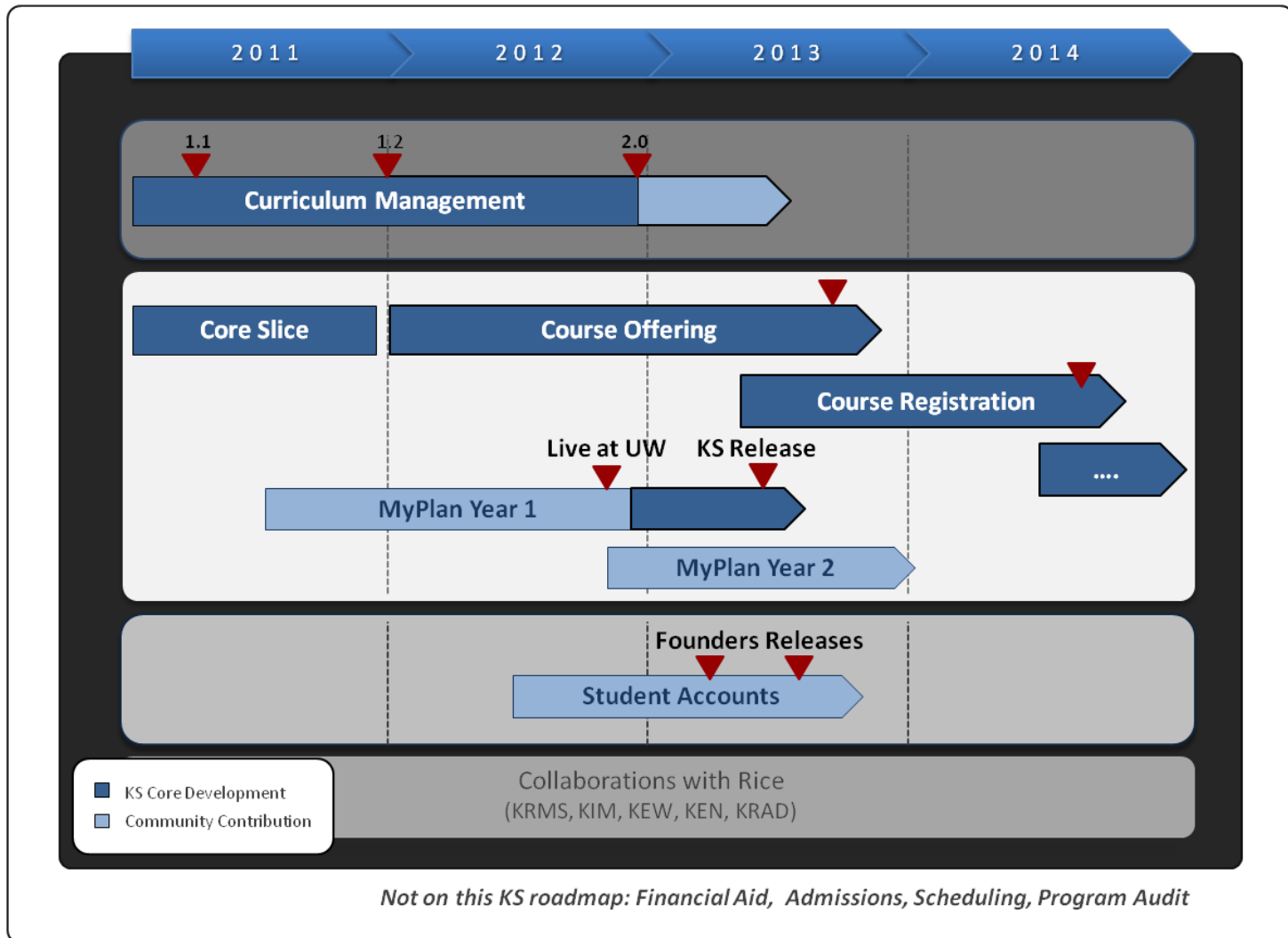**Curriculum Management 2.0 (2012)**
UW implementing

