



# **THE UNIVERSITY OF MAINE**

## **Information Technology Strategic Plan**

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**FINAL DRAFT for ITAC Discussion**

Prepared for:

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## Acknowledgements

The members of the UMaine Core Team met for many hours over the course of several months to develop this Plan that considered multiple options for the University's technology plan, and then worked to articulate UMaine's strategic information technology priorities. The team's tireless efforts have provided the direction for the next steps in this process.

Core Team members were:

- Joyce. V. Rumery, Dean of Libraries (Core Team Chair)
- Gail Garthwait, College of Education and Human Development
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- Kenda Scheele, Division of Student Affairs
- Charles Slavin, Honors College
- Jeffrey St. John, Center for Excellence in Teaching and Assessment (CETA)
- Benny A. Veenhof, Auxiliary Services

We would also like to thank the executive sponsors of this planning process, Janet Waldron and Sue Hunter for their unwavering support and guidance.

## **Executive Summary of the Information Technology Strategic Plan**

The following document presents the University of Maine's (UMaine or University) Information Technology (IT) Strategic Plan (Plan). This Plan is the culmination of a comprehensive IT assessment and planning process, which included input from over 100 University stakeholders representing students, faculty, staff and senior administration.

### ***Background on how the Plan was Developed***

In December 2010, the University of Maine (UMaine) engaged BerryDunn to undertake a University-wide IT assessment and strategic planning project. This project was sponsored by two executive leaders at the University: Susan J. Hunter, Senior Vice President for Academic Affairs and Provost, and Janet E. Waldron, Vice President for Administration and Finance. The project was also supported by President Paul Ferguson and Michael Eckhardt, Vice President for Research.

The sponsors' intention in directing this effort was to establish a strategic plan for addressing academic, research, public service, administrative, and operational IT needs within a unified framework for IT management.

### ***UMaine's Leadership Role***

UMaine is the state's flagship university, as well as the largest member of the University of Maine System (UMS). As the state's Land and Sea Grant institution with both a research and an academic mission, UMaine has unique and significantly greater IT needs, and capacity, than other campuses in the UMS.

Drafted by a collaborative team of University leaders representing academic, administrative, and student interests, this Plan is intended to be adaptive, flexible, and sustainable in order to address UMaine's needs now and in the future. The Plan does this by establishing IT management and planning structures that will lead to improved collaboration and better use of resources. The Plan also identifies opportunities for UMaine to improve and expand existing IT services and resources in a cost effective manner. Collectively, the components of the Plan form a foundation that will support the essential role of technology and the growing need for technology leadership at UMaine.

### ***Planning for Future IT Challenges and Opportunities***

This IT Plan has been developed to be bold yet pragmatic in an environment where resources and expenditures are expected to remain near steady despite increased demands for technology services. Along with establishing strategic themes to guide IT decision-making and emphasizing increased collaboration efforts, this Plan seeks to optimize the University's

resources and leverage its strengths to meet growing demands while recognizing the fiscal realities that UMaine will face in the years to come.

All of the initiatives presented in this plan are important. However, these are essential and following the initiatives will be critical in supporting the success of the remainder of the Plan and are therefore identified as “Foundational.”

**1. Establish a new CIO role to champion UMaine’s IT vision and a University-wide IT governance structure that fosters a transparent process for oversight, communication, and the strategic direction of IT at UMaine.**

The University needs to establish a new CIO position that will have overall responsibility for technology leadership and has the ability to provide direction on technology decisions across UMaine. The CIO will be responsible for maintaining communication and collaboration across UMaine’s entire IT community.

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

This Plan puts forth a new model for IT governance that seeks to enhance communication, places technology users at the center of decision-making, creates technical standards, and aligns decisions with the University’s strategic direction through the creation of two new committees that will serve distinct roles.

The first committee will provide recommendations and direction that will guide IT-related planning and will inform senior executive decision-making at UMaine. The second group will serve as the primary body to evaluate IT standards and operations under the guidance of the CIO.

**2. Develop a campus-wide IT funding model that focuses limited dollars on strategic spending while reducing non-strategic IT spending over the next five years.**

Strategic IT spending is characterized by innovation and alignment with the University’s overall mission and values. The University seeks to shift emphasis away from administrative and commodity IT support services (e.g., maintenance, hardware, licensing) and towards academic, research, and value-added services that support the University’s core mission. To an extent, this has been accomplished by consolidating many enterprise applications (PeopleSoft, Blackboard, etc.) within the UMS office.

In addition, current UMaine spending on IT lags behind others. Based on research conducted with leading research institutions (Case Western, Purdue, and Michigan – see Appendix E) along with other research conducted with Educause, UMaine is below average in current IT spending as a percentage of total institutional budget. Educause data indicate that doctoral institutions have an average three percent of the total institutional budget going to “central IT” and UMaine currently allocates half that amount.

The following table outlines current UMaine IT spending vis a vis these other universities. Please note that these data only reflect “central IT”, granting that there are many more IT resources on the UMaine campus that probably should be considered, and UMaine would still spend significantly less per student on IT. For more details, please see the Initiatives Matrix on page 54.

	Purdue University	Case Western Reserve	University of Michigan	University of Maine
<b>Students</b>	39,726	9,837	41,185	11,501
<b>Total Campus Budget</b>	\$1.8B (FY10-11)	\$900 M	\$3.1 B (FY 12)	\$220.9 M <sup>1</sup>
<b>Central IT Expenditures (\$)</b>	\$60.8 M	\$ 38 M	\$117.9 M	\$3.4 M
<b>Central IT Expenditures as % of Total Campus Budget</b>	3.4%	4.2%	3.8%	1.5%
<b>Central IT Spending per FTE Student</b>	\$1,530	\$2,643	\$2,863	\$296

### 3. Assess and align IT resources at UMaine in order to improve collaboration and optimize the delivery of IT services.

The University can improve the quality and efficiency of its IT services by better aligning existing IT resources. Organizational alignment of IT resources will help the University develop an effective service delivery model that delineates which services are delivered by UMIT, distributed IT, and UMS IT. This understanding becomes the baseline for establishing a service delivery framework that is supported by a campus-wide IT approach to planning for IT services. With a communications strategy that utilizes multiple channels, including the IT service catalog, the portal, and the help desk, UMaine can also improve awareness for IT services and ease of service requisition. As part of this strategic planning process an IT service delivery grid was

<sup>1</sup> Number is for the Education and General Fund Budget FY 2011

developed which will provide additional guidance on this initiative. The IT service delivery grid can be found in Appendix C of this report.

### ***Getting Started with the Plan***

Implementing the Plan will require a collaborative process that targets outcomes supported by the campus community. Gaining and maintaining the support of the campus will require clear and consistent communication on behalf of University leadership throughout the implementation process.

Throughout development of this Plan, UMaine has undertaken a collaborative approach to technology planning. This has provided a framework for input from academic, student, and administrative stakeholders along with campus leadership into the decision-making process around technology at UMaine. To this end, we have included a section that is dedicated to communicating and sustaining the Plan. This section follows the IT strategic initiatives section of the Plan.

The process of hiring a CIO at UMaine could take several months. However, implementing the recommended IT governance structure should begin immediately and be the top priority in preparing for this new position. IT governance, in particular, should not rely upon individuals. This will provide the framework to support many of the other IT changes that have been identified in the Plan.

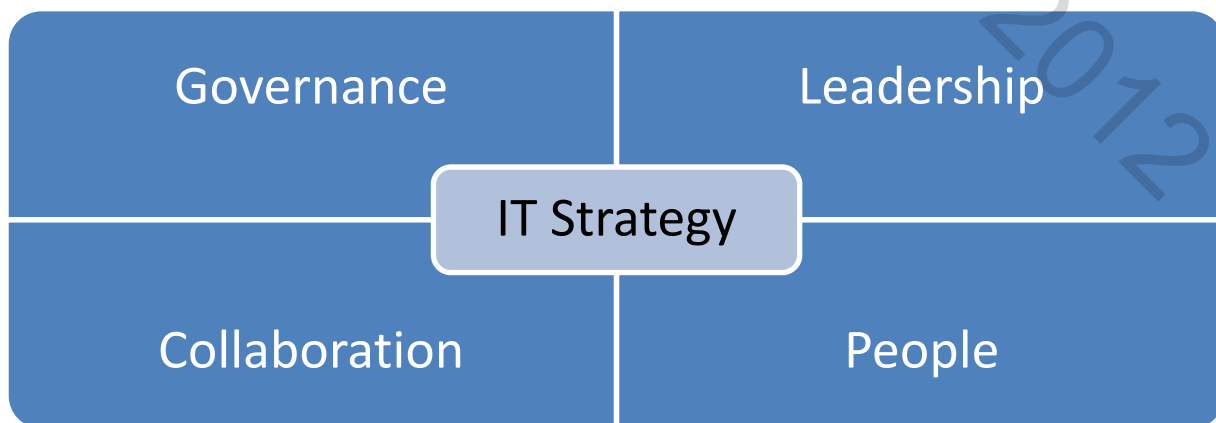
## Preamble of the UMaine IT Strategic Plan

UMaine is the leader in post-secondary teaching, learning, research, and outreach in the State of Maine. IT should support the strategic priorities of the University. This Plan seeks to position the University to strengthen its role as a technology leader. Throughout the development of the Plan, the following questions were regularly considered:

- **Pedagogy.** How can IT improve teaching and learning?
- **Innovation.** How can IT support research, entrepreneurship, and collaboration that drive economic development?
- **Services.** How can IT ensure that UMaine faculty, students, researchers, and staff have access to the tools that allow for the dissemination and sharing of information to the larger UMaine community?

This Plan seeks to be bold, but pragmatic, in answering these questions in the age of the “New Normal,” which in its essence means doing more with less. The Plan conveys this strategy by focusing on four elements that serve as cornerstones. These are:

1. **Governance.** IT is a strategic asset of the University and is critical for all students, faculty and staff to succeed. Accordingly, the IT Governance structure should function to support IT decisions across the entire UMaine organization.
2. **Leadership.** In order to implement the Plan, UMaine will need to increase the effectiveness of the IT organization and the visibility of IT in strategic planning at the University.
3. **Collaboration.** IT resources must be better utilized at UMaine. This will require improved coordination and communication of the services provided by the approximately 100 IT staff at the University.
4. **People:** Both in supporting the long-term viability of this Plan and in understanding that technology continues to change rapidly; it is people that are strategic to the University’s mission and future success.





## The UMaine Mission

The Core Team developed the Plan to support UMaine's mission. The Plan components, including the strategic themes and the initiatives, are designed to position IT services and resources as strategic assets that support integrated teaching, research, and outreach. The mission is included below as a reminder of the common purpose that unifies the UMaine community.<sup>2</sup>

*The University of Maine advances learning and discovery through excellence and innovation in undergraduate and graduate academic programs while addressing the complex challenges and opportunities of the 21st century through research-based knowledge.*

*Opportunity for all members of the University of Maine community is a cornerstone of our mission. The University welcomes students, research partners and collaborators into an atmosphere that honors the heritage and diversity of our State and nation.*

*Founded in 1865, the University of Maine is a Land and Sea Grant institution and the flagship campus of the University of Maine System. This vibrant and dynamic University serves the residents of Maine, the nation, and the world through our acclaimed programs in teaching, research, and outreach.*

*Inspiring and dedicated teaching propels students into new fields of learning and promotes interdisciplinary understanding. Our educational goal is to help students develop their creative abilities, communication, and critical thinking skills, and understanding of traditions in ethics and rationality within the arts, sciences, and professions.*

*Internationally recognized research, scholarship, and creative activity distinguish the University of Maine as the State's flagship University, where faculty and students contribute knowledge to issues of local, national, and international significance. As the State's doctoral-granting institution, research and education are inextricably linked.*

*Comprehensive outreach, including public service, Cooperative Extension, continuing education, and distance learning, engages learners of all ages in improving their lives and communities. Using research-based knowledge, outreach efforts promote sustainable use of Maine's abundant natural resources and build intellectual, cultural, and economic capacity throughout Maine and beyond.*

*Through integrated teaching, research, and outreach, the University of Maine improves the quality of life for people in Maine and around the world, and promotes responsible stewardship of human, natural, and financial resources.*

*Approved by the University of Maine System Board of Trustees  
November, 2010*

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<sup>2</sup> <http://umaine.edu/about/umaine-mission/>

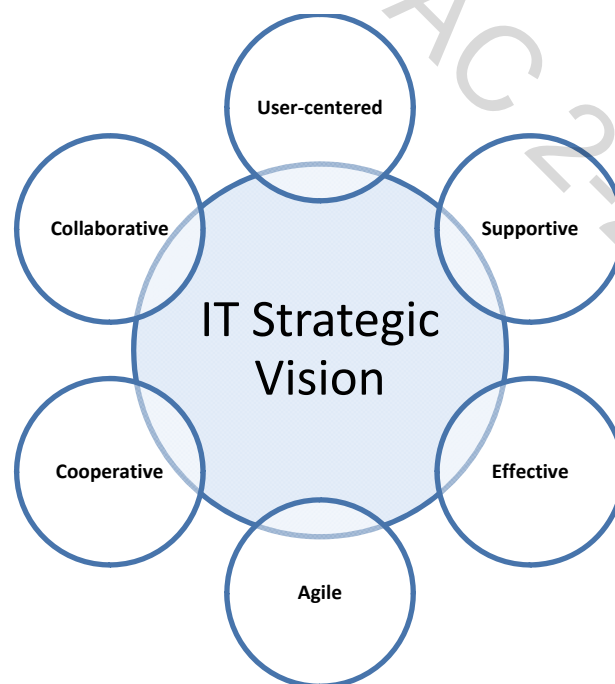
## UMaine IT Strategic Themes

During the planning process, the Core Team identified a set of strategic themes to govern actions and decisions related to IT at UMaine. These themes align with the objectives of UMaine, as described in the mission statement, and are the backbone of the Plan.

IT at UMaine will be:

1. **User-centered** by being responsive to the technical needs of all users.
2. **User-centered** by being responsive to pedagogical needs of faculty, learning needs of students, research requirements of scholars, and administrative needs of UMaine's staff and leadership.
3. **Supportive** of our learning community in a manner that is characterized by security, transparency, and accountability.
4. **Effective** in terms of a balancing affordability with campus mission and energy efficiency.
5. **Agile** in promoting or adapting quickly to innovations in the IT field.
6. **Collaborative** with distributed IT, UMS IT and other UMS campuses when aligned with our mission and goals while providing IT leadership in Maine.
7. **Cooperative** in using IT to fulfill service obligations to the people of Maine in the area of IT.

The following diagram depicts how these strategic themes are intended to collectively support a central vision and purpose for IT at UMaine.



## IT Strategic Initiatives

The following table presents the initiatives that comprise the IT Strategic Plan. The table includes the initiative title and a brief description of the initiative in the form of an action statement.

All of the initiatives described in the Plan are important. However, certain initiatives will have a fundamental impact on the way that IT contributes to the overall success of the University. In order to guide the University as it plans for implementing these initiatives, the Core Team has organized the initiatives into three prioritization categories. These categories include Priority 1, Priority 2, and Strategic Projects and Programs. The initiatives are prioritized based on the following criteria:

- **Foundational** – Initiatives that address core, fundamental issues. Progress in these initiatives is necessary for the University’s ability to successfully implement other initiatives in the Plan.
- **Customer Service / Return on Investment** – Initiatives that are expected to have broader impact on the University, financially and/or qualitatively, receive higher priority ratings. In addition, impact on customer service is emphasized.
- **Capacity Building** – Initiatives that expand the ability to deliver services and support resources that bring value to the University.

