IT Strategic Planning

March 4, 2016

IT Strategic Planning Process

- Have engaged external consultants to inform our work
  - Baker Tilly: Risk Assessment
  - Moran Technology Consulting: Strategic Plan

- Established a steering committee and 3 work groups to make recommendations on priorities and governance
  - IT Investments
  - Leveraging Resources
  - Governance

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Where We Are . . .

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Decentralized Model

IT responsibilities and services are:

- Distributed in over 27 units across campus
- Carried out by more than 250 FTE
- Funded by an annual investment of more than $34 million
  (including costs such as salary, hardware, software, and services)
- Not governed by a central authority

IT UNIT SERVICES LISTING

	End user support for faculty, staff, student workers	End user workstation management	User access account provisioning	Database management	Data center management	Application and web development
CAS Dean's Office				✓		✓
CMET	✓			✓		
UO Police	✓	✓	✓		✓	
Housing	✓	✓		✓		
Department of CIS*	✓	✓	✓		✓	
Department of Psychology	✓	✓	✓		✓	
University Health Center	✓	✓	✓		✓	
Finance and Administration	✓	✓	✓	✓		
Business Affairs	✓	✓	✓	✓		✓
ECS	✓	✓	✓	✓		✓
AAA	✓	✓	✓	✓		
Enrollment Management	✓	✓	✓	✓		
CAS	✓	✓	✓	✓		✓
SOMD	✓	✓	✓	✓	✓	✓
Research and Innovation	✓	✓	✓	✓	✓	✓
UO Libraries	✓	✓	✓	✓	✓	✓
University Advancement	✓	✓	✓	✓	✓	✓
College of Education	✓	✓	✓	✓	✓	✓
Athletics	✓	✓	✓	✓	✓	
School of Law	✓ (undergrad)	✓	✓	✓	✓	
SOJC	✓ (undergrad)	✓	✓	✓	✓	✓
Information Services*	✓ (undergrad)	✓	✓	✓	✓	✓
EC Cares	✓	✓	✓	✓	✓	✓
Division of Student Life	✓	✓	✓	✓	✓	✓
Campus Operations	✓	✓	✓	✓	✓	
Academic Extension	✓	✓	✓	✓	✓	✓
Lundquist College of Business	✓	✓	✓	✓	✓	✓

▨ = Also includes support for undergraduate students   * Also provide network services

Risks Faced by the University

IT Risks

Oregon faces many IT threats as a higher education institution managing multiple networks and systems, and providing IT services to thousands of faculty, staff, students, and other constituents. The risk map below depicts the specific risk areas for Oregon prioritized by the potential impact and likelihood. The placement of the risks on the risk map was based on criteria tailored to Oregon for potential impact and likelihood. The rating of risks was based on judgment, and the criteria were purposely not weighted equally or applied uniformly across the risk areas. Impact was based on reputational, financial, operational, and compliance factors, while likelihood was based on potential timing of occurrence in the short, medium, or long timeframe. The descriptions of each area are listed on the following pages. It is important to note that these areas do not necessarily represent problems, but are risks inherent to Oregon's operations and the environment in which it operates.

Where We Want To Be . . .

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How We Get There . . .