Enrollment (2013-16)
In development

Student Accounts (2013)
In development

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Other Outcomes to Date

- User Experience style-guide and technology platform leveraged for MyPlan development

- Alignment of local activities to long-term vision and needs
    - Project portfolio
    - Skills
    - Infrastructure

- Governance and processes to support legacy data conversion

- Cross-institutional collaboration and best practices

- Kuali Rice enables business process automation – tuition change process, supplier registration

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Kuali Student Roadmap

Current Kuali Student Risk Profile

Risk Categories	Severity	Description
Architectural Approach	⬇	No major architectural decisions pending. SOA architecture re-affirmed in 2012 by taskforce and through MyPlan.
Geographical Distribution	⬇	No longer a risk. Team organizations, processes, and skills have effectively adapted to needs of geographic distribution.
Partnership Changes	➡	Remains a risk, but overall stability of the project has minimized churn associated with partner transitions. 2012 brought departure of UC Berkeley and addition of University of Utah.
Community Dynamics	➡	Remains a risk. With other partners significantly increasing their investment in Kuali Student, the inherent risk that the UW's voice and level of influence is diminished.
Inadequate Staffing	⬆	Increased risk because of scale of enrollment module and need to coordinate across four development streams. Strategic Roadmap sub-committee of the KS Board is evaluating priorities and recommending shifts in priorities and resource additions.

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Preliminary Recommendations

- **Renew:** Continue the UW's founding partner investment in Kuali Student by signing a three year MoU

- **Accelerate:** Consider additional investment to speed up delivery of a fully working core student information system and increase the UW's influence on the remainder of the project

- **Communicate:** Create and rollout communication plan to remind campus of rationale and update on Kuali outcomes

- **Manage Expectations:** Develop concrete plans on when a student replacement project could realistically begin, based on other major campus-wide IT projects (e.g., HR/P)

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Revised Criteria and Guidelines for Project Prioritization

Criteria from Strategy Board and Service Investment Board

- Strategy and Goals
- Improve Efficiency and Reduce Costs
- Data
- Balance
- Breadth
- Probability of Success
- Enterprise Risk
- Resilience and Business Continuity
- Build vs. Buy (Competitive Advantage)

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Service Investment Board Ranking