**Table 1: Strategic Initiatives**

	#	Initiative Title	Initiative Description
PRIORITY LEVEL 1	1.	IT Leadership and Governance	Establish a new CIO role to champion UMaine’s IT vision and a University-wide IT governance structure that fosters a transparent process for oversight, communication, and the strategic direction of IT at UMaine.
	2.	Fiscal Management	Develop a campus-wide IT funding model that focuses limited dollars on strategic spending while reducing non-strategic IT spending over the next five years.
	3.	Organizational Alignment	Assess and align IT classified and professional resources at UMaine in order to improve collaboration and optimize the delivery of IT services.
PRIORITY LEVEL 2	4.	Training and Professional Development	Establish a consistent educational development model that provides faculty, staff, and students with baseline IT knowledge as well as ongoing IT training and professional development opportunities that support innovation.

	#	Initiative Title	Initiative Description
	5.	Help Desk	Establish a single point of contact (SPOC) for the help desk in order to proactively measure, manage, and respond to user demands for IT support.
	6.	Learning Space IT Support Model	Establish a learning space technology support model that improves the effective use of IT to support pedagogy.
	7.	Technology Support for and Collaboration with Distance and Online Learning	Expand IT support and collaboration for distance and online learning.
	8.	IT for Research	Develop a campus-wide strategy to improve the IT infrastructure for research in Maine.
STRATEGIC PROJECTS AND PROGRAMS	9.	IT Refresh and Reassessment	Develop the existing IT refresh program to include a comprehensive refresh model that is informed by an ongoing technology reassessment policy.
	10.	Application Virtualization	Expand application virtualization to improve access to common software for remote and mobile users, and to improve license management.
	11.	IT Service Catalog	Extend UMaine's current IT Service and Resource Catalog to establish a comprehensive first-stop resource that promotes awareness for and use of IT services and resources.
	12.	Learning Management System	Establish standards for a Learning Management System that aligns with the needs of UMaine.
	13.	E-Mail	Investigate strategies for minimizing the number of e-mail systems that all faculty, staff, and students use.

**Key to Reading the Initiatives:** Each of the strategic IT initiatives is described using the following template. This template contains fields that will guide UMaine in implementing the initiatives that comprise the Plan. The following initiative template provides a description for each of these fields.

Initiative Number and Title	
<b>Initiative action statement.</b> Detailed description of the initiative and how it is relevant and important for the Plan.	
<b>Initiative Owner</b>	Identifies the initiative owner. Each owner is responsible for directing the successful implementation of this initiative.
<b>Consultative Role</b>	Others who have a consultative role are also identified.
Budget Estimate	
An estimate of direct costs (e.g., procurement of technology, funding for additional personnel, etc.) and indirect costs (e.g., staff time) are identified in the budget description section. The costs identified herein reflect either projected cost savings and/or cost increase that deviate from current spending levels related to this initiative. This information is also reflected in the Strategic Initiative Matrix (see Appendix D).  <i>Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.</i>	
Action Items to Implement Initiative	
<ol style="list-style-type: none"> <li>1. Identifies high level steps for successfully implementing the initiative.</li> <li>2. These action items are intended to provide key milestones for implementing the initiative.</li> <li>3. Like the budget description, the action items are intended for high level planning purposes only. Many of the initiatives will require a comprehensive project plan that is developed in accordance with project management best practices.</li> </ol>	
Anticipated Benefits	
<ul style="list-style-type: none"> <li>• Bullet points that identify anticipated benefits.</li> </ul>	
Measures of Success	
<input checked="" type="checkbox"/> Methods for monitoring the success of the initiative. These measures can be qualitative or quantitative in the form of metrics, customer feedback, realization of cost efficiencies, etc.	
Contextual Information	
Information gathered from other universities and/or higher education data sources that demonstrate the importance and potential impact of the initiative.	

**Initiative #1 – IT Leadership and Governance**

**Establish a new CIO role to champion UMaine’s IT vision and a University-wide IT governance structure that fosters a transparent process for oversight, communication, and the strategic direction of IT at UMaine.**

As the State’s flagship institution, UMaine has a unique role in providing IT leadership to the campus and beyond.

**Chief Information Officer (CIO) role.** This new position will deliver broad-based leadership for organizational synergy that coordinates academic, research, student-related, and administrative IT services to ensure an efficient and effective customer-centric delivery of IT services and platforms. The CIO will also ensure the Plan is implemented and evaluated by performance-driven metrics.

The CIO requires sufficient authority to influence the outcomes of major decisions about IT at UMaine. The CIO also requires the ability to directly work with UMS on IT related decisions that are critical to UMaine’s strategic objectives. This will be vital in advocating for UMaine with the UMS leadership.

This new position will serve as the primary liaison to the UMS IT organization and present a unified vision and voice for UMaine’s IT priorities. The newly formed CIO position will be part of the SCIT, but not necessarily the Chairperson. In addition, the CIO will serve as the Chairperson of BRITE. (Please see below for more details on these groups.)

**Governance.** IT governance should enable leaders to receive broad input, make informed decisions, and prioritize, fund, and implement meaningful IT projects and initiatives. Specifically, this model should define the IT budgeting cycle, and establish a sustainable and transparent process that includes a variety of ways that allow for all IT stakeholders to be heard, and also establishes a clear process for IT decision-making. The IT governance model is intended to align IT strategic planning with campus strategic planning, prioritize IT projects and resources across the campus, and to promote both collaboration and efficiency across the entire IT community.

**Structure.** The Core Team recommends creating two complementary groups that serve distinct roles in supporting IT governance. One group will consider, prioritize, and bring recommendations to executive leadership, and a second group that represents experienced and knowledgeable technical perspectives that advises the decision-making body and the CIO.

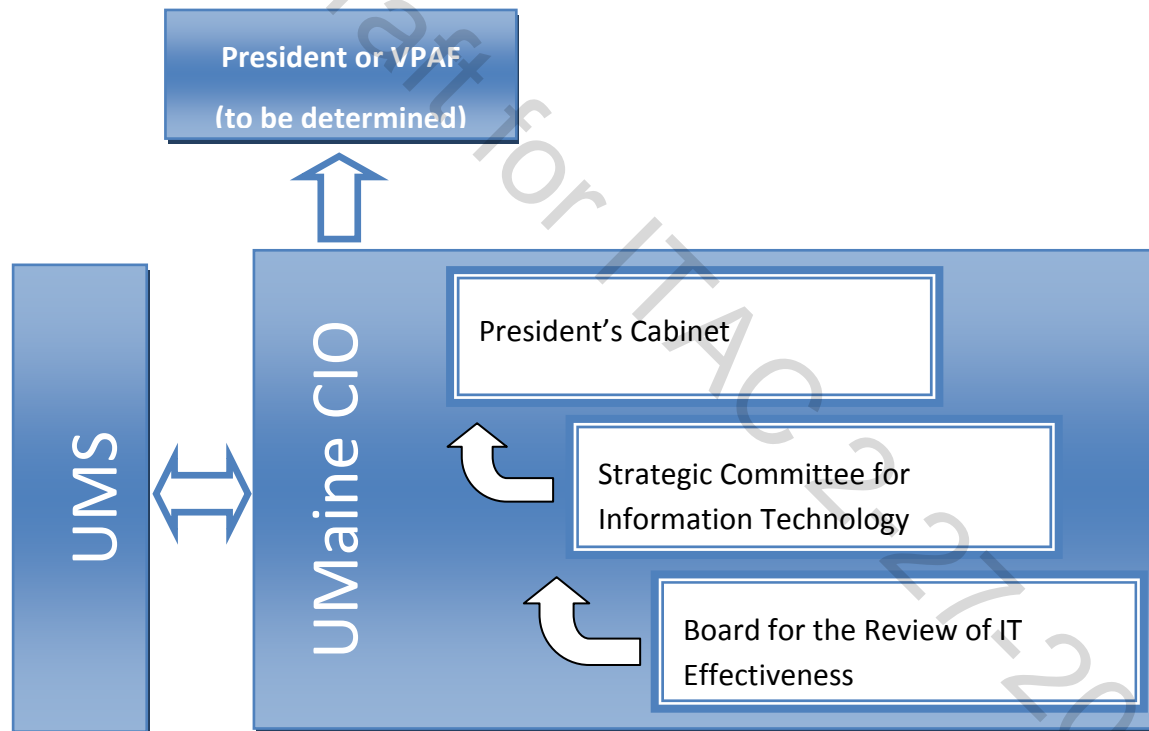
The first group, the **Strategic Committee for Information Technology (SCIT)** would be responsible for providing recommendations to senior executive leadership at UMaine. Namely, the President, Provost, Vice President for Administration and Finance, and Vice President for Research. The UMS CIO will serve as a non-voting member. The SCIT would provide a cross-

### Initiative #1 – IT Leadership and Governance

functional group of not more than ten mid to senior level personnel at the University who bring perspective on academic, student-related, operational, research, and administrative directions.

The second group, the **Board for the Review of IT Effectiveness (BRITE)** would serve as the primary body to evaluate IT standards and operations under the guidance of the SCIT. This team would consist of IT practitioners and student representation. One of their first initiatives would be to establish a Technical Reference Model (TRM) to serve as a baseline for introducing new technologies at UMaine and determining if existing services can meet new needs as they are requested by the community at-large.

Establishing University-wide IT governance does not happen overnight. It is a multi-year effort that requires the consistent support of the University's leadership team, and engagement of the IT community. The following graphic provides an overview of the governance elements:



<b>Initiative Owner</b>	President
<b>Consultative Role</b>	Provost, Vice President for Administration and Finance, Vice President for Research, Human Resources, IT governance committee, UMS IT

## Initiative #1 – IT Leadership and Governance

### Budget Estimate

This will require a new position that will require new funding.

The starting salary for the new CIO is estimated at \$125,000, plus 50% for benefits. Due to current fiscal conditions, this estimate does not include cost of living increases.

**Each Year:**  $\$125,000 + (50\% \times \$125,000) = \$187,500$

There is minimal budget impact for the Governance changes, but it will require strong participation and the committed involvement of executive sponsorship.

*Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.*

### Action Items to Implement Initiative

1. Identify permanent funding for the new position.
2. Develop a job description that reflects the objectives set forth in the strategic plan. The job description should be developed by the IT Governance in accordance with established HR policy.
3. Conduct a competitive national search to identify and hire a CIO that will serve the needs of UMaine's diverse IT community.
4. Adopt Governance Plan.
5. Communicate new model to entire University.
6. Identify Committee members and Board members.
7. Establish Planning Cycle.

### Anticipated Benefits

- Improved coordination of planning, communications, and overall technology management that results in improved technology services at UMaine.
- Increased visibility of IT services and accomplishments across the University, UMS, and the State of Maine.
- Improved effectiveness, visibility and transparency of IT operations across the University.
- Increased consensus among stakeholders with respect to decisions relating to major projects,



### Initiative #1 – IT Leadership and Governance

especially as relates to selection, acquisition, development, and installation of major information systems.

- Reduce costs and complexity through integrated processes.
- Clarification of roles and responsibilities vis á vis UMS IT.
- Increased communication and cooperation across all levels of IT organization.
- Improved IT service delivery at UMaine.

#### Measures of Success

- ☒ Implementation of IT strategic initiatives presented in this Plan.
- ☒ Establishment of the IT governance structure.
- ☒ Improved customer feedback.
- ☒ Increased levels of participation by IT stakeholders.

#### Contextual Information

“In the modern University, information management is, or should be, at the heart of both strategic and operational management. This is not an argument for the CIO to run the institution, but the CIO role should be conceived with an institution-wide brief to influence vision and strategy and to ensure consistency in planning and implementation of services – in short, to provide leadership.”<sup>3</sup>

At **Purdue University**, the IT Plan adopted in March 2010 identified several key guiding principles to be critical to good information technology governance going forward. These were:

- Client centered – tightly and formally linked to the needs of the clients of information technology;
- Effective – delivering solutions that meet the client needs, in the view of the client;
- Agile – able to adapt quickly to an ever changing environment;
- Responsive – having ownership of the client’s information technology needs and their quick resolution;
- Affordable – sensitive to the cost effectiveness of solutions;
- Appropriately co-located - staff distributed close to the client to foster responsiveness and understanding.

<sup>3</sup> Hanson, Terry. “Developing an Information Strategy.” [Educause Review](#), November 2011.

**Initiative #1 – IT Leadership and Governance**

**University of Michigan** recently redesigned their governance structure in order to eliminate redundancies and to be more cost efficient. Before the restructuring initiative, the University had more than 40 e-mail systems, 26 lecture capture systems, and other instances of multiple support structures and technologies stemming from their decentralized IT model.

Due to their findings of redundancy, the University created a governance model that better addressed the priorities on campus and changed the way that IT funding was allocated to academic units. The new governance structure is based on the four missions of the University: teaching and learning, research, knowledge, and patient care. Each one of the domains is represented by a faculty member, along with IT providers, students, and administrators. Together, they form the IT Council, a group that represents the collaborative IT efforts on campus, and meets on a monthly basis to discuss and decide on IT issues. The IT Council has developed a list of initiatives that it plans to undertake and oversee in the future, including the consolidation of IT services into a more centralized model.

## Initiative #2- Fiscal Management

**Develop a campus-wide IT funding model that focuses limited dollars on strategic spending while reducing non-strategic IT spending over the next five years.**

**Strategic Spending.** Strategic IT spending is characterized by innovation and alignment with the University’s mission and values. The University seeks to shift emphasis away from administrative and commodity IT support services (e.g., maintenance, hardware, licensing) and towards academic, research, and value-added services that support the University’s core mission. To an extent, this has been accomplished by consolidating many enterprise applications (MaineStreet<sup>4</sup>, Blackboard, etc.) within the UMS office.

**Doing More with Less.** As all institutions attempt to meet the reality of the “New Normal,” IT is no exception. The University must identify ways to do more with less. This requires a campus wide review of identified IT personnel, services, and the role of UMS IT vis á vis the University.

This initiative does not mean that all departments will lose funding. As evidenced by contextual research, the goal should be to issue a challenge to Deans and Department heads to identify IT cost savings (in collaboration with IT personnel) that can then be re-invested into their respective organizations.

<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	Vice President for Administration and Finance, UMS IT
<b>Budget Estimate</b>	
This initiative is not directly linked to a specific dollar figure. The objective of this initiative is to find opportunities to reduce non-strategic (operational) spending of IT funds, and provides UMaine with more flexibility to reallocate spending to areas that differentiate the University’s mission and strategic priorities (strategic spending).	
<b>Action Items to Implement Initiative</b>	
<ol style="list-style-type: none"> <li>1. Define what is operational vs. non-operational IT spending within the University.</li> <li>2. Identify current ratios of operational and non-operational spending on IT.</li> <li>3. Establish timeline for shifting ratio of non-operational IT spending.</li> </ol>	

<sup>4</sup> MaineStreet is UMaine’s implementation of PeopleSoft ERP system.