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Information Technology Vision
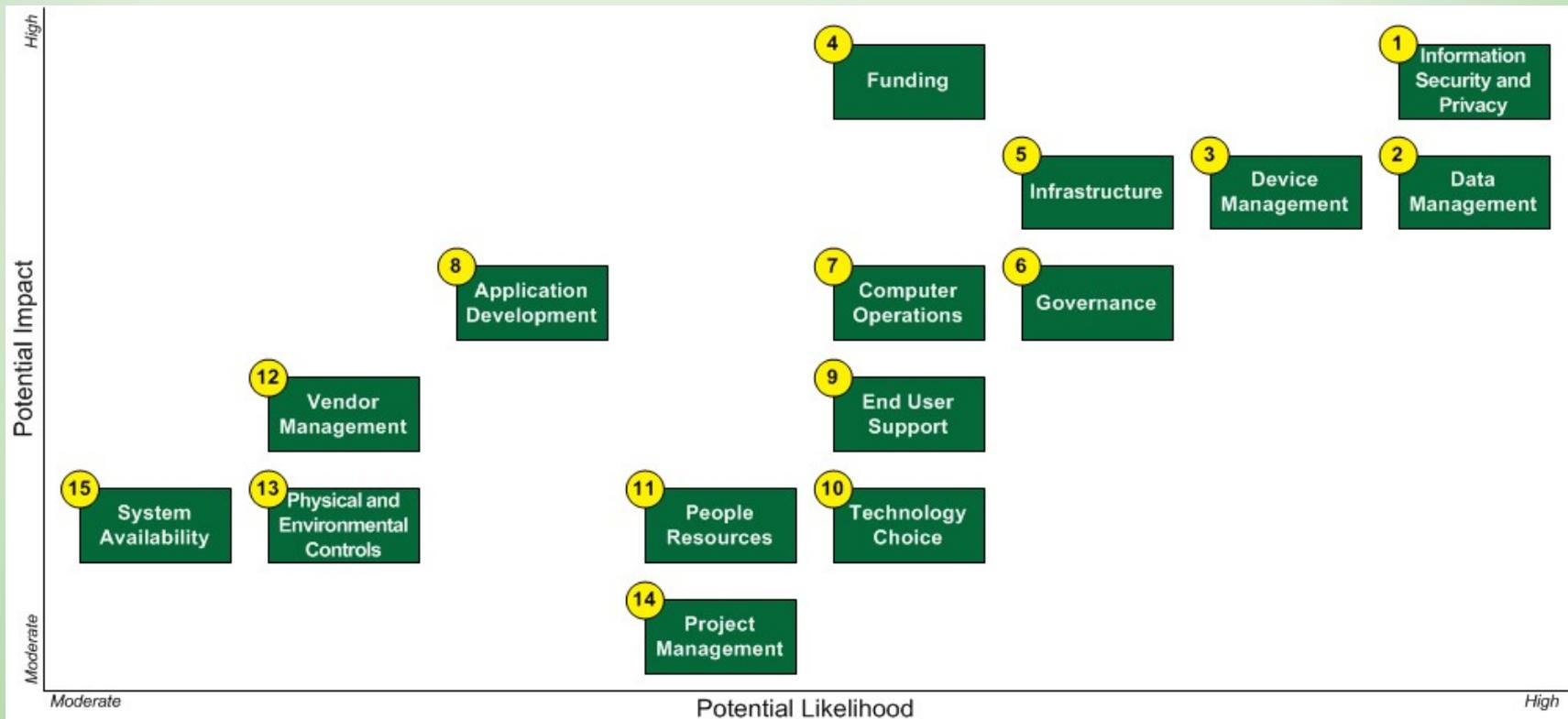
UO will strive to create a collaborative and secure IT environment that attracts and retains the best students, faculty and staff by providing a common foundation of anytime/anywhere technology access for all UO 'citizens' and that focuses on strategically funding targeted technology capabilities to support its learning and research goals.

To achieve this vision, the University of Oregon must:

- Ensure that a collaborative IT Governance Model is deployed that continually focuses on prioritizing, funding and driving community-valued IT services
- Recognize that having a secure and robust underlying technology infrastructure is critical to providing all other technology services
- Identify cross-campus core IT services that are more cost effectively provided in a centralized approach and use the potential savings to fund strategically targeted projects
- Mobilize collaborative cross-campus constituencies to identify and address common goals
- Streamline our administrative processes and systems to provide more seamless and automated service to all campus stakeholders
- Have consistent and strong executive support to ensure that the IT Strategic Plan is supported
- Excite students and faculty to leverage technology to improve learning and research outcomes

MORAN
TECHNOLOGY CONSULTING

What We've Accomplished . . .

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Strategic Planning

Steering Committee: CIO, Vice President for Finance and Administration, Interim Vice President for Research, 4 Deans, 2 IT Directors, Assistant Vice President for Financial Aid, Associate CIO for Customer Experience, Associate Vice President for Research

Work Groups: Membership comprised of steering committee members as well as additional faculty and staff with expertise in management, strategic planning, or IT

	Charge
Technology Investments	Develop recommendation for strategic investments with a funding range of $2.75-$4 million
Leveraging Resources	Make recommendations for consolidation & integration of functions & services
IT Governance	Develop an IT governance model that will select, prioritize, and provide oversight on major technology investments & policies

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Central Information Services

New Management Structure

(See Appendix A for bios)

- **Interim CIO: Chris Krabiel**

- **Infrastructure Lead: Joe Sventek**
  - o   Will lead a full assessment of campus infrastructure and present recommendations for funding based on risks and strategic investments

- **Staff Management Lead: Miriam Bolton**
  - o   Will provide support for staff during the transition

- **Consolidation Lead: Harvey Blustain**
  - o   Will lead an assessment of all IT units/functions around campus and make recommendations for appropriate consolidation/coordination

Governance

The mission of IT:

- Provide services that are critical to the front-line mission of the institution: teaching and research

- Provide important services directly to all students

- Provide services that are critical to all of the other services that are directly or indirectly supporting the mission of the institution (e.g., business operations, academic and student support, research operations, auxiliaries, data security)

Why do we need a robust and formal IT Governance model?