Criteria

Legend:
- Strategy and Goals — 4.5
- Improve Efficiency and Reduce Costs — 4.2
- Data — 3.4
- Balance — 3.7
- Breadth — 3.5
- Probability of Success — 4.1
- Enterprise Risk — 4.6
- Resilience and Business Continuity — 4.3
- Build vs. Buy (Competitive Advantage) — 3.9
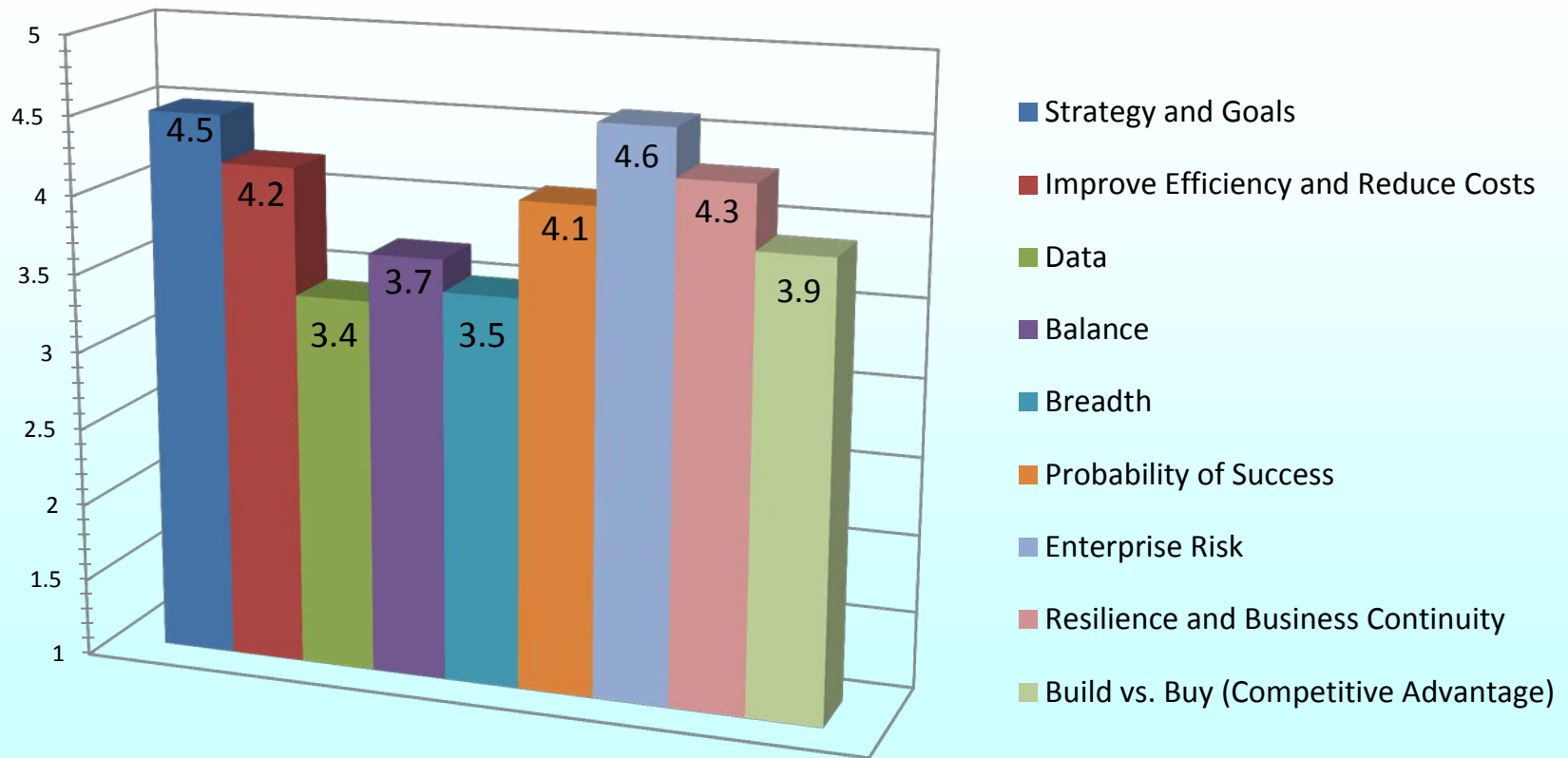
Ranking Results

4.6 - Enterprise Risk

4.5 – Mission, Strategy, and Goals

4.3 - Resilience and Business Continuity

4.2 - Improve Efficiency and Optimize Costs

4.1 - Probability of Success

3.9 - Build vs. Buy (Competitive Advantage)

3.7 - Balance

3.5 - Impact (Breadth)

3.4 - Data

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Approach to Project Prioritization

- Categorize Criteria
  - Importance
  - Probability of success
  - Guidelines
- Assign Weight and Value of Criteria to Projects
  - Scale: 0 – 5
- Plot on a 2-Dimensional Grid