Initiative #2- Fiscal Management
Anticipated Benefits
<ul style="list-style-type: none"> <li>Limited dollars are allocated to value-added IT services.</li> <li>Improved efficiencies between both UMaine’s central and distributed IT.</li> <li>Reduced duplicative IT services across the UMaine campus.</li> <li>Create new funding streams (as a result of cost savings) to spur IT innovation and discovery at UMaine.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Reduce overall IT operational spend by 5% at UMaine.</li> <li><input checked="" type="checkbox"/> Shift non value-added IT services to UMS IT or other sources.</li> </ul>
Contextual Information
<p>Current ratios of operational spending at benchmark Universities:</p> <ul style="list-style-type: none"> <li><b>Purdue University.</b> According to the CIO, estimates are that 80% plus of IT dollars are still spent on operational IT spending, but this is being targeted for reduction.</li> <li><b>Case Western.</b> As part of the “Operational Excellence” initiative outlined in the benchmark research, IT spending ratios were targeted within Central IT. At the beginning of the effort, 86% went to “administrative IT” spend in the central IT department and that number is now estimated to be less than 75% and dropping.</li> <li><b>University of Michigan.</b> The established IT governance model is intended to “better integrate IT strategic planning with campus strategic planning; set campus-wide priorities for IT resources, services and facilities; provide guidelines and support for similar determinations at the unit level; and make decisions employing a campus-wide funding model still under development that rewards cost-effectiveness and discourages non-strategic IT spending<sup>5</sup>.”</li> </ul>

<sup>5</sup> IT Governance. University of Michigan. 23 November 2011. <http://cio.umich.edu/governance/>

**Initiative #3- Organizational Alignment**

**Assess and align IT classified and professional resources at UMaine in order to improve collaboration and optimize the delivery of IT services.**

**IT Resources.** UMaine has both centralized (UM IT) and decentralized (Distributed IT) IT services on campus. Centralized services on campus are led by the Executive Director of IT, who reports to the Vice President for Administration and Finance. Distributed IT resources are spread throughout the University and have varying reporting and management structures that are dependent on the department or school for which they work (as identified in the previous IT Assessment there are approximately 100 staff identified as IT staff throughout the University currently). In addition, there are no permanent IT staff positions supporting Research operations at the University.

**Evaluation.** UMaine will need to evaluate its current organization structure for all IT personnel across the University. It is likely that some consolidation will be beneficial, but it is not the recommendation of the Core Team to consolidate all IT staff under UM IT. The focal point of this exercise should be on aligning staff skills and resources with the IT services that the University of Maine should be delivering. Please see the IT Service Delivery Grid (Appendix C) for a partial inventory of current IT services and corresponding descriptions of the desired service delivery structures.

**Improving Staff Alignment.** UMaine can increase the effectiveness and efficiency of the entire IT community by improving its staff alignment. This should be done by standardizing job titles, identifying opportunities for increased collaboration between UM IT and distributed resources (and/or UMS) and developing mechanisms that ensure staff evaluations are done in a consistent manner regardless of where IT staff reside. Identifying the individuals that comprise the IT community will be a key first step in effectively executing this initiative.

To be continually adaptive, establish a mechanism to review positions as they become available. IT classified positions should be considered based on the following criteria:

- **Replace.** The IT position should remain as is. Hire new staff when available.
- **Refine.** The IT position is no longer needed in its current capacity, but the resource is needed to support IT operations. Determine new reporting structure (if necessary) and revise description as necessary.
- **Remove.** The IT position is no longer relevant to the current IT organization or this IT service(s) is no longer provided by UMaine. Do not fill this position and remove from the organization chart.

Initiative #3- Organizational Alignment	
<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	Vice President for Administration and Finance, Vice President for Research, Provost, Human Resources, Student Affairs
Budget Estimate	
<p>Over the first two years, costs will be incurred based on time spent identifying IT staff, interviewing IT staff, gathering information, analyzing results, and formulating recommendations. We expect that this will take approximately 800 hours (500 in year 1, and 300 in year 2), and have applied an internal rate of approximately \$100 per hour.</p> <p><b>Year 1:</b> 500 hours x \$100 = \$50,000</p> <p><b>Year 2:</b> 300 hours x \$100 = \$30,000</p> <p>However, the long-term result should be zero-sum, or even cost savings as redundancies are eliminated and the coordination of IT services improves. Savings can be achieved by consolidating positions based on this review. For planning purposes we have estimated a reduction of 5 positions as staff retire or resign (3 in FY 2014, and 2 in FY 2015). Calculations are based on an average of \$60,000 (salary and benefits) per IT staff.</p> <p><b>Year 3:</b> 3 positions x \$60,000 = \$180,000</p> <p><b>Year 4:</b> \$180,000 + (2 positions x \$60,000) = \$300,000</p> <p><b>Year 5 (no additional changes):</b> \$300,000</p> <p><i>Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.</i></p>	
Action Items to Implement Initiative	
<ol style="list-style-type: none"> <li>1. Identify the individuals that comprise the IT community. This may mean a change of Job Family from IT to a more appropriate classification.</li> <li>2. Review current job titles and descriptions for inconsistencies.</li> <li>3. Compare job functions amongst IT staff to determine if redundancies exist.</li> <li>4. Determine if current reporting structure best serves the strategic needs of the University</li> </ol>	

### Initiative #3- Organizational Alignment

for IT staff. This may require delicate negotiations.

5. Develop collaborative strategies for UMaine stakeholders to provide transparency to this process.

#### Anticipated Benefits

- Improved professional development program based on standardized job titles.
  - Better service delivery and increased staff retention.
- Identification of unrecognized skill sets that could support other IT entities on campus.
- Better understanding of IT capacity.
- Supports the development of a comprehensive IT Service Catalog.
- Improved sense of purpose and vision across the entire IT community.
- Streamlining of non-differentiating tasks (i.e., duties that could be performed by IT without impacting quality of service).

#### Measures of Success

- ☒ Savings attributable to increased coordination.
- ☒ Improved transparency of what IT staff do and whom they report to across the University.
- ☒ Ability to report on the number of IT staff that are truly performing IT functions.
- ☒ Increased cross-training of existing IT resources.

#### Contextual Information

The University of New Hampshire has successfully consolidated a large number of once-distributed servers into its enterprise data center, thus growing its own private cloud environment. The consolidation efforts have resulted in an evolution of IT job responsibilities among distributed IT staff. Staff which once filled technical needs, such as system administration, are now focused on functional needs, such as system analysis, training, and reporting that better support the core mission of the University.

In order to have better visibility into its IT staffing, the University initiated an IT Services Alignment project. In addition to laying the groundwork for a new classification system, the project revealed numerous opportunities for central and distributed IT to share resources.

#### Initiative #4- Training and Professional Development

**Establish a consistent educational development model that provides faculty, staff, and students with baseline IT knowledge as well as ongoing IT training and professional development opportunities that support innovation.**

By establishing a consistent training model that is based on the following core objectives, the UMaine community will be more effective and efficient in using IT resources, and supporting strategic innovations. The core objectives of the training model include:

1. Ensure baseline IT knowledge across IT user groups which may involve collaboration with various organizations on campus and/or be a component of the “organizational alignment.” User groups may be as small as a single department or as large as the entire campus (students, faculty, and staff). Examples of users groups may include *MaineStreet* - student records users, *Blackboard* - faculty users, and in the future, UMaine Portal users.
2. Offer and coordinate professional development resources for specialized IT knowledge to promote and/or compliment current pedagogy and innovation among interested IT users. Examples include online course design consulting for faculty who are teaching distance and online courses, and web accessibility training for web application developers.

The following paragraphs further define elements of the training initiative:

**Introductory training.** Introductory training is relevant to students, new hires and existing personnel. New hires (or employees in new roles) should undergo introductory training for core applications, systems, and processes that are relevant to their roles. Likewise, training should be part of any IT project that involves introducing new systems and resources to a group of users and must be targeted to the application of each user group.

**Supporting pedagogy.** The range of IT tools and resources available to faculty members continues to grow. Accordingly, the Faculty Development Center will expand current support and consulting resources to better support faculty who want to leverage existing and new technologies to support pedagogy. The Faculty Development Center will expand its mission to not only help faculty use IT to achieve pedagogical objectives, but also to recognize, encourage, and cultivate innovation that occurs at UMaine.

The Faculty Development Center will collaborate with the Continuing and Distance Education program, Cooperative Extension the College of Education and Human Development (for instructional IT early adopters and innovators), and the Center for Excellence in Teaching and Assessment. This ongoing coordination will enable the Faculty Development Center to maintain



#### Initiative #4- Training and Professional Development

central awareness of emerging instructional technologies and related projects at UMaine.

**Students.** Today's college students have grown up in an IT-centric world. Despite the fact that these students are often called digital natives, they are not necessarily effective digital learners. Students may know how to use certain technologies, such as social networking websites, but they may not understand how to effectively use them as learning tools. Therefore, it is important to educate students how to use IT to advance their learning and expand upon their current technological skills.

UMaine will support students in becoming better digital learners by integrating IT training into the "Orientation process" and "First Year Experience." This IT training will go beyond the basics of e-mail, word processing, and internet access by introducing students to those resources that will help them achieve their academic and extracurricular objectives as a member of the UMaine community. IT will support faculty of first-year students in integrating deeper IT learning with content material.

**IT Staff Training.** It is important for current IT staff to be properly trained on existing technologies. IT staff that participate in regular training sessions will be up-to-date in their technical knowledge and will improve their consulting skills. Training sessions for IT staff should be held annually or more often as needed to ensure that technology skill sets are current.

<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	Vice President for Administration and Finance, Human Resources, BRITE
<b>Budget Estimate</b>	

The Plan has estimated approximately \$1,000 per IT employee to fund annual technology training. The Current Environment Assessment identifies 96 FTE staff in the IT Job Family at UMaine.

**Total Budget per Year:** 96 Total FTE IT staff x \$1,000 = \$96,000

UM IT currently budgets approximately \$40,000 per year for training tools, seminars, and conferences. With 40 FTE, this is consistent with the recommended \$1,000 per employee.

**Current UM IT Spending:** \$1,000 x 40 FTE UM IT staff = \$40,000

The Plan assumes that departments with distributed IT currently budget for training of their own IT staff. However, we've estimated that training expenditures in distributed environments are lower than those within UM IT. Accordingly, we've assumed that the current budget covers

#### Initiative #4- Training and Professional Development

\$400 of training for each of the 56 FTE distributed IT staff.

**Distributed IT Spending Gap:** \$1,000 - \$400 current spending = \$600 per FTE

Consistent with the staffing changes described in the organizational alignment initiative, we've estimated additional spending needs based on 53 distributed IT FTEs in FY 2014, and 51 FTEs by FY 2015.

**Year 1:** \$600 x 56 FTE distributed IT staff = \$33,600

**Year 2:** \$600 x 56 FTE distributed IT staff = \$33,600

**Year 3:** (\$600 x 53 FTE distributed IT staff) – (\$400 x 3 eliminated positions) = \$30,600

**Year 4:** (\$600 x 51 FTE distributed IT staff) – (\$400 x 5 eliminated positions) = \$28,600

**Year 5 (no additional changes):** \$28,600

UMaine will leverage existing resources to improve training opportunities for faculty, staff, and students.

*Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.*

#### Action Items to Implement Initiative

1. Identify and assemble IT educators across campus (IT Training Working Group).
2. Identify methods for meeting IT training and professional development model objectives, including systematic needs assessment, resources and an array of appropriate support services.
3. Create a master calendar to coordinate training delivery and other educational opportunities, including a publically accessible component as necessary.
4. Identify methods for incentivizing users to attend training to encourage the UMaine community to take advantage of these opportunities (where enforcement is required).
5. Design an IT Training campaign to communicate training expectations and educational offerings and to engage users.
6. Consider an annual IT Conference and Exhibition to kick off the educational campaign. This could include an expansion of the Fall Faculty Fair, which has been in existence more than a decade. Exhibition could feature various IT resources and resource owners and would provide users with an opportunity to ask questions, to sign up for classes, and to get engaged. May also provide an opportunity to share information about alternative training

<b>Initiative #4- Training and Professional Development</b>
resources that may be available online or off campus.
<b>Anticipated Benefits</b>
<ul style="list-style-type: none"> <li>• Improved student learning.</li> <li>• Systematically supports the University's IT mission and principles.</li> <li>• Improve IT staff skills to better serve the user community and provide new services.</li> <li>• Improve staff and faculty retention through effective, lifelong learning and training and professional development programs.</li> <li>• Optimize use of core technologies, such as MaineStreet.</li> <li>• Improve productivity with existing core University practices.</li> <li>• Increase IT awareness University-wide.</li> </ul>
<b>Measures of Success</b>
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Help desk statistics demonstrate fewer basic technical skill questions.</li> <li><input checked="" type="checkbox"/> Faculty, Staff and students indicate higher levels of satisfaction with IT as identified via survey results.</li> <li><input checked="" type="checkbox"/> Staff self-assessments for technical competency are completed annually and demonstrate a high skill level.</li> <li><input checked="" type="checkbox"/> Increased student satisfaction as assessed by survey.</li> </ul>
<b>Contextual Information</b>
<p>For the past three years, Case Western University holds an annual Collaboration Technology Summit that focuses on the application of technologies as it applies to teaching, learning, and creative expression. The theme of the 2010 summit was on innovative education, international collaboration, and learning. Each summit conducts seminars and hosts speakers on various technological and educational issues, while acknowledging the “underlying theme of collaboration” between technology and pedagogy<sup>6</sup>.</p>

<sup>6</sup> CollabTech 2010. Case Western Reserve University. 23 November 2011.  
<http://www.case.edu/its/collabtech10/welcome.html>

### Initiative #5- Help Desk

**Establish a single point of contact (SPOC) for the help desk in order to proactively measure, manage, and respond to user demands for IT support.**

The help desk should be a single point of contact or single point of reference for end-users for learning about how to access any IT service across UMaine and UMS.

**Intake.** This single point of contact should be accessible by phone, drop-in, web form, and e-mail. The help desk should consider implementing a help desk mobile application. Regardless to the method, all help desk requests should be entered into the help desk ticketing system. This will allow for in-depth tracking of IT problems and will provide better data to inform various aspects of IT planning.

**Location.** In order to most effectively establish the single point of contact help desk model, computer repair staff should be in the same location as help desk services. This will eliminate the current frustrations from University customers who are confused about the various locations that provide computer help services. This will also make the IT environment more conducive for cross-training of IT staff.

**Availability.** The help desk needs knowledgeable staff with a commitment to a customer service model that aligns with the needs of UMaine. Students and faculty work daily, and the help desk function should be accessible when problems are encountered.

**Feedback Mechanism.** For each type of help desk request, customers should be presented with an opportunity to provide feedback. They will enable management to assess the customer experience and to make adjustments and modifications to the help desk model as necessary. It will also provide end users with an opportunity to be heard; whether feedback is positive, constructive, or critical.

<b>Initiative Owner</b>	Executive Director of IT
<b>Consultative Role</b>	CIO
<b>Budget Estimate</b>	

UMaine should be able to leverage existing resources to establish the single point of contact (SPOC) and improve help desk services. Over time, additional staffing resources may be necessary to support a 24/7 help desk; however, additional resources may be identified as an outcome of the organizational alignment initiative.

Initiative #5- Help Desk
Action Items to Implement Initiative
<ol style="list-style-type: none"> <li>1. Consolidate physical locations of help desk and Repair Center.</li> <li>2. Analyze help desk procedures and expectations.</li> <li>3. See Appendix A: Training Elements for training for help desk staff.</li> <li>4. Conduct awareness campaign for single point of contact services and availability.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Better data to inform IT decisions. <ul style="list-style-type: none"> <li>○ Identify training needs.</li> <li>○ Staff help desk in accordance with level of demand.</li> <li>○ Identify service deficiencies.</li> <li>○ Inform IT refresh and reassessment.</li> </ul> </li> <li>• Increase efficiency and effectiveness of help desk services by pooling resources and increasing visibility.</li> <li>• Improved customer service for students, faculty and staff.</li> <li>• Improve ability to identify and prioritize projects (i.e., recurring help desk issues may be indicative of a project).</li> <li>• Efficient IT service delivery.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Customer service surveys.</li> <li><input checked="" type="checkbox"/> Customer feedback.</li> <li><input checked="" type="checkbox"/> Help desk statistics vs. service level goals.</li> <li><input checked="" type="checkbox"/> Help desk staff satisfaction surveys.</li> </ul>
Contextual Information
<p>The ITIL framework asserts that “the Service Desk is a single point of contact for end users who need help. Without this SPOC, an organization would face major losses in time spent on looking for ways to fix issues and get help.”</p> <p>Case Western University has created a Single Point of Contact help desk. In order to provide excellent service, strong Service Level Agreements (SLA) are developed with all Case Western “customers.”</p>

## Initiative #6- Learning Space IT Support Model

**Establish a learning space support model that improves the effective use of IT to support pedagogy.**

A standard set of technology tools should be available in most, if not all, UMaine learning spaces. In order to ensure that learning space technology is effective, maintenance, support, communications, and training are essential.