1. IT resource needs will always outstrip available resources, thereby requiring strategic prioritization of how resources are deployed, within the context of the mission of the institution

2. IT security, business continuity and compliance needs require sensible and enforceable policies that support, rather than unduly interfere with, the mission of the institution

3. Appropriately balancing central and local IT activities requires frequent recalibration

4. As remarked above: **every** member of the University community (student, faculty, staff) is a direct stakeholder in the success of our IT enterprises

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Governance

Governance Committee

- Advises the Provost on all matters relating to IT including:
    - Creating, revising, maintaining, and implementing IT policies
    - Prioritizing use of available resources
    - Overseeing campus technology working groups

IT Directors Committee

- Advises the CIO on IT operations and needs including:
    - Coordinating activities to improve efficiency and avoid duplication
    - Sharing best practices
    - Collaborating on innovative ideas
    - Leveraging the use of local and central resources and infrastructure

Governance

New Governance Committee Membership

Appointed by the Provost

- Two Co-Chairs: CIO + an additional co-chair appointed by the Provost from the membership listed below
- One Vice Chair (to be appointed by the Provost from the membership listed below)
- Five Faculty members
- Two Deans
- One representative of the Library
- One representative from the Office of the Provost
- One representative from the Office of the Vice President for Research & Innovation
- One representative from University Advancement
- One representative from the Office of the Vice President for Enrollment Management
- One representative from the Office of the Vice President for Student Life
- One representatives from the Office of the Vice President for Finance and Administration
- Two members at large (as desired)

All representatives must be at the level of Assistant Vice President/Provost or Associate Dean or higher.

Governance

Governance Committee Activities

- Evaluate and recommend technology-related policies and procedures

- Recommend IT service and project priorities for the University

- Advise on the implementation of the UO IT Strategic Plan

- Advise on the development of future versions of the UO IT Strategic Plan

- Identify existing campus technology committees and working groups, then develop and maintain a framework that connects them back to this Committee for purposes of information-sharing

- Review proposals, recommendations, and input from other campus technology committees and working groups make recommendations for further action

- Provide recommendations for effective use of campus-wide technology resources

Governance

Activities *con't*

- Support the CIO *(and appropriate others)* in campus-wide monitoring of and ensuring compliance with best practices, IT policies/processes, and institutional priorities

- Provide input regarding technology project and service proposals into the campus budget process

- Recommend approval of all proposed technology projects and services that meet certain criteria (e.g., affects a certain number of campus users, affects more than one campus unit)

- Make recommendations for aligning IT professional resources to institutional goals with respect to UO's IT organizational structure and standards for compensation and competency

- Recommend approval of procurement of all technology services and products that meet certain criteria (e.g., a large project over a certain dollar threshold)

Governance

- Many other campus leaders should have **formal** responsibilities within the IT governance framework:

    - Example: GC should provide appropriate staff during policy development/revision

    - Example: VPRI should provide appropriate staff during discussions of research computing needs

- It is critical for **all** members to understand the University's mission, goals, priorities, and strategic plans

- Both models require Central IS to provide appropriate staffing with IT professionals and other support staff (e.g., scheduling meetings, taking notes, ensuring proper liaison with communications)

Leveraging Resources

Guiding Principles

Important to consolidate functions that:

- Are strategic priorities for UO

- Will result in opportunities for scale economies

- Will result in a more efficient use of resources

- Cut across multiple units and do not require specialized knowledge of a unit

- Will result in faculty/staff/students receiving new or improved services/products

- When consolidated, improve operations and mitigate risks

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Leveraging Resources

Long Term: Run coordinated assessment process

- Establish an inventory of all existing units/functions that need to be assessed