Revised Criteria and Guidelines

Importance

- Mission, Strategy, Goals
- Enterprise Risk
- Resilience and Operational Risk
- Improve Efficiency and Optimize Costs
- Impact – Breadth and Magnitude
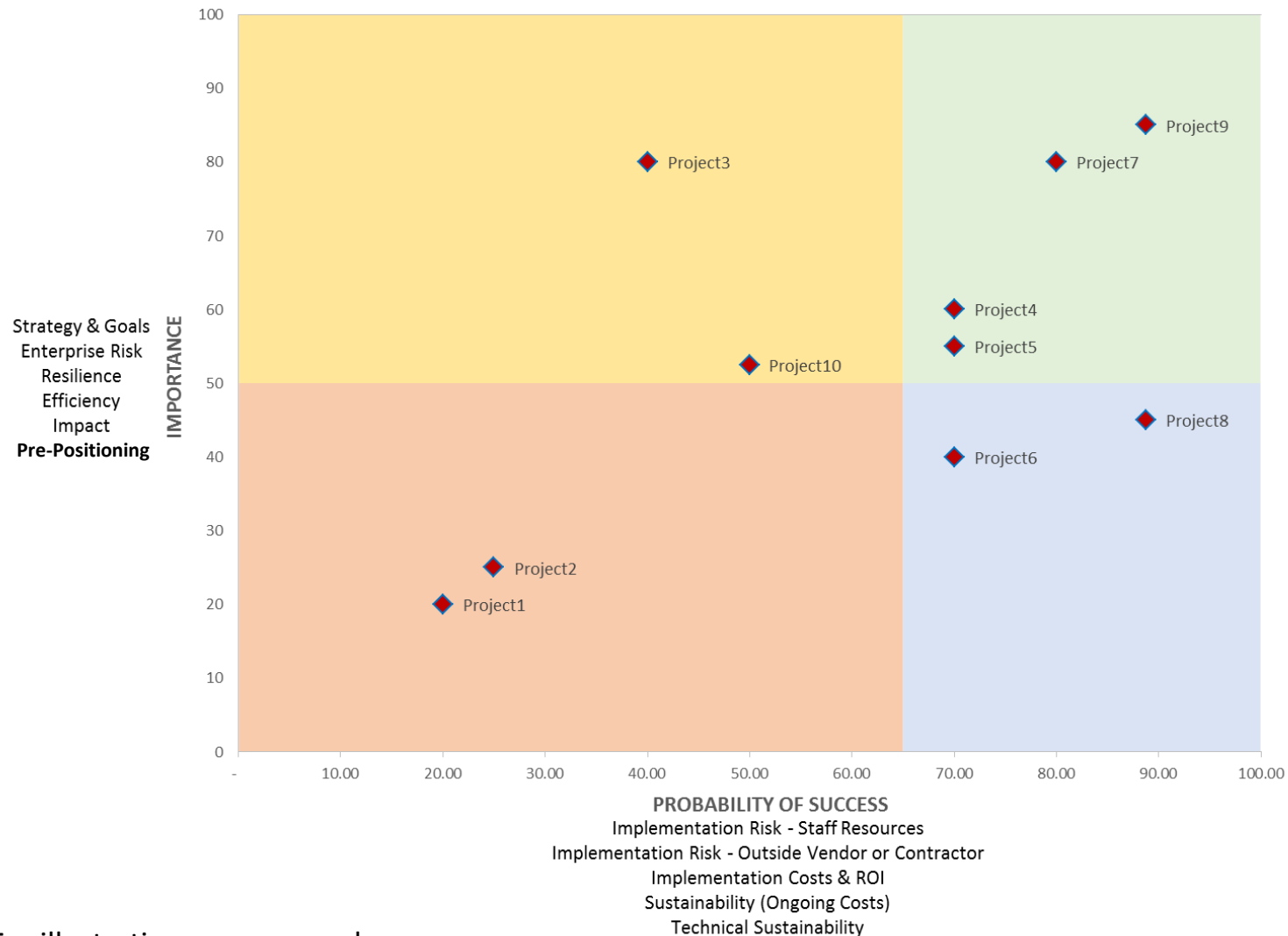- Pre-Positioning (Long-term)

Probability of Success

- Implementation Risks
  - Staff Resources
  - Vendor/Contractor
- Implementation Costs and ROI
- Sustainability – Ongoing Costs
- Technical Sustainability