**Support.** As UMaine installs more technologies for learning spaces, an effective support model is necessary. For example, classroom technology issues typically arise at the beginning of a class. Today's lesson plans are often built on the expectation that classroom technology will work. Failure of classroom technology results in an inefficient learning environment, and may even lead to class cancellation. This is an impediment to both student and faculty success. In order to ensure that classroom technology provides value in the classroom, an effective support model is critical.

**Communication.** In order to proactively manage the expectations of learning space technology, information about new IT or devices that are not operating reliably or are out of order should be communicated to users of the learning space as soon as possible. Providing advance notice will enable faculty members to plan their classes accordingly. Learning space technology should be managed with the intent to minimize 'surprises' for users.

**Standardization.** The continued standardization of learning space technology will support pedagogical flexibility by providing faculty with a consistent set of tools to promote student success. It is helpful for faculty members to feel confident in learning space technology, regardless to which room they are using.

**New Learning Space technology.** The selection of new learning space technology should be based on the collective input of faculty, students, and UM IT. This will help to ensure that new IT investments are both technically practical and pedagogically sensible. This will also be part of BRITE's responsibility in maintaining the TRM.

<b>Initiative Owner</b>	Provost
<b>Consultative Role</b>	CIO, Executive Director of IT, Faculty Senate
<b>Budget Estimate</b>	
Spending on classroom equipment is expected to remain constant, with improved hardware standardization and spending decisions that align with the strategic principles set forth in this Plan.	

Initiative #6- Learning Space IT Support Model
Action Items to Implement Initiative
<ol style="list-style-type: none"> <li>1. Assemble BRITE.</li> <li>2. Identify support model, including: <ol style="list-style-type: none"> <li>a. maximum response time/service level goals</li> <li>b. communication standards for classroom IT updates</li> <li>c. standard classroom technologies</li> <li>d. maintenance schedule</li> </ol> </li> <li>3. Communicate support model.</li> <li>4. Train A/V (classroom IT) support technicians with new support model. See Appendix A: Training Elements for training components.</li> <li>5. Integrate service level goals into individual staff performance reviews.</li> <li>6. Implement and monitor metrics stated in the support model.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Improved educational experience for all teachers and learners.</li> <li>• Increased efficiency in the classroom.</li> <li>• Increased faculty satisfaction.</li> <li>• Simplified training for faculty (standardization).</li> <li>• Simplified training for IT support staff (standardization).</li> <li>• Reduced volume of help desk tickets.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Help desk metrics.</li> <li><input checked="" type="checkbox"/> Student surveys.</li> <li><input checked="" type="checkbox"/> Faculty surveys.</li> </ul>
Contextual Information
<p>The University of Michigan maintains a website that provides examples of faculty using technology in the classroom. Faculty members can review the website to identify new ideas for using technology to achieve their teaching objectives. For each example, the faculty member's contact information is provided. Examples are organized into the following categories:</p>

**Initiative #6- Learning Space IT Support Model**

- Using Multimedia in Classroom Teaching
- Using the Web for Students to Publish Projects and Research
- Using Web-based Training, Tutorials, and Simulation to Engage Students
- Using Technology Tools and Teaching Strategies to Promote Active Learning
- Using Online Tools to Promote Interaction and Engagement with Course Content
- Using the Web to Promote Experiential and Collaborative Learning<sup>7</sup>

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<sup>7</sup> Examples of UM Faculty Using Technology in Teaching. University of Michigan. 23 November 2011.  
<http://www.crlt.umich.edu/inst/techexamples.php>



## Initiative #7- IT Support for and Collaboration with Distance and Online Learning

### Expand IT support and collaboration for distance and online learning.

The CIO and governance teams will support distance and online learning through strategic resource allocation, improved communication, and cross-trained personnel. IT staff (including the Faculty Development Center), CED, and CETA will work collaboratively to achieve effective policies and outcomes for the technological aspects of instructional design, instructional delivery, and IT support of faculty, staff, and students in distance and online environments. Purely academic elements of distance and online learning (e.g., course content, staffing decisions, etc.) will remain in the purview of the faculty and Academic Affairs (via CED/DLL) with input from HR, unit heads, etc.; but on the whole, the CIO will have a stronger role and voice in coordinating all IT-related dimensions of distance/online learning as described above.

<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	CED, Provost's Council, CETA, UMS, DLL, Cooperative Extension Service

### Budget Estimate

The Plan does not identify specific components that would require additional spending for distance and online learning. However, it is expected that as more courses are taught online, additional resources will be necessary to support instructional design.

It is likely that the organizational alignment initiative will identify staffing resources with instructional design skills to support online learning through increased collaboration with UM IT and CED.

UMaine may be able to take advantage of certain grants, such as Next Gen Learning<sup>8</sup>, to fund start-up expenses; however, it is important to consider the sustainability of grant funded investments beyond the term of the grant.

### Action Items to Implement Initiative

1. Establish a working group with a clear charter, including:
  - a. CIO

<sup>8</sup> In 2010, the Bill and Melinda Gates Foundation invested in an initiative to “provide grants to organizations and innovators to expand promising technology tools to more students, teachers, and schools.”

<http://www.gatesfoundation.org/postsecondaryeducation/Pages/next-generation-learning-white-paper.aspx>

### Initiative #7- IT Support for and Collaboration with Distance and Online Learning

- b. Continuing and Distance Education (CED)
  - c. Faculty Development Center (FDC)
  - d. Center for Excellence in Teaching and Assessment (CETA)
  - e. Provost Council
  - f. Faculty Senate
  - g. Administration (Student Records, Scheduling, Registrar)
2. Establish a business plan for distance and online learning.
3. Identify measures for teaching and learning assessment.
4. Analyze data already collected by groups such as T4 surveys.
5. Identify objectives for student outcomes and graduation rates.
6. Engage deans and faculty – communicate UMaine’s distance and online learning strategy.
7. Work with faculty to identify appropriate resources to support growth of distance and online programs.
8. Work with UMS to identify appropriate marketing strategy (ex. maine.online).
9. See Appendix A: Training Elements for training components.

#### Anticipated Benefits

- Attract more students:
  - Across UMS campuses
  - Non-traditional students
- Increase visibility of premier degree programs.
- Demonstrate IT leadership and innovation.
- Improve community outreach.

#### Measures of Success

- ☒ Student outcomes.
- ☒ Retention and graduation rates for distance and online learning.
- ☒ Distance and online learning enrollment.
- ☒ Student and faculty feedback.

#### Contextual Information

The 2011 Survey of Online Learning, a collaborative effort between the Babson Survey Research Group and the College Board, is the leading barometer of online learning in the United States.

**Initiative #7- IT Support for and Collaboration with Distance and Online Learning**

Key findings from the 2011 report include:

- Over 6.1 million students were taking at least one online course during the fall 2010 term, an increase of 560,000 students over the previous year.
- The 10% growth rate for online enrollments far exceeds the 2% growth in the overall higher education student population.
- Thirty-one percent of higher education students now take at least one course online.
- Reported year-to-year enrollment changes for fully online programs by discipline show most are growing.
- Academic leaders believe that the level of student satisfaction is equivalent for online and face-to-face courses.
- 65% of higher education institutions now say that online learning is a critical part of their long-term strategy.

There continues to be a consistent minority of academic leaders concerned that the quality of online instruction is not equal to courses delivered face-to-face<sup>9</sup>.

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<sup>9</sup> Going the Distance: Online Education in the United States 2011. Sloan Consortium. 23 November 2011.  
[http://sloanconsortium.org/publications/survey/going\\_distance\\_2011](http://sloanconsortium.org/publications/survey/going_distance_2011)

## Initiative #8 - IT for Research

### **Develop a campus-wide strategy to improve the IT infrastructure for research in Maine.**

In the 21st century IT infrastructure is critical for all areas of research. More and more, the computer and advanced networks are replacing the "test tubes and microscopes" and allowing researchers to advance the state of the art in their respective field. That is, the largest users of research computing are NOT computer scientists, but rather scientists such as biologists, chemists, or physicists.

However, like other IT areas at UMaine, research computing has grown in an ad hoc manner. A large number of researchers are maintaining their own, often underutilized computer hardware. Far too much time is spent by researchers and students in non-computer fields, maintaining computer hardware and software at the expense of conducting valuable research in their field. In order to maximize the effectiveness of research investments it is imperative that efforts throughout the state be coordinated and the benefits shared which will require greater collaboration between UMaine IT, the Research office, and the research community.

In this initiative, UMaine will seek to pool resources and encourage researchers to add to and use from a centrally managed compute pool that serves high performance computing needs as well as cloud needs. UMaine will work closely with UMS and other entities in the State so that the largest possible resource can be built with minimum duplication that benefits the maximum audience for the lowest possible cost.

<b>Initiative Owner</b>	Vice President for Research
<b>Consultative Role</b>	CIO, UMS IT
<b>Budget Estimate</b>	
The long-term goal of this initiative is to better utilize spending by pooling and/or reallocating existing resources. This will allow researchers and graduate students to be more productive. An outcome of the organizational alignment project (Initiative #3) should be the ability to identify resources to support this initiative.	
<b>Action Items to Implement Initiative</b>	
<ol style="list-style-type: none"> <li>1. Engage research community in the State of Maine as to the significant advantages of pooling research computing.</li> <li>2. Determine most cost effective method of pooling resources for the greatest benefit.</li> </ol>	

### Initiative #8 - IT for Research

3. Create a reporting line for research computing.

#### Anticipated Benefits

- Research dollars will go further
- Researchers will be more productive.
- Loss of data will be prevented.

#### Measures of Success

- ☒ Increased research funding.
- ☒ Increased number of publications.
- ☒ Increased graduate school enrollment.
- ☒ Growing compute pool.
- ☒ Shorter time from idea to publication.

#### Contextual Information

“Because research universities are central institutions in any knowledge and technology-intensive society and because they are seen as the key to a world-class higher education system, their future is reasonably bright. The fact is that modern societies cannot do without them.

Those who argue that the contemporary university will be fundamentally transformed by distance education and technology, mass enrollments, increasing vocationalization, privatization, or the current financial crisis have a point. The early 21st century is a period of both crisis and transformation for higher education globally. And it is entirely possible that some sectors of higher education will change fundamentally.

However, one sector of higher education is unlikely to be dramatically altered—the research universities. These institutions have the power of tradition, and they are quite good at what they accomplish. They will, without doubt, be changed in some ways, but the research university in 2050 is unlikely to be fundamentally different from such institutions today.”<sup>10</sup>

<sup>10</sup> “The Future of the Research University” UN Report on Higher Education. 2011

### Initiative #9- IT Refresh and Reassessment

**Develop the existing IT refresh program to include a comprehensive refresh model that is informed by an ongoing technology reassessment policy.**

The IT environment is constantly changing. Therefore, it is important to remain aware of changes in existing IT, as well as the growth of new technologies, such application virtualization and expanded options for cloud computing.

A successful IT refresh program requires a recurring IT refresh budget, an effective asset management program, and a policy for ongoing reassessment of UMaine's existing technologies. Accordingly, the program will require the support of University leaders and should operate within the established IT Governance model.

**Asset Management.** The effective identification, maintenance, and replacement/reassessment of technology requires an effective asset management program. An asset management program should provide a real-time snapshot of University's IT inventory. This inventory should be organized and maintained to include a profile for each inventoried IT asset. The profile should indicate technical specifications, warranty information, date of purchase, and assignment (department and if applicable, individual).

UM IT currently maintains asset management technology; however, the program currently only captures IT asset information for items over \$5,000 which overlooks many departmental IT purchases.

**Technology Standards.** Published IT hardware and software standards should guide hardware and software purchases. The Board for the Review of Information Technology and Effectiveness (BRITE) will identify these standards within the Technology Reference Model (TRM). Accordingly, the roles of BRITE and the TRM should be formally integrated into the Refresh and Reassessment Program.

**Refresh Cycles.** Different devices will have different refresh cycles. For instance, it may be practical to expect a server to last for five years, while a laptop may need to be replaced after three or four years. Refresh cycles should be maintained by the BRITE.

**Reassessment.** In order to maintain an environment that is aligned with the University's strategic objectives, ongoing reassessment is critical. The IT refresh program should be reassessed annually to ensure that lifecycles and asset classes remain up-to-date and fiscally sustainable. IT asset classes and individual assets exceeding a set value should be reassessed at the end of their replacement cycles to determine if the IT should be replaced, upgraded, or removed. In many cases, the University may have the opportunity to reallocate refresh funds

### Initiative #9- IT Refresh and Reassessment

(within a department, unit, or school) for obsolete IT assets to more pertinent areas of need.

Technology reassessment should be governed by BRITE. BRITE should formally assess IT asset classes annually as part of the refresh/replacement cycle.

UMaine should give careful consideration to replacing IT assets in order to avoid investing in new versions of outdated technology. For instance, it may be of strategic value to replace a computer lab that features eight-year-old desktops with a Bring Your Own Device (BYOD) learning space that features adjustable work spaces and supports the use of IT to promote collaboration and innovation.

**Network Connectivity.** UMaine benefits from its access to the Regional Optical Network (RON) run by NetworkMaine within UMS. This network provides very high capacity services for research and general University purposes. As network connectivity demands continue to increase for research, academic, operational and residential bandwidth, it will be important to conduct a full review of existing backbone and network components, both wired and wireless. YouTube, Skype, and other media will continue to put pressure on network services as traffic demands increase. UMaine will need to determine how best to manage existing and anticipated future campus network demands for connectivity to take best advantage of the RON. Evaluation of these requirements, of network access, and new services should be part of the reassessment process.

When considering replacement of technology with new, alternative technology, careful consideration should be given to total cost of ownership, environmental impact, and current support capacity. Specifically, new technologies require an understanding of expected life-span, maintenance, interoperability, training, and support needs. New technology should not be implemented without a sustainable support model.

<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	Vice President for Administration and Finance, Executive Director of IT, BRITE, SCIT, UMS IT

#### Budget Estimate

The IT refresh program will require a dedicated budget with continual funding. Costs may initially be higher for the first few years of the program in order to standardize the IT environment at UMaine.

## Initiative #9- IT Refresh and Reassessment

### Computer Refresh Costs

UM IT currently maintains an IT equipment refresh budget. However, in order to establish a consistent computer refresh cycle of 4 years across the campus, additional funding will be necessary.

For this estimate, we've assumed that computers in distributed environments are currently replaced every 6 years. We've estimated 1,200 departmental computers that will require replacement. This includes computers for the 700 professional staff, and 500 of the 800 classified staff (not all classified staff use computers as part of their job).

The estimated cost per computer is \$1,500.

$(1,200 \text{ computers} \times \$1,500 \text{ per computer}) \times *33.33\% = \$600,000$

\*33% is used to adjust for existing funding for 6 year replacement cycle (66% of funding required for a 4-year refresh already exists).

In order to meet 4-year refresh cycle, 25% of computers will be replaced each year.

**Each year:**  $\$600,000 / 4 \text{ years} = \$150,000 \text{ per year}$

### Network Maintenance and Refresh Costs

UMaine is working with UMS to develop a Service Level Agreement (SLA) for UMS to provide all maintenance of UMaine's network connections, including wireless. The estimated annual cost for maintaining all network connections including wireless would be \$847,000. The current estimated revenue collected for network connections is \$556,000.