- Provide support and direction to Harvey Blustain as he

  o Prioritizes the review of the units/functions

  o Creates the rubric by which each unit/function is assessed (based on the established guiding principles)

  o Sets the timeline for staged completion

  o Carries out the assessment process

Short Term: Focus on 5 areas for consolidation/coordination

Leveraging Resources

Short Term

Goal: Identified areas that (1) address risks identified by Baker Tilly, (2) could result in fairly rapid cost savings/efficiencies, (3) have an identified path forward, or (4) are likely to be supported by campus

Five areas have been identified that address the goals above
- Consolidate data centers
- Establish central contracts for hardware procurement
- Handle vendor enterprise software licensing through Central IS
- Move all email/calendaring to a single system in the cloud
- Better coordinate help desk support

Leveraging Resources

Item	Implementation Next Steps	Concerns Addressed
Data Center Consolidation	As a part of the IT infrastructure assessment we will develop an inventory of all existing data centers; determine how much it would cost to consolidate existing data centers; and set a proposed plan and timeline for how to consolidate each of the data centers knowing there will be a limited budget available every year (e.g., consolidate as servers reach end of life)	• Security *(better controlled access to network/systems)* • Long-term cost savings *(less staff time spent maintaining equipment, less equipment/locations to maintain & cool)*
Enterprise Software	Determine what software would fall under the consolidation	• Immediate cost savings due to economies of scale
Hardware Procurement	Determine the full scope of hardware purchases that should be incorporated; identify known exceptions as well as recommend a process to approve requested exceptions	• Immediate cost savings due to economies of scale
Cloud Email/ Calendaring	Determine which system meets all legal requirements; engage campus in developing transition plan to ensure all technical and service issues are addressed; complete the IT infrastructure assessment *(Start-up funds for this initiative equal approximately $300,000. These funds will not be expended on email/calendaring until the infrastructure assessment is complete to ensure they are not needed to address other immediate infrastructure issues.)*	• Security *(better controlled access to network/systems)* • Immediate and long-term cost savings *(less staff time spent maintaining equipment, less equipment/storage to maintain, less time spent coordinating calendars)*
Help Desk Support	Purchase the IT Service Management Product (creates a ticketing system that can be shared across units and users can track) *(Further assess if additional help desk consolidations/coordination are advisable through the long-term assessment process led by Harvey Blustain)*	• Long-term savings due to increased staff efficiencies

IT Investments

Process for Decisions:

- President/Provost asked IT Steering Committee to prioritize necessary investments based on two thresholds: $2.75 million and $4 million

- A task force of the Steering Committee vetted the IT project ideas that had been solicited from campus as part of the Moran Technology Consulting engagement

- The IT Steering Committee recommended that the majority of the initial $2.75 million be invested in infrastructure

- The investments that were recommended beyond the initial $2.75 million threshold were forwarded to the Budget Advisory Group ("BAG") for discussion and evaluation versus other critical campus investments

- One IT project forwarded to the BAG was ultimately recommended for funding: the Electronic Workflow Project

IT Investments

Investment Decisions:

Total Additional Investment: $3.3 million ($3M recurring)

- Focuses on infrastructure

- Recommends basic security measures

- Includes several first steps on consolidation/coordination

See Appendix B for a chart detailing all funding decisions, including out-year costs.

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IT Investments

Infrastructure

- **$2 million** *($300,000 recurring)*

  Replace current core switches (2) with 4 <u>network core switches</u> to build redundancy into current network and increase network speed (from 10 Gbps to 100 Gbps)

- **$587,000** *(over $2 million likely available recurring for infrastructure, will be based on assessment)*

  Hold for spending until <u>infrastructure assessment</u> complete

  Could be used for immediate upgrades, data center consolidations, email/calendaring, business continuity assessment, or other identified needs

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IT Investments

Security

- **$80,000** *($50,000 recurring)*

  Implement <u>2-factor authentication</u> (requires users to utilize both a password and another component such as a token, PIN, or biometric for accessing sensitive systems)

- **$17,000** *recurring*

  Implement a <u>training program</u> covering topics such as phishing and malware

- **$50,000** *recurring*

  Implement a <u>security information/event management</u> (SIEM) tool that allows for a quicker, proactive discovery of unauthorized access to systems

  (This additional funding is not needed until next year as the first year of funding is already covered by Central IS.)