Guidelines for Selecting a Solution

- Sourcing Spectrum (Build vs. Buy)
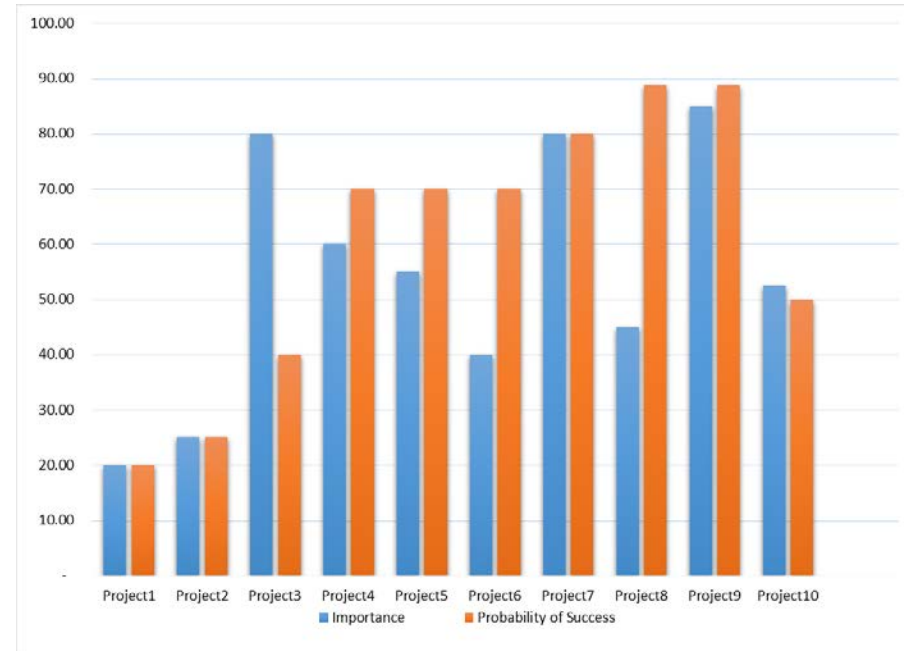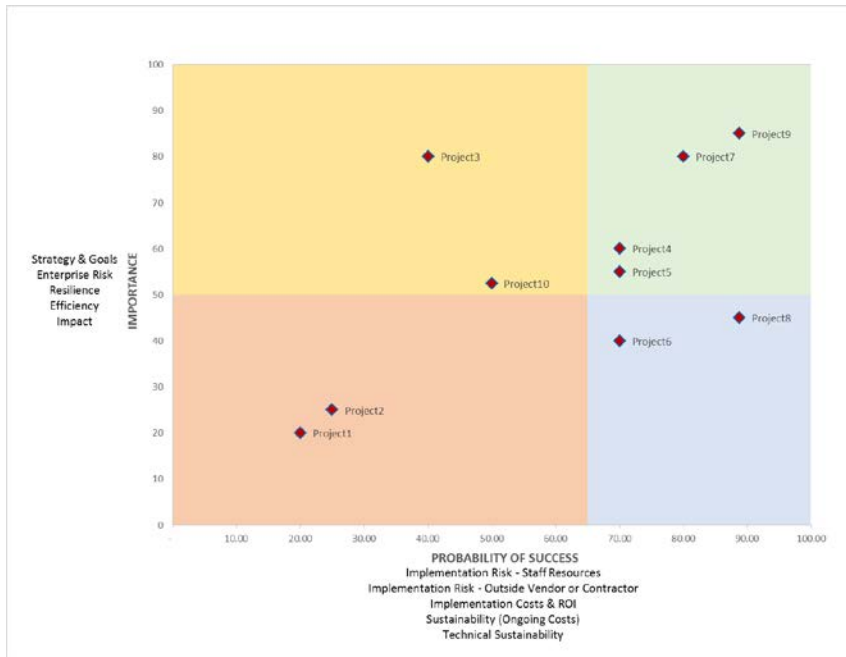- Data and Analytics

Criteria: 2-Dimensional Perspective

For illustration purposes only

Criteria Ranking Worksheet

IMPORTANCE

Strategy	Weight	Criterion	Condition	Enter Value

MISSION, STRATEGY and GOAL
 	
o *Sustain*
  • *Academic excellence and mission*
  • *Financial stability*
o *Compete*
  • *Attract the best students, faculty, and staff*
  • *Increase and diversify funding*
o *Transform*
  • *Embrace technology and interdisciplinary collaboration of a diverse and dispersed student body*
  • *Invest in people and infrastructure to meet 21st century challenges*
 	