Additional Costs for SLA:  $\$847,000 - \$556,000 = \$291,000$

UM IT has budgeted for the purchase of 50 switches for about \$5,000 each to launch VoIP. The estimates provided above are based on the assumption that UMS would provide all switches and replace them on a four-year basis. Accordingly, we've adjusted the estimate as follows:

Cost of switches =  $50 \times \$5,000 = \$250,000$

Amortization of switch replacement cost over four years:  $\$250,000 / 4 \text{ years} = \$62,500 \text{ per year}$

**Each Year:**  $\$847,000 \text{ original SLA estimate with switches} - \$556,000 \text{ current spending} - \$62,500 \text{ costs covered by UM IT} = \$228,500$

### Total IT Refresh and Reassessment Costs

**Each Year:**  $\text{Computer Refresh Costs } \$150,000 + \text{Network Costs } \$228,500 = \$378,500$

*Please note: all estimates contained herein are for planning purposes only. These numbers are*



### Initiative #9- IT Refresh and Reassessment

*subject to change and should not be considered final. They serve as a starting point for further discussions.*

#### Action Items to Implement Initiative

1. Work with BRITE to establish program and set priorities.
2. Establish an IT refresh program budget.
  - a. Determine sustainable funding mechanisms.
  - b. Consider how refresh budgeting will be enforced at department level.
  - c. Work with vendors to assess/negotiate costs. Use this information to help identify user options for new IT.
3. Establish acceptable refresh cycles and publish in TRM.
4. Establish mechanism/procedure for reassessment of technologies that are at the end of their refresh cycle.
5. Meet annually to review and update the refresh and reassessment program.

#### Anticipated Benefits

- Increased effectiveness and productivity for both supporters and users of technology (easier to support, more effective to use).
- Improved standardization and interoperability.
- Increased oversight of technology environment.
- Decreased number of technical issues related to equipment exceeding its expected lifecycle.

#### Measures of Success

- ☒ Establishment of a sustainable technology refresh budget.
- ☒ Monitor technology asset inventory to assess compliance with refresh program.
- ☒ Monitor system status for increased uptime.
- ☒ Monitor help desk statistics for decreased volume of tickets associated with outdated technology.
- ☒ Consider strategic outcomes of reassessment process (ex. replacing an underutilized lab with a flexible and collaborative learning space).

## Initiative #9- IT Refresh and Reassessment

### Contextual Information

The following list from EDUCAUSE includes various technologies and their suggested replacement schedules.<sup>11</sup>

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

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

<sup>11</sup> Educause – Replacement Strategy. Educause 18 November 2011.  
<http://www.educause.edu/Resources/Browse/Replacement%20Strategy/33301>

## Initiative #10- Application Virtualization

**Expand application virtualization to improve access to common software for remote and mobile users, and to improve license management.**

Expanded application virtualization will enable varying degrees of license pooling (key serving) over the internet. Virtual applications may be accessed through the UMaine portal. Currently, key serving is in place for certain applications (i.e., SPSS), but is only available at workstations in UMaine's computer labs.

**Strategic value.** A robust application virtualization platform could be leveraged by UMaine as it looks to strengthen its presence as an IT leader among other UMS institutions. As UMaine develops and adapts innovative new technologies, application virtualization will enable UMaine to offer those technologies to other institutions. Application virtualization also supports distance learning, as it enables distance students to access software resources that have traditionally been localized. This expanded reach of services and resources has the potential to highlight UMaine's role as a technology leader. Furthermore, centralized hosting of common software may be more cost effective for other campuses, while also providing a new revenue stream for UMaine.

<b>Initiative Owner</b>	Director of IT
<b>Consultative Role</b>	CIO

### Budget Estimate

Initial costs for setting up application virtualization environment (hardware and platform) are estimated at approximately \$150,000. This initiative will require a substantial effort, and is not expected to be implemented until FY 2015.

**Year 1:** NA

**Year 2:** NA

**Year 3:** \$150,000 implementation costs

Over time, there will be significant cost savings associated with application virtualization. For planning purposes we've estimated savings associated with the elimination of a single computer lab, which costs approximately \$40,000 per year to operate.

**Year 4:** elimination of \$40,000 in computer lab costs

**Year 5 (no additional changes):** savings of \$40,000 in computer lab costs

This initiative will be of strategic importance to the success of UMaine's distance learning

### Initiative #10- Application Virtualization

program. Currently, courses that use expensive software cannot be taught at a distance because learners do not have access to computer labs and cannot afford to download the software locally. Additional revenue opportunities that will result from expanded distance learning capabilities are not reflected in this matrix.

*Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.*

#### Action Items to Implement Initiative

1. Continue following peer university progress with application virtualization (i.e. Indiana University).
2. Identify and purchase hardware and virtualization platform.
3. Negotiate with software vendors to establish licensing structure.
4. Assemble list of common software applications at UMaine.
5. Assess feasibility for each application (identify key technical and functional considerations).
6. See Appendix A: Training Elements for training components.
7. Communicate application virtualization services to end users.
8. Add application virtualization to service catalog.
9. Monitor usage and identify trends that can be used to adjust licensing agreements (i.e. if 100% percentage of 'software x' licenses are in use on a recurring basis, this may indicate a need to purchase more licenses).
10. Phase out clusters that were primarily used to access specific applications (i.e. SPSS).

#### Anticipated Benefits

- Improved application access for remote and mobile users.
- Improved data about software usage to support informed purchasing decisions.
- Improved and simplified license compliance management.
- Reduction in licensing costs attributable to on-demand licensing.
- Reduction in operating costs, including IT refresh costs.
- More secure computing environment due to simplified software update and license maintenance process.
- Decreased need for local application installations.

Initiative #10- Application Virtualization
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Usage reporting.</li> <li><input checked="" type="checkbox"/> Customer feedback.</li> <li><input checked="" type="checkbox"/> Reduced costs.</li> </ul>
Contextual Information
<p>The Information Technology Services department at Indiana University is currently working on a project to implement client virtualization. A complete plan was established, including project phases and outcomes, timelines, and status updates throughout the course of the project in order to ensure that client servers would migrate to a virtualized environment. Indiana University is focused on implementing virtualized servers as a means to extend lifecycle replacement and simplify desktop management, as well as incurring long term cost savings by modernizing the computing IT at the University.<sup>12</sup></p>

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<sup>12</sup> Project: Client Virtualization. University Information Technology Services. 10 November 2011.  
<http://uits.iu.edu/page/azor>

**Initiative #11 – IT Service and Resource Catalog**

**Extend UMaine’s current IT Service and Resource Catalog to establish a comprehensive first-stop resource that promotes awareness for and use of IT services and resources.**

The IT Service and Resource Catalog will be an online menu of IT services and resources that educates the campus community about IT at UMaine. The IT service catalog should enable users to easily determine the appropriate course of action to successfully initiate a service or gain access to a resource.

**Scope.** UMaine currently has an IT service catalog that features services and resources offered by UM IT. The current service catalog does not extend to those IT services and resources offered outside of UM IT. While the IT service and resource catalog will continue to be managed by UM IT, the catalog should list information for all IT services and resources offered by or through UMaine, or in some cases, UMS. The service catalog may even point users to other third party resources, such as free online training, that have been vetted by UMaine.

**Elements.** Catalog entries for services and resources offered by UM IT should include a direct link to UMaine’s help desk ticketing software. Services and resources offered outside UM IT should include a link to the service provider’s website, along with contact information.

The catalog should allow the user to log in to display only the services and resources available to them. Tailoring content will maintain a customer focus by removing clutter and simplifying navigation. Based on the login, contact information can be passed on to applicable services such as the help desk ticketing software.

Each item in the service catalog should include the following components:

- description of the service/resource provided
- target audience for the service/resource
- when the service/resource is available
- options (different levels of services/ resources)
- service level expectations
- costs
- contact information (service delivery owner)
- ticket initiation (UM IT only)
- tech coach (if applicable)

**Maintenance.** In order to maintain the accuracy of the service and resource catalog, all service and resource owners should be engaged in the update and maintenance process. New IT projects and services will be obvious indicators of the need for catalog updates; however, less obvious modifications will result from organizational and budgetary structure changes. The

### Initiative #11 – IT Service and Resource Catalog

owner(s) of each IT service should be responsible for updating IT with any changes to the catalog, as well as providing an affirmation for no changes on at least an annual basis.

**Feedback Mechanism.** For each service, customers should be presented with an opportunity to provide feedback. This will enable management to assess the customer experience and to continuously improve service delivery structures. Feedback mechanisms will also provide customers with an opportunity to be heard; whether feedback is positive, constructive, or outright critical.

<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	Director of IT, BRITE

#### Budget Estimate

UMaine already has the technology and the framework for expanding the IT Service Catalog. Accordingly, additional costs associated with this initiative are expected to be minimal.

The existing technology and framework includes the UM IT service catalog (UM IT website), the UM IT help desk, and the UM IT help desk ticketing software.

#### Action Items to Implement Initiative

1. Engage IT service and resource owners across UMaine, and as applicable, UMS.
2. Start with the IT service delivery grid (Appendix C) and existing UM IT service catalog.
3. Identify additional IT services that are not included in the grid or the current catalog.
4. For existing services in UM IT service catalog, update services to include all components (i.e. cost, owner, contact, etc).
5. For missing services in UM IT service catalog, identify service owners, such as CED, CETA and Fogler Library, and collect service information. Consider using this process to pilot methodology that will be used to facilitate annual/as-needed service and resource updates going forward.
6. Market the service catalog to users. Consider techniques such as including a link to the service catalog in help desk ticket responses, from FirstClass, and Google help, or on-hold messages when calling the help desk.
7. Establish and communicate a process for updating services. Refer to action item #5.

#### Anticipated Benefits

- Better customer experience.

### Initiative #11 – IT Service and Resource Catalog

- Increased awareness of IT services and resources available to the UMaine community.
- Improved structure for self-service.
- Decreased volume of help desk calls.
- Clear delineation and definition of service providers.

#### Measures of Success

- ☒ Potential identification and consolidation of redundant IT services and resources. Service and resource catalog usage statistics (website statistics).
- ☒ Help desk statistics.
- ☒ Customer feedback /survey data.

#### Contextual Information

Purdue's IT Service Catalog includes the following components; a description of the service, associated costs, who the service is available to, when the service is available, how to request the service, and who to contact if service issues are encountered. Customers can search the service catalog, or can browse by category, or by alphabetical listing of services. Service categories include; accounts and passwords, business tools and services, connectivity/networks, help and support, learning tools and services, Purdue e-mail and messaging, Research, and Security.<sup>13</sup>

An article on service catalogs to consider is:

<http://www.itsmwatch.com/itil/article.php/3520901/How-To-Produce-An-Actionable-IT-Service-Catalog.htm>

To quote this article: "First and foremost, the Service Catalog must be created with an unwavering focus on internal customer needs." And, "The Service Catalog can provide the vehicle to manage customer demand, map fulfillment processes for each service, ensure service level compliance, drive process efficiencies, and track costs."

<sup>13</sup> Purdue University. IT Service Catalog. <http://www.itap.purdue.edu/service/catalog/index.cfm>. 14 November 2011.



## Initiative #12 – Learning Management System

### **Establish standards for a Learning Management System that aligns with the needs of UMaine.**

It is uneconomical to provide IT support for all five of the Learning Management Systems currently in use at UMaine. Supporting many systems is a strain on available resources; therefore the support available is inadequate to make it a successful functioning system.

UMaine will commit to reducing the number of Learning Management Systems by engaging a representative group of stakeholders in a thoughtful and deliberate selection process. This process will include defining instructional requirements and assessing costs (both total cost of ownership and cost in staff and faculty time required to convert courses). The process will be guided by the strategic mission of the University, as well as the strategic vision set forth in this plan. Other considerations will include existing resources, system functionality, and support mechanisms.

Since UMaine already has a number of Learning Management Systems in place, the selection process will remain internal and will not require a formal RFP process.

<b>Initiative Owner</b>	Provost
<b>Consultative Role</b>	Faculty Senate, SCIT, Director of IT, CIO, Learning Management System Committee (UMS)

### **Budget Estimate**

There are significant cost savings to be gained by reducing the number of Learning Management Systems at UMaine. For each Learning Management System, there are direct and indirect costs associated with owning and maintaining the environment. However, it will also be important for UMaine to consider the costs associated with converting courses in other environments to the selected Learning Management System.

The following figures are based on the assumption that the University will choose to discontinue the use of FirstClass in favor of Blackboard. These figures do not reflect costs associated with transferring courses that currently exist in FirstClass to the Blackboard LMS.

The University's current licensing contract with FirstClass costs approximately \$75,000 per year and expires at the end of 2014. Operating costs for the FirstClass server are approximately \$10,000 per year.

Initiative #12 – Learning Management System
<p><b>Year 1:</b> No change</p> <p><b>Year 2:</b> No change</p> <p><b>Year 3:</b> \$75,000 License + \$10,000 operating costs = \$85,000 savings</p> <p><b>Year 4 (no additional changes):</b> \$75,000 License + \$10,000 operating costs = \$85,000 savings</p> <p><b>Year 5 (no additional changes):</b> \$75,000 License + \$10,000 operating costs = \$85,000 savings</p> <p><i>Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.</i></p>
Action Items to Implement Initiative
<ol style="list-style-type: none"> <li>1. Assemble Learning Management System selection working group.</li> <li>2. Identify and prioritize requirements.</li> <li>3. Collect data from recently conducted surveys such as the one conducted by T4.</li> <li>4. Identify problems with current Learning Management Systems.</li> <li>5. Identify costs of different Learning Management System arrangements.</li> <li>6. Choose Learning Management System arrangement.</li> <li>7. Develop project plan for phasing out current arrangement and shifting to new Learning Management System arrangement.</li> <li>8. See Appendix A: Training Elements for training components.</li> </ol>
Anticipated Benefits
<ul style="list-style-type: none"> <li>• Streamlined student and faculty experience.</li> <li>• Reduced costs – increased funding for innovation (perhaps within selected Learning Management System).</li> <li>• Operational efficiencies gained by reducing number of systems to manage.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Cost savings.</li> <li><input checked="" type="checkbox"/> Increased discretionary spending.</li> <li><input checked="" type="checkbox"/> Learning Management System use statistics.</li> <li><input checked="" type="checkbox"/> Student feedback (use IT surveys).</li> </ul>

## Initiative #12 – Learning Management System

☒ Faculty feedback.

### Contextual Information

Purdue University recently updated their Learning Management System from Blackboard/Web CT to the new Blackboard Learn system. A project team was created, with members from various units on campus, to oversee the implementation of the Learning Management System update. The goal of the project is to utilize the new features of the Learning Management System in order to “improve the teaching and learning experience of Purdue University faculty and students.” The new Learning Management System was implemented in project phases, with the goal to have all courses on the Blackboard Learn system by the end of 2012. Online tutorials and training workshops are conducted in order to educate users about the new features of the Learning Management System.<sup>14</sup>

<sup>14</sup> Blackboard Learn Implementation. ITAP. 2011.

<http://www.itap.purdue.edu/learning/tools/blackboard/bb9implementation.cfm>

### Initiative #13 – E-Mail

**Investigate strategies for minimizing the number of e-mail systems that all faculty, staff, and students use.**

*Note: For the purposes of this initiative, e-mail system includes calendaring.*

**Strategic value.** Encouraging the use of a single e-mail system will support communication across the University as well as make us more accessible to collaborators and audiences outside the University. UMaine currently operates multiple e-mail systems, each of which is supported by UMS, UM IT, or distributed IT. Due to hardware, software, and support requirements, there are significant costs associated with maintaining multiple e-mail systems. Operating multiple e-mail systems does not provide UMaine with differentiating value. However, unifying users onto a single e-mail system will support collaboration, transparency, and awareness. These elements are fundamental to an effective and functional community.