IT Investments

Strategic Initiatives

- **$548,000** *($271,000 recurring)*

  Launch a <u>workflow system</u>, a new set of tools that enables the University to redesign business processes and create streamlined, electronic workflows for current time-intensive paper-based processes

- **$75,000** *(recurring costs escalate based on number of users)*

  Execute an <u>IT Service Management</u> (ITSM) tool that facilitates better cross-campus communications between IT units and increases the quality of customer service (e.g., creates help desk ticket tracking system)

- **$10,000** *recurring*

  Implement a <u>content delivery network</u> (CDN) that provides a centralized means for storing and delivering static web content (e.g., images, videos) that can be utilized by all campus websites

- **$15,000** *recurring*

  Deploy <u>web services and data integration technologies</u> to implement a framework and interface (API) that allows secure and consistent access to institutional data by systems and applications

- **$75,000** to be funded next year *($4,000 recurring)*

  Assessment of needed <u>Banner</u> functionalities and migrate to next version (including training)

Campus Engagement

Continue to engage the campus in an ongoing dialogue

- Develop a website to post details on, for example, the process to-date, Moran's report, Baker Tilly's report, information on the CIO recruitment (when ready), new leadership team

- Work with the new leadership team to create a series of campus forums to get feedback on various issues (e.g., challenges to consider when implementing a single cloud tool for email/calendaring, innovative ideas, infrastructure concerns)

- Maintain ongoing relationships and briefings for the Faculty Senate and OA Council

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What We Need to Do . . .

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Over the Next 12 Months

- Engage the Campus

- Re-envision the CIO position and engage in active recruitment to hire the best candidate to move our work forward

- Implement the new governance model

- Implement short-term consolidation/coordination efforts

- Fully assess the state of our infrastructure and determine how to make strategic investments in critical areas

- Fully assess all of our IT functions/units and determine how to rationalize (i.e., consolidate/coordinate) their distribution across campus

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Chief Information Officer

- Must believe in the mission of the University of Oregon and understand the strategic role IT can play in accomplishing that mission (and, alternatively, how IT can stifle UO's ability to carry out that mission)

- Must be a senior executive who can set a vision for IT and understand how to communicate with and advise senior leaders

- Must gain the trust and respect of faculty, staff and students

- Must have the technical expertise to carry-out the job

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Update:
High Performance Computing

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HPC: 2.0 Status Update

Work to date:

- Identified initial seed and recurring funding for a new High Performance Computing facility

- Confirmed that HPC 2.0 will be a <u>core research facility</u> managed by VPRI as a subsidized recharge center, with hardware located in the Allen Hall data center

- Committee of 8 faculty and 2 staff
  - Chair: Joe Sventek (Professor and Department Head, Computer and Information Science)
  - VPRI lead: William Cresko (Associate Vice President for Research)

- Charge to committee:
  - Technical specification for new hardware and software purchases; Oversee purchase of equipment
  - Advise on appropriate staffing levels for facility
  - Advise on appropriate business model for facility and complete initial charge-back costing
  - Work within existing identified funding
  - Complete decision making, in conjunction with VPRI, by March 1, 2016
  - Open facility by July 1, 2016

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HPC: 2.0 Status Update

Work to date: (cont'd)

- Initial technical specifications for computing and storage hardware sent out

- Briefings with vendors: 5 for computing, 4 for storage, 90 minutes each

- Final technical specifications provided to vendors

- Facility Director job position

Upcoming Work:

- Launch Director Search (now)

- March-April: Finalize governance structure, business model, recharge prices/structures

- March-April: Finalize staffing plan, specific space needs, choose vendors, purchase equipment

- June: Installation

- July 1: Begin testing

- August 15: Open for business

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APPENDIX A

Bios for Interim IT Leadership

Chris Krabiel: Interim CIO

Staff Director of Finance and Operations (COE)

BS, California Lutheran University

MBA, University of Nevada-Reno

Chris Krabiel has more than 25 years of financial experience, most recently serving in the positions of Senior Vice President, Regional General Manager and Chief Financial Officer and Treasurer with Affinity Gaming, a multistate casino and entertainment company. Prior to Affinity, and since August 2004, he served as Vice President of Operational Finance of Boyd Gaming Corporation. Chris's primary responsibilities have been expanding, restructuring, building, and financing organizations and operations. During that time, he reorganized and reestablished a $500M post bankrupt company, executed acquisitions and divestures, and implemented key business strategies for companies, including integrating IT, Finance and Marketing systems and organizational structures across large organizations for Las Vegas based gaming companies.