Does the decision improve the University's competiveness by lowering barriers to collaboration in research, instruction, or other University efforts across organizational, regional, or global boundaries?
	4.5	Does this project *directly* support the mission, strategy, and goals of UW?	Multiple Strategic Goals (5)	**5.0**

			Single Goal - High Priority (3)	**Total Score**
			Single Goal without High Priority (1)	**22.5**
			No Goal Supported (0)	

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Evaluate Project Rankings

IT Projects Oversight

Questions & Discussion

Appendices

Information Technology (IT) Governance

Major IT Projects
(HR/P, EPIC Roll-out, EDMS, etc.)

Hyak Governance Board

Data Management Committee

Finance Program Steering Committee

Student Information Systems Steering Committee

Teaching & Learning Technology Oversight Committee

Portfolio Review Board
 Enterprise Architecture Steering Group

Service Management Oversight Group
 Reporting and Analytics
 (Priorities for Campus Users)

IT Strategy Board

IT Service Investment Board

TRF Advisory

IT Service Management Board

President
Provost

Vice President for UW-IT and CIO

Strategic Plans;
Recommend Policies;
Funding Strategies

Guidance on Strategic Direction

Refer Issues;
Provide Input

Provide Analysis;
Identify Issues;
Recommendations

Prioritize Projects;
Recommend Funding Levels;
TRF Review

Direction on Changes to Services

Refer Issues;
Provide Input

Service and Process Improvement Recommendations

IT Boards supported by the Office of the Vice President for UW-IT and CIO

Updated: May 6, 2013

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UW-IT Project by Strategic Goal

Service Goals

Excellent infrastructure and foundation services

Programs	Project 1	Project 2	Project 3	Project 4	Project 5
Telephony	Telecom Core Refresh				
Network	UW Medicine Switch Tech Refresh HMC	UW Medicine Switch Tech Refresh UWMC	K-20 Operations Expansion	Wi-Fi Technology Refresh FY2013	Centralized Address Translation and Firewall Services
Storage	Upgrade Enterprise SAN Storage (EMC refresh)				

Advanced productivity and collaboration tools

Personal Productivity	Office 365	UW Event Calendar Replacement	IT Connect Redesign	

Improved global research support

Improved student experience

Teaching & Learning	Canvas	Tegrity	eTexts	
Student Admin Systems	Course Availability Notifications	Curriculum Management Implementation	MyPlan, Year 2	MyPlan, Year 1

Modern information management and business systems

Enterprise Data Warehouse	Student Course Enrollment	Tableau Business Intelligence Tools Enterprise Pilot	EDW Infrastructure Renewal	Migration & Academic Release
HR/Payroll	HRP Replacement System Procurement & Contract Negotiations	Feasibility Assessment		
Finance	UW-IT Financial Management System Implementation	My Financial Desktop	JDE Upgrade 2012	
Recruitment	Recruiter 2.0 Deployment	MS Dynamics CRM Proof of Concept		
Kuali	Kuali Student	Kuali Rice		

Business continuity, security, and privacy

Business Continuity	FY13 Geographic Redundancy
Security and Privacy	UW NetID Password Policy Foundations Project

Organizational Goals

Exemplary organization

IT Service Management	ITSM Toolset Selection	ITSM Toolset Deployment	Request Fulfillment	Incident Management

Strong strategic partnerships

Gigapop	PNWGP WA 40G Network

Culture of exploration and sharing

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Proposed 2013 Timeline

Month	IT Strategy Board Topic
February 4	▪ Priorities and work plan ▪ Oversight responsibilities ▪ Kuali Student review plan ▪ IT project and priorities
May 13	▪ Kuali review recommendations and action ▪ Revised Criteria and Guidelines ▪ Support for research computing
October/November	▪ Beyond MOOCS, what is next? Other disruptive learning technologies ▪ Consumerization and personalization for students ▪ Review of 2013 IT Strategy Board ▪ Strategic IT priorities for 2014