**Information security.** Standardizing all UMaine users on a single e-mail system also aligns with UMaine’s commitment to information security. Managing the security of one e-mail system is much easier than managing the security of multiple e-mail systems, especially when many of those e-mail systems are spread out across campus and do not fall under the purview of IT.

**E-mail selection.** UMaine needs to choose whether UMS will host and administer the e-mail system for UMaine, or if UMaine will maintain its own e-mail system. The next step will be to determine which e-mail system to select, and which service delivery method to follow. During this process, UMaine should give careful consideration to the existing e-mail system offered and supported by UMS (maine.edu).

<b>Initiative Owner</b>	CIO
<b>Consultative Role</b>	Director of IT, SCIT
<b>Budget Estimate</b>	
<p>UMaine has an opportunity to save money by consolidating to a single e-mail system. Multiple e-mail system requires multiple hardware/software (unless cloud based) and support costs.</p> <p>During the e-mail selection process, UMaine will consider cloud based e-mail systems, such as Google Mail. Resulting from a UMS initiative, all UMaine users have the ability to have a Google Mail e-mail account (maine.edu). Selecting Google Mail would likely reduce the amount of technical planning required to complete the transition process.</p> <p>Once an e-mail system is selected, training should be available to any user who is transitioning</p>	

### Initiative #13 – E-Mail

from primarily using another email system.

The following figures are based on the assumption that the University will choose to standardize Google Mail as the official e-mail service. The savings attributable to the elimination of the FirstClass e-mail service are reflected in the Learning Management System initiative.

In addition, savings would be attributable to eliminating approximately 25 of the distributed email servers that currently exists on campus. Estimated costs for operating an email server are \$1,250 per year. For planning purposes, we've estimated that this will be a gradual process, with full standardization occurring in Year 3.

**Year 1:** 10 email servers x \$1,250 operating costs = \$12,500

**Year 2:** \$12,500 + (10 email servers x \$1,250 operating costs) = \$25,000

**Year 3:** \$25,000 + (5 email servers x \$1,250 operating costs) = \$31,250

**Year 4 (no additional changes)** = \$31,250

**Year 5 (no additional changes)** = \$31,250

*Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.*

#### Action Items to Implement Initiative

1. Identify E-mail Selection working group to review existing e-mail systems.
2. Collect input using 'open forums' such as town hall meetings and/or FaceBook discussions.
3. Consider successful e-mail standardization projects at peer/aspirant universities.
4. Develop list of e-mail and calendar system requirements (functionality).
5. Complete cost/benefit analysis for selected e-mail systems.
6. Select e-mail system and design implementation plan, including training and awareness campaign.
7. See Appendix A: Training Elements for training components.

#### Anticipated Benefits

- Consistent platform for communications.
- Ability to effectively build distribution lists for e-mail.
- Simpler and more intuitive "face" for contact from the external community.

Initiative #13 – E-Mail
<ul style="list-style-type: none"> <li>Improved security compliance, such as E-Discovery.</li> </ul>
Measures of Success
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Monitor use of e-mail systems.</li> <li><input checked="" type="checkbox"/> Monitor for additional systems hosted locally.</li> <li><input checked="" type="checkbox"/> Customer feedback.</li> <li><input checked="" type="checkbox"/> Help desk ticket analysis.</li> </ul>
Contextual Information
<p>The University of Michigan currently uses more than 40 email and calendar services throughout campus. This has led to cost inefficiencies, and constraints on available resources. The University has taken on the initiative to unify student and faculty email in order to save money, and increase collaboration across campus. Google has been selected as the email provider, and the remaining steps for implementation are in the planning phase.<sup>15</sup></p>

<sup>15</sup> IT Rationalization. University of Michigan. 22 November 2011. <http://nextgen.umich.edu/projects/>

## IT Strategic Initiatives Matrix

The following “Initiatives Matrix” provides a one page summary of the key elements of the 13 initiatives identified in IT Strategic Plan. It is intended to help guide the timing, budgeting, and overall planning process. It is important to note that the costs identified in the Matrix are either in addition to existing expenditures and/or an estimated reduction of existing expenditures if the initiative is implemented.

For the purposes of this Plan, the total estimated annual current IT spending is based on both “central IT” and “distributed IT” expenditures at the University. Furthermore, it should be noted that although the Plan does call for increases in spending, there are potential cost savings identified throughout. In addition, even with these increases, UMaine will remain “below average” in terms of IT spending compared to other peer institutions based on national research provided by Educause.<sup>16</sup>

A negative number is indicated in red and reflects an expected additional cost to the University budget, while positive numbers reflect potential cost savings over the same time period.

*Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.*

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<sup>16</sup> Educause Core Data Service Almanac for Doctoral Institutions (DR EXT and DR INT). October 2011.

Category	No.	IT Initiative	IT Initiative Description	Initiative Owner	Implementation Timeframe (Fiscal Year)	Year 1 Fiscal 2013	Year 2 Fiscal 2014	Year 3 Fiscal 2015	Year 4 Fiscal 2016	Year 5 Fiscal 2017	Five Year Totals
Priority Level 1	1	IT Leadership and Governance	Establish a new CIO role to champion UMaine's IT vision and a University-wide IT governance structure that fosters a transparent process for oversight, communication, and the strategic direction of IT at UMaine.	President	2013	-\$187,500	-\$187,500	-\$187,500	-\$187,500	-\$187,500	-\$937,500
	2	Fiscal Management	Develop a campus-wide IT funding model that focuses limited dollars on strategic spending while reducing non-strategic IT spending over the next five years.	CIO	2013 - 2017	\$0	\$0	\$0	\$0	\$0	\$0
	3	Organizational Alignment	Assess and align IT classified and professional resources at UMaine in order to improve collaboration and optimize the delivery of IT services.	CIO	2013 - 2017 2 years for initial effort. This will also require ongoing consideration.	-\$50,000	-\$30,000	\$180,000	\$300,000	\$300,000	\$700,000
Priority Level 2	4	Training and Professional Development	Establish a consistent educational development model that provides faculty, staff, and students with baseline IT knowledge as well as ongoing IT training and professional development opportunities that support innovation.	CIO	2013 - 2017	-\$33,600	-\$33,600	-\$30,600	-\$28,600	-\$28,600	-\$155,000
	5	Help Desk	Establish a single point of contact (SPOC) for the help desk in order to proactively measure, manage, and respond to user demands for IT support.	Executive Director of IT	2013-2014	\$0	\$0	\$0	\$0	\$0	\$0
	6	Learning Space IT Support Model	Establish a learning space technology support model that improves the effective use of IT to support pedagogy.	Provost	2013 - 2017	\$0	\$0	\$0	\$0	\$0	\$0
	7	Technology Support for and Collaboration with Distance and Online Learning	Expand IT support and collaboration for distance and online learning.	Director of CED	2013 - 2017	\$0	\$0	\$0	\$0	\$0	\$0
	8	IT for Research	Develop a campus-wide and/or state-wide strategy to improve the IT infrastructure for research in Maine.	VP for Research	2013 - 2017	\$0	\$0	\$0	\$0	\$0	\$0
Strategic Projects and Programs	9	IT Refresh and Reassessment	Develop the existing IT refresh program to include a comprehensive refresh model that is informed by an ongoing technology reassessment policy.	CIO	2013 - 2017	-\$378,500	-\$378,500	-\$378,500	-\$378,500	-\$378,500	-\$1,892,500
	10	Application Virtualization	Expand application virtualization to improve access to common software for remote and mobile users, and to improve license management.	Executive Director of IT	2015	\$0	\$0	-\$150,000	\$40,000	\$40,000	-\$70,000
	11	IT Service Catalog	Extend UMaine's current IT Service and Resource Catalog to establish a comprehensive first-stop resource that promotes awareness for and use of IT services and resources.	CIO	2013 - 2014	\$0	\$0	\$0	\$0	\$0	\$0
	12	Learning Management System	Establish standards for a Learning Management System that align with the needs of UMaine.	Provost	2015	\$0	\$0	\$85,000	\$85,000	\$85,000	\$255,000
	13	E-Mail	Investigate strategies for minimizing the number of e-mail systems that all faculty, staff, and students use.	CIO	2013 - 2015	\$12,500	\$25,000	\$31,250	\$31,250	\$31,250	\$131,250
						Year 1 Fiscal 2013	Year 2 Fiscal 2014	Year 3 Fiscal 2015	Year 4 Fiscal 2016	Year 5 Fiscal 2017	Five Year Allocation
Estimated "New Dollars" to Implement and Sustain Plan Initiatives (This estimate does not include existing IT expenditures.)						-\$637,100	-\$604,600	-\$450,350	-\$138,350	-\$138,350	-\$1,968,750
Delta Between FY 2010 Total IT Spending at UMaine and Identified New Initiatives (Percentage increase is based on total UMaine IT spending of \$5,376,441 for FY 2010)						12%	11%	8%	3%	3%	7%



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Final Draft for ITAC 2-27-2012

## **Communicating, Implementing, and Sustaining the Plan**

Gaining and maintaining the support of the campus will require clear, consistent, and accurate communication on behalf of University leadership throughout the implementation process. Sustaining the Plan will require a collaborative process that targets outcomes that are supported by the entire campus community.

### **Technology Planning Consideration for UMaine's Strategic Planning Process**

The UMaine strategic planning process should also include specific consideration of how IT supports the mission of the University. Strategic plans are, by nature, intended to provide guidance to the President's Council for making decisions on priorities and investments. To this end, it is important for UMaine to have an appropriate framework to evaluate, assess, and communicate emerging technologies for academic, operational, and administrative needs.

UMaine should consider the following requirements that a Plan of this magnitude necessitates:

- Continued active sponsorship from senior academic and administrative leaders will be critical to the successful adoption and continued support of the Plan.
- As initiatives are implemented, project goals and objectives should be clearly communicated to stakeholders and progress should be proactively monitored and communicated.
- Many changes will be non-technical; for example, changes may entail cultural shifts, process changes facilitated by new initiatives, policy and guideline adjustments, or financial and/or budgetary modifications.
- Some additional or redirected technology resources will be required to manage new systems, new technologies, and to properly react to changing business needs.
- Faculty, administrators, and staff must work cooperatively and collaboratively to facilitate effective change that is in the best interest of the University.
- Training and technical support staff will be critical to the success of the Plan's implementation. University constituents must be ready, willing, and able to use new technology and embrace effective change.

### **A Unified Communications Strategy and Campus-wide Marketing Plan**

The UMaine IT community needs a unified communication strategy and a sustainable marketing plan. Effective communication begins with listening and understanding. To promote this, town hall style meetings that provide the campus community with opportunities to voice opinions, questions, and concerns to representatives of IT leadership should be organized.

A marketing plan entails broad, campus-wide communications that are executed on a consistent basis and make use of multiple communication venues. Communications mechanisms should include the following elements:

- *Face-to-face*
- *Video (YouTube)*
- *Core team to meet with Campus wide strategic planning committee (January)*
- *Go to student, faculty, staff, and leadership – identifying key constituents*
- *Core team “ambassadors”*

### **Updating the Plan**

Throughout the development of this plan, UMaine has undertaken a collaborative approach to technology planning. This has provided a framework for input from academic and administrative stakeholders and campus leadership into the decision making process around technology at UMaine. Going forward, campus wide collaboration amongst the University’s technology community will be important.

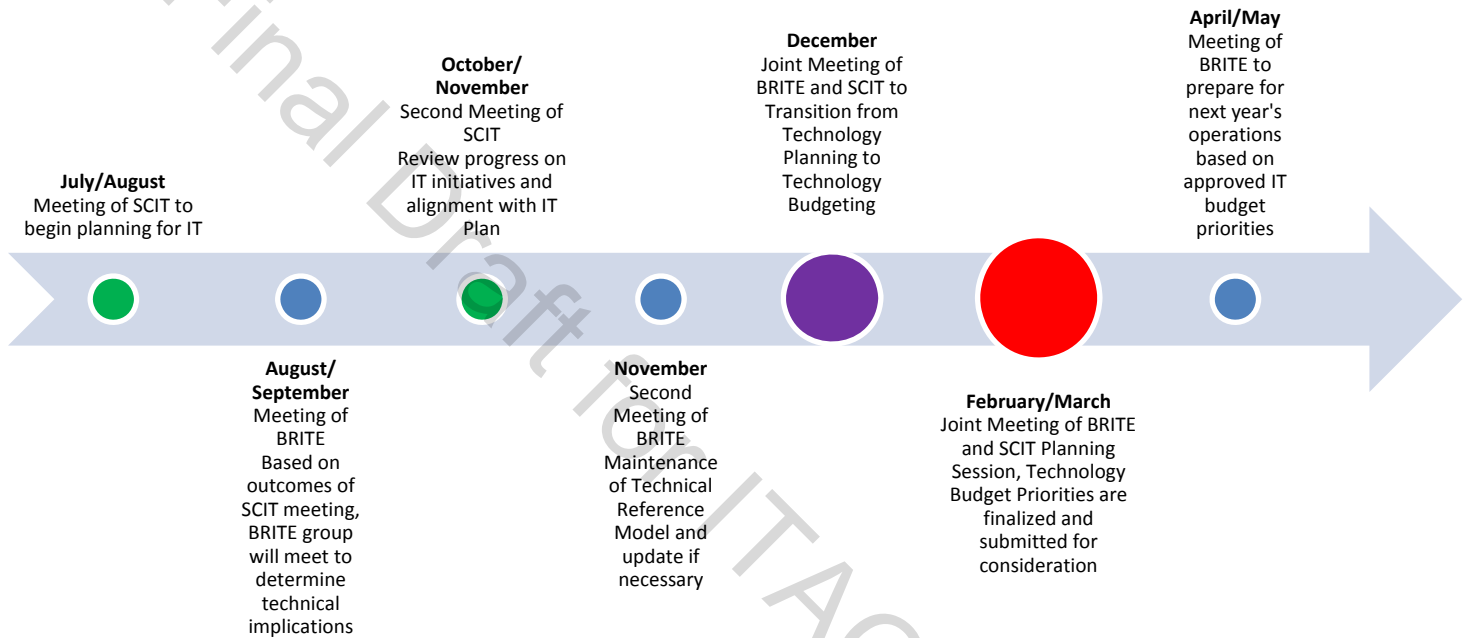
As presented in Initiative 1 of this Plan, two new committees are identified with respect to technology governance at UMaine: the Steering Committee for Information Technology (SCIT) and the Board for the Review of Information Technology Effectiveness (BRITE). The role of these Committees with respect to technology decision making, responsibility, and accountability, and also in relation to the CIO and the President’s Cabinet must be considered. Please refer to Appendix E for an exhibit that visually describes the process for sustaining the Plan and strengthening IT Governance at UMaine.

The IT strategic values and themes should remain constant for the foreseeable future. However, the initiatives set forth in the Plan require ongoing evaluation. While the Plan has been designed with an eye towards the future, the technology landscape is rapidly changing. What makes sense for 2013 may not make sense in 2014. As part of the Plan, UMaine should establish a formal IT planning process that includes ongoing evaluation and prepares the University to develop its next technology plan in 2018-2023.

By establishing a University-wide technology planning approach, working to standardize tools and applications, and developing a repeatable process for setting technology priorities, University leadership should have a more complete picture of resources, materials, and capabilities. New technology services can create significant opportunities to change how the University manages daily operations. To obtain the benefits of technology investments, the University must plan for business process changes that streamline operations and focus on using technology to improve customer service.

## Sustaining the Plan

The following timeline is based on a July 1 to June 30 fiscal year cycle and suggests a high-level process for UMaine to sustain its IT Strategic Plan and to strengthen IT Governance. The linkage across these elements is the role of the CIO. This new position would serve on the SCIT and likely chair the BRITE group. See Initiative #1 for more on IT Governance and Leadership.