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Bios for Interim IT Leadership

Joe Sventek: Infrastructure Lead

Professor and Department Head, Computer and Information Science

BA, Mathematics, Rochester

PhD, Nuclear Chemistry, Berkeley

Joe Sventek is a Professor and Department Head in the Department of Computer and Information Science at the University of Oregon. He also is currently the lead for the University's efforts around *High Performance Computing*. Prior to joining the University of Oregon, Joe was a member of technical staff, Lawrence Berkeley National Laboratory, Berkeley, CA; deputy chief architect, Advanced Networked Systems Architecture project, Cambridge, England; distinguished engineer, Hewlett-Packard Laboratories, Palo Alto, CA; director, Agilent Labs Scotland, Edinburgh, Scotland; Professor of Communication Systems, Department of Computing Science, University of Glasgow, Glasgow, Scotland; and Head of School of Computing Science, University of Glasgow, Glasgow, Scotland.

Bios for Interim IT Leadership

Miriam Bolton: Staff Management Lead

BA, Sociology, University of Oregon

Miriam Bolton is Assistant Dean for Administration and Operations for the College of Arts and Sciences at the University of Oregon. Prior to joining CAS, Miriam was the Executive Assistant to the Dean of the Lundquist College of Business after serving as Executive Assistant to Provost Linda Brady. As a member of the CAS Leadership Team, Miriam works closely with the Dean, associate deans and other leadership across campus. Issues include collective bargaining agreements, departmental governance documents, merit and equity increases, faculty grievances as well as officer of administration complaints. She serves as a liaison for 43 department and program heads, working to solve problems, answer questions, and communicate priorities and expectations from the Dean and central administration.

Miriam has been an active participant in campus governance and has extensive and diverse university service including the Campus Planning Committee, four years on the Officers of Administration Council (three as chair), three years on the University Senate Executive Committee, and membership on the 2012 Presidential Search Committee. She was the 2015 recipient of the University Senate's Officer of Administration Award for Distinguished Leadership and Service.

Bios for Interim IT Leadership

Harvey Blustain: Consolidation Lead (Consultant)

BA, New York University

M.Phil. and Ph.D., Anthropology, Yale

Harvey Blustain has consulted to universities and colleges for 17 years, first as northeast regional Director in the PricewaterhouseCoopers higher education consulting practice and then as founder and president of Act IV Consulting, Inc. He has helped scores of institutions solve problems related to planning and organizational effectiveness, and has had experience consulting in all academic and administrative areas of higher education. Prior clients in IT include:

Thomas Jefferson University. Harvey developed a strategic plan for the IT function. Subsequent follow-on engagements focused on developing an IT governance structure, convening a university group around management of demographic data, and developing staffing and support plans for specific administrative systems.

Tufts University. Harvey advised on roles, structure, and accountabilities for central and departmental units responsible for academic (research, teaching and learning, and computational) technologies. The project looked at resource allocations required for the institution to maintain currency in technology, meet service demands, and ensure fiscal viability.

APPENDIX B

IT Investments

Project	Year 1	Year 2	Year 3	Year 4	Year 5
IT Infrastructure: Core Network Switches	$2,000,000	$300,000	$300,000	$300,000	$300,000
IT Infrastructure: Hold for spending until assessment complete	$587,000	$2,285,000	$2,285,000	$2,285,000	$2,285,000
IT Security: Security Information/event Management (SIEM)	*Already funded from Central IS funds*	$50,000	$50,000	$50,000	$50,000
IT Security: Two-Factor Authentication	$80,000	$50,000	$50,000	$50,000	$50,000
IT Security: Awareness Training	$17,000	$17,000	$17,000	$17,000	$17,000
Strategic Investment: ITSM Product	$75,000	$150,000	$161,250	$173,344	$186,345
Strategic Investment: CDN	$10,000	$10,000	$10,000	$10,000	$10,000
Strategic Investment: Web services and data integration	$15,000	$15,000	$15,000	$15,000	$15,000
Strategic Investment: Banner ERP Evaluation & Upgrade	-	$75,000	$4,000	$4,000	$4,000
Strategic Investment: Enterprise Workflow	$548,000	$271,000	$271,000	$271,000	$271,000
Totals	**$3,332,000**	**$3,223,000**	**$3,163,250**	**$3,175,344**	**$3,188,345**