## Appendix A: Training Elements

Training and professional development is a theme that influences many components of the initiatives. The following table identifies high level training considerations for those initiatives that have direct training implications.

### Training Considerations for Initiatives

Initiative	Training Elements
Help Desk	<p>In order to create and maintain demand for help desk services, help desk personnel will require training in both technical and soft skills. In order to ensure that staff remain current in their knowledge, annual training requirements should be established.</p> <p>The type of technical training that staff receive should be determined based on current IT projects, help desk statistics, and customer feedback.</p> <p>If the help desk's mission is to provide timely services and to demonstrate a commitment to customer support, staff should attend training that reflects that mission. An example of this type of training is ITIL.</p>
Learning Space IT Support Model	<p>Standardized learning space technologies will enable UMaine to deliver more efficient and effective training. The objective of the learning space IT training program will be to ensure that every member of faculty is comfortable using learning space IT at UMaine to improve pedagogy.</p>
IT Support for and Collaboration with Distance and Online Learning	<p>Currently, the FDC, CETA, and the CED offer training in support of distance and online course delivery. By combining forces, FDC, CETA, and CED training offerings can be expanded and enhanced to ensure that distance and online programs meet quality standards for teaching and learning. Together, FDC, CETA, and CED will be responsible for supporting innovation through experimentation and training.</p>
Application Virtualization	<p>IT staff will require training for supporting application virtualization. As part of marketing and awareness for application virtualization, end users will require instruction for accessing virtualized applications. The need for training is expected to decrease with time as more and more users become adept at this system.</p>
Learning Management System	<p>The Faculty Development Center, CED, and CETA will continue to provide training for UMaine's Learning Management System environment. By assisting in the transition to fewer Learning Management Systems on campus, training can be offered more effectively.</p>
E-mail	<p>Migration to fewer e-mail systems will require advance planning and communications and support for the entire campus community, as all users will be impacted. If users do not understand how to access or use the functions of UMaine's standard email system, there is a greater chance of users reverting back</p>

Initiative	Training Elements
	<p>to their own e-mail solutions. Awareness, training, and support will be absolutely critical to the successful transition of the entire UMaine community to a single, unified e-mail system.</p> <p>Initially, awareness will be driven by the E-Mail Selection working group. However, ownership for training and awareness will ultimately belong to UM IT.</p>

## Appendix B: Strategic Information Technology Issues

*The following pages include the list of strategic information technology issues identified in the Current IT Environment Assessment report (July 2011). The strategic initiatives described in the Plan are intended to address these strategic issues.*

Based upon our inquiry of University stakeholders, assessment of information gathered, and our independent analysis, BerryDunn has developed a list of issues that should be considered and used to inform the Strategic IT Planning Process.

To support understanding, the issues are categorized as follows:

- **Organization Issues** - related to organizational structure, management, staffing, and planning.
- **Service Issues** - related to types of IT services delivered and their service audience.
- **Infrastructure Issues** - related to IT security, systems, applications, hardware, and software.

Category	Description of Strategic Information Technology Issues
Organization #1	<p><b>The University needs to establish a consistent approach to supporting Classroom information technology standards.</b></p> <p>The University has no formal body to manage Classroom information technology standards. Although UM IT is tasked with supporting classroom technologies, the University does not have a coordinated body that serves to set standards and support instructional technology at a strategic level.</p> <p>This has led to confusion and frustration with who is in charge of setting direction and supporting a pedagogical flexibility that provides faculty with adequate tools to teach, balances the needs of the individual with those of the institution, and also provides coordination of the planning and delivery of classroom information technology needs.</p>
Organization #2	<p><b>The University needs to consider and design an appropriate IT Governance body.</b></p> <p>The University has a group called the IT Advisory Council (ITAC). The ITAC serves as an operational body to discuss challenges and opportunities, but it does not have the charter, mission, or the structure to proactively make overall governance decisions or to effect change within the IT community at UMaine.</p> <p>ITAC was established as a result of the November 2003 CIT report and it is has served as a cross-section of campus departments and functions. Since its inception, ITAC has been a constant presence (meeting monthly during the academic year) at UMaine.</p>

Category	Description of Strategic Information Technology Issues
	<p>However, the current structure and format of ITAC does not lend itself to certain critical aspects of IT Governance. These areas include, long-term planning, budgeting, and setting a strategic vision for information technology at the University.</p>
<p>Organization #3</p>	<p><b>The University needs to determine how it can best leverage UM IT in its role as UMaine’s dedicated, centralized IT service resource.</b></p> <p>The University is currently exploring alternative reporting structures for IT entities across campus.</p> <p>The current UM IT structure is weighted heavily towards telecom and networking, while there are only a handful of personnel to support classroom technology and faculty/staff training. Instructional technology support, eBooks/mobile applications, and flexible classrooms are all areas where the University will see increased demands.</p> <p>It is also likely that the UMS ITS group will continue to consolidate functions that naturally lend themselves to centralization. These include, but may not be limited to, server virtualization, network operations, and system-wide data center management.</p> <p>In addition, many of the personnel within UM IT are not performing duties that are aligned with their current job title. For example, “Network Specialists” are actually providing support to end-users and serving in more of a “Systems Support” role. Another example of an unmet need is the trending towards Mac computers over Windows-based PCs, which UM IT is not staffed to support.</p>
<p>Organization #4</p>	<p><b>The University needs to determine how it can optimize the efficiency and effectiveness of distributed IT resources.</b></p> <p>Nearly 60% of personnel classified under the IT Job Family are housed outside of UM IT. This level of distribution is not unusual for doctoral and research extensive universities. In the 2009 Educause Core Data Survey, participating doctoral and research extensive universities reported the highest level of decentralization among all Carnegie classes, with centralized IT personnel representing anywhere from 42% to 65% of total IT personnel<sup>17</sup>.</p> <p>The distribution of IT personnel is not inherently problematic; however, distributed arrangements at UMaine present coordination and oversight challenges that management needs to address in order to manage and leverage information</p>

<sup>17</sup> Percentages were derived from quartile plots in the 2009 Educause Core Data Survey. Therefore, 42% represents responses from the 25<sup>th</sup> percentile of respondents, 53% represents the median, and 65% represents the 75<sup>th</sup> percentile.



Category	Description of Strategic Information Technology Issues
	<p>technology resources in a tactical manner.</p> <p>Most distributed IT staff have no formal reporting function to UM IT, which makes it difficult to coordinate services and plan effectively for information technology at UMaine in a consistent manner. As part of the planning process it will be critical to review the current structure of the IT community to determine the most thoughtful design that provides the most effective delivery of IT services at UMaine.</p>
<p>Organization #5</p>	<p><b>The University needs to establish a consistent approach to managing and supporting employees with IT Job classifications.</b></p> <p>Available data provided by UMaine HR, indicates that there are over 100 individuals with an IT job classification at the University, but there are very few common IT job titles. The lack of common job descriptions indicates that there is little consistency across the campus in how IT personnel are identified.</p> <p>It is likely that this could lead to disparity in expectations, as well as how IT personnel are evaluated and managed. The University will also want to develop opportunities for career advancement and cross training that support the entire information technology community in a consistent manner.</p>
<p>Services #1</p>	<p><b>The University needs to establish a clearly defined IT service and support environment.</b></p> <p>Roles and responsibilities between UM IT and UMS ITS are not clearly understood by all campus information technology users. UM IT has increased the advertising of their services across the University. However, there continues to be confusion amongst the interviewees that BerryDunn met with about what role UMS ITS plays and what roles UM IT has in providing information technology services. Once clear organizational roles and responsibilities are established, these roles will need to be communicated broadly.</p> <p>Similarly, specific services are not understood by various stakeholders across the University. The current portfolio of IT services provided by UM IT, Distributed IT, and UMS ITS is not clearly defined. In some cases, there appears to be an overlap of services, and in other situations there are gaps that need to be addressed.</p>
<p>Services #2</p>	<p><b>The University needs to better locate UM IT personnel within the campus.</b></p> <p>UM IT personnel are housed in at least six buildings currently. This makes it difficult to coordinate services and service delivery. In addition, the separation of Repair staff from the Computer Store and help desk locations has lead to confusion and frustration about whom to speak to when a University customer has a problem with their machine. Please see Figure 5 for a campus map that details current IT staff locations.</p>

Category	Description of Strategic Information Technology Issues
<p>Services #3</p>	<p><b>The University needs to determine how to best use and manage Learning Management System information technology.</b></p> <p>The University of Maine currently supports at least five Learning Management Systems (Learning Management System). Based on our interview with the Director of Distance Education at the University of Maine-Augusta, UMaine supports the highest number of Learning Management System products among all UMS campuses.</p> <p>As UMaine develops its strategic technology objectives, it will be important to evaluate the costs and benefits of the different Learning Management System products that it currently supports. With so many electronic learning tools and resources available to educators and students, it will be important for UMaine to determine how it can best use Learning Management System technology to facilitate learning and collaboration.</p>
<p>Services #4</p>	<p><b>The University needs the ability to proactively measure, manage, and respond to user demands for information technology support.</b></p> <p>The current UM IT help desk function does not interact with other IT support services distributed across the campus, nor do other support functions provide data to the UM IT help desk. In addition, there are numerous methods for tracking help desk requests at UMaine.</p> <p>The concept of a “Single Point of Contact” (SPOC) ticketing system for help desk management has gained traction over the past few years. This practice allows for more in-depth tracking of all IT problems and allows for better data when planning what services and infrastructure are requiring the most time of personnel.</p>
<p>Services #5</p>	<p><b>The University needs to identify ways to improve its use of MaineStreet.</b></p> <p>Although the MaineStreet system has been in production for over four years, many University stakeholders continue to be challenged with this enterprise application. MaineStreet is a System-based service. Challenges include non-intuitive user screens, cumbersome processes and a need for more formal training.</p> <p>The University may consider, for example, developing cross-functional users groups on campus that consider specific needs of the University and seek to optimize the usage and workflow of the MaineStreet system. The complexity of the University, as compared to its System counterparts, warrants a more proactive approach to addressing requirements and needs of the UMaine user community.</p>

Category	Description of Strategic Information Technology Issues
Services #6	<p><b>The University needs to establish an information technology training process that provides new employees with a baseline understanding of the information technology-related tools, resources, and responsibilities that are associated with their roles at the University.</b></p> <p>Providing specific training to new employees is an opportunity to equip people with relevant understanding and skills. During our interviews, employees expressed desire for formal training. Typically, the cost of supporting poorly trained staff and faculty will surpass the upfront costs that may be incurred by providing adequate training during the first few weeks of coming onboard.</p>
Services #7	<p><b>The University needs to plan for the support and development of Online and Blended Learning initiatives.</b></p> <p>Online and Blended Learning is critical to UMaine’s plan to enhance and supplement its educational mission. In this case, blended learning refers to incorporating select components of online learning technology into traditional learning environments.</p> <p>UMaine has already begun deployment of online learning technology, and proactive leadership in this area will continue to be important. Separately, the System office established the Teaching Through Technology Task Force (T4) in 2009. Since that time efforts have been made to create a comprehensive approach to Online Learning efforts. The Distance Learning Steering Committee is currently being formed to participate in the System’s next phase of T4.</p>
Services #8	<p><b>The University needs to plan for the ongoing support and development of Research Computing services.</b></p> <p>Currently there is approximately one FTE supporting research computing. This position is supported by grants alone. The University needs to develop an ongoing funding mechanism for the appropriate staff and facilities (space, power, cooling, etc.) to support technology acquired from external funding for research purposes. Staffing should be adequate to perform the following tasks: manage and maintain the existing clusters, networking, visualization and storage equipment; seek funding for new clusters, storage and networking; implement new equipment; manage user accounts; and provide user support for setting up and running programs on the cluster and visualize data.</p> <p>As a Research University, there is continually greater demand for these resources; however there is currently no plan to take care of this increasing demand.</p>
Infrastructure #1	<p><b>The University needs to establish a comprehensive information technology refresh program.</b></p>

Category	Description of Strategic Information Technology Issues
	<p>Information Technology refresh encompasses many information technology components, from desktop computers to network switches to application servers. At the University of Maine there is no coordinated effort to manage infrastructure purchases that encourages information technology standards, sets predictable expectations, or takes advantage of economies of scale.</p> <p>An example of a partial refresh program, the Faculty Laptop Initiative has been a great success at the University, but it only covers up to 100 faculty per year, which is not even a quarter of total faculty. In addition, there is no similar program for University staff.</p>
Infrastructure #2	<p><b>The University needs to plan for network cabling upgrades.</b></p> <p>Network cabling in 140 out of 200 buildings does not meet industry standards. It has been estimated that UMaine needs upwards of \$8M to upgrade its network cabling to the current IEEE standard of CAT6 Ethernet, throughout its campus buildings.</p> <p>UMaine is the primary research University in the State. Research efforts may be impeded by the lack of quality infrastructure that could hinder that ability of researchers to conduct bandwidth intensive work and collaborate with other institutions. Currently, an EPSCoR grant is providing \$500k for cabling upgrades, but this will only cover 10 of the buildings that need to be retrofitted.</p>
Infrastructure #3	<p><b>The University needs to identify an approach for proactively managing its information technology assets throughout their lifecycles.</b></p> <p>An information technology asset program provides management and oversight over the growing inventory of software and hardware. A program should include Asset Lifecycle Management and Software License Compliance components. This type of program enables stakeholders to make well-informed decisions and eliminates inefficient manual asset management efforts. Today, many commercial off-the-shelf (COTS) help desk products provide this type of functionality.</p> <p>The outcome of a comprehensive information technology asset program should be twofold:</p> <ol style="list-style-type: none"> <li>1. An improved ability to coordinate ordering and purchasing of hardware and software that leverages economies of scale.</li> <li>2. Have accurate data to support at minimum a computer refresh program, and possibly expand the refresh program to include other critical hardware, too.</li> </ol>

Category	Description of Strategic Information Technology Issues
Infrastructure #4	<p><b>The University needs to identify areas where it will invest in new applications and technologies.</b></p> <p>The University faces the ongoing challenge of sifting through the growing expanse of innovative new applications in search of those technologies that will provide long-term value. In some instances, the University may benefit from the first-hand experience of its own early adopters. For example, the College of Education has implemented the Tk-20 assessment software to provide longitudinal data that covers a student's total academic experience at UMaine. Based on available data provided by the University<sup>18</sup>, many students change their majors and/or transfer to other schools. However, there are no indications that UMaine is planning to expand the use of this information technology among the other Colleges.</p> <p>The University may find great value within the UMaine community when determining which technologies can best contribute to the successful fulfillment of its strategic objectives.</p>
Infrastructure #5	<p><b>The University needs to proactively manage the growing demand for internet access.</b></p> <p>The University has world-class internet access via its Internet2 connectivity. In addition, UM IT has worked hard to provide near-ubiquitous wireless access across the campus. Yet, students that were interviewed still complained about wireless access in the dorms.</p> <p>Demands for high capacity internet access at all times will only increase. Although the University is well-positioned to meet these needs in the short-run, continued proactive management and leadership is required to meet the needs of the University stakeholders.</p>
Infrastructure #6	<p><b>The University needs to establish a plan for the migration of servers from distributed locations to the new Neville Hall data center.</b></p> <p>In its effort to strengthen system reliability, security, capacity, and efficiency, the University is seeking to identify and relocate servers and server farms in a way that will best manage and protect UMaine data. This presents an opportunity for UMaine to recognize long-term cost-savings through use of the data centers as compared to remote servers running in offices and departments.</p> <p>Expansion of virtualization technology will support the practice of server consolidation</p>

<sup>18</sup> "Requiring Laptops at UMaine, Computer Connection" 15 September 2008.

Category	Description of Strategic Information Technology Issues
	and provides for greater manageability and disaster recovery capabilities.
Infrastructure #7	<p><b>The University needs to plan for new and strengthened security policies and practices.</b></p> <p>Both UMaine and the University System office are focused on strengthening security policies, procedures and practices across the organization. This will require extensive training and communications, but it remains unclear how this will impact the organizational structure and services within UM IT and if the campus will add an official Information Security Officer (ISO) role.</p>

## Appendix C: UMaine IT Service Delivery Grid

### Overview of the Service Grid:

The Current Environment Assessment Report (July 2011) described six key themes that provided the baseline process for the development of the Plan. Of these six themes, the following two themes relate specifically to IT service delivery:

- The University needs to **identify key IT services** that will enable it to meet its objectives over the course of the next five years.
- The University needs to identify how to effectively and efficiently **deliver key IT services**; whether through Distributed IT, UM IT, UMS ITS, or an outsourced partner.

The IT service delivery grid addresses these themes by identifying key services, and describing corresponding service delivery structures. While this grid relates to all of the initiatives in the Plan, it is of particular importance for the Organizational Alignment and the IT Service Catalog initiatives.

The Organizational Alignment initiative is intended to help the University improve services by developing an effective service delivery model that delineates which services are delivered by UM IT, distributed IT, and UMS. The IT service delivery grid is a tool that can be expanded to represent a comprehensive inventory of IT services at UMaine, and to guide discussions and document decisions about the desired service delivery structure. Combined with an understanding of current staff roles, the resulting structure will guide decisions about the alignment of staff competencies with the appropriate service delivery channel.

Additionally, the IT service delivery grid will inform that continued development of a comprehensive IT service catalog. The services contained in the catalog should be reflective of the services and the delivery structures described in the grid.

The following table describes the elements that comprise the IT service delivery grid.

### Key to Reading the IT Service Delivery Grid

Column Title	Description
<b>Service Category</b>	The service category column lists specific IT services that exist at UMaine. This list is not intended to be comprehensive. It includes key services identified by the Core Team as part of the IT strategic planning process.
<b>Roles</b>	<p>The role column provides a proposed responsibility model for each service. The responsibility model designates which entities have technical responsibility and/or functional responsibility.</p> <ul style="list-style-type: none"> <li>Entities with <u>technical</u> responsibility are responsible for functions such as system administration and maintenance, networking, integration, and coordination with respective functional support entities.</li> <li>Entities with <u>functional</u> responsibility are responsible for functions such as training, reporting, and coordination with technical support entities.</li> </ul> <p>The primary Service Deliverer is indicated in <b>bold</b> type. A primary service deliverer is the entity that should have oversight to ensure that major decisions related to the designated service category align with UMaine’s strategic objectives and are implemented in the most effective manner.</p>
<b>Delivery Model Description</b>	Overview of proposed responsibility and delivery structure.
<b>Key Considerations</b>	Additional details and considerations for a successful implementation of proposed service delivery model.

### Other Considerations:

UMS Data Center: Most of the services listed in the grid include server-based applications. The Core Team anticipates that UMS will provide the official hosting environment for these systems. This hosting environment will be the newly renovated UMS data center at Neville Hall. The decision to consolidate UM IT and departmental (distributed IT) servers to the UMS data center supports the strategic theme to demonstrate a commitment to energy efficiency and information security.



## IT Service Delivery Grid

IT Service Category	Roles	Delivery Model Description	Key Considerations
Administrative Computing – PeopleSoft/ERP	<u>Technical</u> UMS <u>Functional</u> <b>UM IT</b> Distributed IT	<p>UM IT to be technical resource for functional IT support (distributed IT) in meeting the needs of ERP users. This may include report generation and document management.</p> <p>UMS to continue hosting of the system, including management and deployment of system maintenance and enhancements and PeopleSoft modifications.</p>	<p>Most administrative offices are “one deep” in IT personnel. The goal of this delivery model is to cross train in order to eliminate duplication of effort and to provide coverage in the absence of department level IT personnel. By establishing UM IT’s role as a liaison between distributed IT and UMS, this model will also increase the visibility of UMS projects for campus IT and the University’s administrative offices.</p> <p>Many offices employ dedicated IT staff to support administrative computing. Coordination of these technology efforts can reduce duplication of work, eliminate IT staffing dependencies with cross training, and aid the university in prioritizing administrative system modifications needs/requests.</p>
Assistive Technology and Accessibility	<u>Technical</u> UM IT <u>Functional</u>	UM IT to assist disability support services in the implementation, maintenance, and training for assistive technologies.	Although Distributed IT (disability support services) is the primary service owner from an operational standpoint, UM IT will have primary responsibility for ensuring that

IT Service Category	Roles	Delivery Model Description	Key Considerations
	<b>UM IT</b> Distributed IT UMS	<p>UM IT to encourage and promote the practice of Universal Design across campus IT groups (both formal IT and informal/distributed IT).</p> <p>UM IT to also remain involved in the President's Council for Disabilities and the IT Accessibility Committee.</p> <p>UMS to provide guidance to set the baseline accessibility standards and expectations for all campuses.</p>	UMaine's IT environment remains accessible to users with disabilities.
Campus Physical Security Systems	<u>Technical</u> Distributed IT <u>Functional</u> UM IT <b>Distributed IT</b>	<p>UM IT should continue to support the Campus Security office and remain involved in the Campus Security Committee.</p> <p>Auxiliary Services IT group to continue system administration duties. This includes administration of the UMaine ID and access card system (OneCard).</p>	<p>Physical security is unique to each campus. Therefore, it is appropriate that it remain a campus level.</p> <p>UM IT will play an important role in identifying opportunities for efficiencies in system integration and resource sharing.</p> <p>UMS data center will need to have sufficient capacity for resource intensive servers (Blackboard Transact and Video Surveillance).</p>
Distance and Online	<u>Technical</u>	UM IT to be involved in ongoing planning and assessment of distance learning in	UM IT will support distance and online

IT Service Category	Roles	Delivery Model Description	Key Considerations
Learning	<b>Distributed IT</b> UM IT <u>Functional</u> Distributed IT UMS	<p>order to advise the program on opportunities for collaboration and efficiency in service delivery.</p> <p>IT staff (including the Faculty Development Center), CED, and the Center for Excellence in Teaching and Assessment (CETA) will work collaboratively to achieve effective policies and outcomes for the technological aspects of instructional design, instructional delivery, and IT support of faculty, staff, and students in distance and online environments.</p> <p>Purely academic elements of distance and online learning (e.g. course content, staffing decisions, etc.) will remain in the purview of the faculty and Academic Affairs (via CED/DLL) with input from HR, unit heads, etc.</p> <p>UMS may assume some responsibility for certain aspects of marketing and delivery of UMaine online courses. However, the extent of UMS's role in supporting UMaine's distance learning program will be</p>	<p>learning with:</p> <ul style="list-style-type: none"> <li>- Responsive and proactive faculty support for instructional design and delivery – from pedagogical, accessible, technical, and accrediting standpoints.</li> <li>- Responsive student support for technical issues.</li> </ul>

IT Service Category	Roles	Delivery Model Description	Key Considerations
		determined as part of the IT Support for and Collaboration with Distance and Online Learning initiative.	
Pedagogy – Instructional Technologies	<u>Technical</u> UM IT <u>Functional</u> UM IT Distributed IT	<p>Instructional technology provisioning and support will primarily remain a UM IT service with expanded support from the Faculty Development Center. UM IT will work with the Center for Excellence in Teaching and Assessment (CETA) to develop and maintain a support model that is complementary to CETA's events, workshops, and services.</p> <p>In addition, UM IT (specifically, the Faculty Development Center) will collaborate with the Continuing and Distance Education program (online learning), the College of Education and Human Development (instructional technology early adopters and innovators), and the Center for Excellence in Teaching and Assessment.</p>	Improved governance should position faculty to inform decisions about classroom technologies. Also, UM IT will be better positioned to inform faculty about new technologies and possible solutions to expressed needs and desires.
	<u>Technical</u>	Classroom equipment provisioned and	As the University works to standardize classroom technology, the process for reserving learning spaces and equipment

IT Service Category	Roles	Delivery Model Description	Key Considerations
Pedagogy – Classroom Technology	<b>UM IT</b> <u>Functional</u> UM IT	supported by UM IT.  UMaine to continue efforts to standardize digital media equipment in classrooms and other learning spaces.	should be assessed and streamlined where possible. This will be especially pertinent for distance learning and inter-campus classroom reservations.
Application Virtualization	<u>Technical</u> <b>UM IT</b> <u>Functional</u> UM IT  Distributed IT	Once implemented, application virtualization will be supported by UM IT. This includes virtualization of software for UMaine, as well as consideration for software that could be extended to other campuses with coordination from UMS.  Distributed IT to support functional use of specialized applications. Distributed IT to provide UM IT with instructions for who can access specific applications.	In order for application virtualization to be effective, both local and remote users will need fast and reliable network connectivity. In addition, licensing agreement compliance will require granular access controls, and determining license volume will require ongoing demand planning.

IT Service Category	Roles	Delivery Model Description	Key Considerations
Copy/Print/Scan Services	<u>Technical</u> <b>UM IT</b> UMS Vendor <u>Functional</u> UM IT	<p>UM IT to maintain overall responsibility for maintaining effective copy/print/scan services at UMaine.</p> <p><u>Hardware:</u></p> <p>Continue outsourcing of hardware maintenance service contracts for copy/print/scan devices in labs.</p> <p>Continue UMS service contracts for departmental devices.</p> <p><u>Software:</u></p> <p>UM IT will continue to run and support the printing management system (Pharos).</p>	<p>Service level agreements with vendors will state that printers must be compatible with the MaineCard payment model.</p> <p>University to consider replacement of lab printers with devices that have copy, scan, and high quality printing capabilities.</p>
Learning Management System	<u>Technical</u> UMS <b>UM IT</b> <u>Functional</u> UM IT	<p>UMS to continue hosting of Blackboard.</p> <p>UM IT to lead reassessment of FirstClass to determine if the LMS fits the needs of UMaine. This reassessment process will include consideration for open source and cloud based systems.</p> <p>UM IT will continue to provide faculty and student support for LMS environments that</p>	<p>See Learning Management System initiative.</p>

IT Service Category	Roles	Delivery Model Description	Key Considerations
		UMaine utilizes.	
Data Center Services	<u>Technical</u> <b>UMS</b> <u>Functional</u> UM IT	<p>UMS to provide and maintain data center environment.</p> <p>UM IT will be responsible for educating distributed server owners about the benefits of the new data center and the resources available to support server owners during the transition.</p> <p>In addition, UM IT will work closely with UMS to ensure that the appropriate infrastructure is in place to support service needs such as remote access.</p>	Data center should include tiered access levels (for hosting systems of various criticality), enterprise class security, and should support virtualizations and energy efficiency.
Institutional Repository	<u>Technical</u> Vendor (Digital Commons) <u>Functional</u> <b>Distributed IT</b> UM IT	<p>The Digital Commons Institutional Repository (IR) is hosted by Digital Commons, who will provide unlimited training and technical support, per the terms of the annual agreement.</p> <p>As the center for IT coordination at UMaine, UM IT should maintain an understanding of the IR and should be consulted for IR</p>	<p>The vision of the IR project is to create a library-based digital repository in support of the core missions for the creative scholarly output of faculty, researchers and students that provides expanded accessibility and long-term preservation.</p> <p>In order for the IR to be successful, a sustainable funding model needs to be</p>

IT Service Category	Roles	Delivery Model Description	Key Considerations
	Vendor (Digital Commons)	related projects/initiatives.	<p>identified. Currently, the incremental cost for other campuses to join on UMaine's IR is based on FTE.</p> <p>Other considerations include technical planning to address scalability for future expansion to other UMS campuses; capacity to accept and present information in various formats; identification of a metadata standard; establishment of sustainable funding for IR.</p>
Development and Innovation (includes Mobile Applications)	<u>Technical</u> UMS <b>UM IT</b> Distributed IT <u>Functional</u> UM IT Distributed IT	IT leadership at UMaine is responsible for maintaining a collaborative culture that fosters innovation at the local level. The local level may be a department or an individual, whether student, faculty, or staff.	<p>UMaine will improve the alignment of existing resources to better support innovation. Existing resources include the Innovation Center. The renovated UMS data center will be an additional resource that could be linked to the Innovation Center.</p> <p>The data center could provide a separate (segregated network) 'sandbox' environment to support established/aspiring programmers and developers with innovative ideas.</p>



IT Service Category	Roles	Delivery Model Description	Key Considerations
			Key considerations include the ability to adopt and integrate new applications in current workflow; project management framework; and student and faculty awareness and buy-in.
Email	<u>Technical</u> <b>UMS</b> Vendor (cloud) <u>Functional</u> UMS	UMS to host and administer the official email system for all UMaine email users.	In order to move to a single email system, a better email address grouping mechanism must be identified and implemented. Currently, individuals start independent email systems in order to gain this functionality.
Help Desk	<u>Technical</u> <b>UM IT</b> <u>Functional</u> UM IT	<p>UM IT to expand help desk to be accessible in some capacity 24x7 with knowledgeable staff and a commitment to providing excellent customer service.</p> <p>UM IT to establish metrics for maximum acceptable response times. This should be tracked, reported, reviewed regularly, and responded to as needed.</p>	<p>The UM IT organization will require restructuring and some growth in order to accommodate this level of customer service.</p> <p>Help Desk policies and procedures will be based on principles outlined in the Information Technology Infrastructure Library (ITIL).</p>
Library System	<u>Technical</u> UM IT	Library IT personnel and UM IT to coordinate and align responsibilities. Library	Certain State funded library IT services may not be candidates for alternative delivery

IT Service Category	Roles	Delivery Model Description	Key Considerations
	<u>Functional</u> <b>Distributed IT</b>	IT and UM IT to consider having UM IT administer servers and applications.  Library IT to provide the functional end-user support that is necessary to ensure library resources are used effectively.	models, as funding is specifically structured for a service model with distributed IT support.
Networking	<u>Technical</u> <b>UMS</b> <b>UM IT</b>  <u>Functional</u> UMS UM IT	<u>Network</u>  UMS and UM IT to establish a service level agreement for providing network services to UMaine.  UMS to maintain the T1 trunk lines connecting the UMaine campus.  <u>VoIP</u>  UM IT to move forward with VoIP project with support of UMS. This implementation is an opportunity to revisit current roles.	This service level agreement requires an upper level decision maker. Someone must be in a position of authority to work out the difficult negotiations. This supports the vital need for a re-structuring of IT on campus.  UMS, UM IT, and UMaine executive leadership need to identify an acceptable cost to be charged by the system. UMaine to establish a clear method for allocating that cost. This will be a critical element of a new service level agreement. The service level agreement should also include consistent and timely notification of UMS outages that impact UMaine.
Information Security Standards and Policies	<u>Technical</u>	Information security standards and policies will be directed by UMS; however UM IT	

IT Service Category	Roles	Delivery Model Description	Key Considerations
	<b>UMS</b> UM IT <u>Functional</u> UM IT Distributed IT	and distributed IT will remain responsible for ensuring that practices are compliant with UMS standards.  UM IT will be responsible for working with UMS to ensure that standards and policies are centrally located, up-to-date, and available to the intended audience.	
Portal	<u>Technical</u> <b>UMS</b> UM IT <u>Functional</u> UM IT	UM IT to lead the UMaine portion of the portal project with direction and initiative leadership from UMS.	The portal will provide a single source of reference and be an important tool for promoting resource awareness to the entire UMaine community.  The portal project should include consideration for integration with future technologies. For example, the portal may be leveraged as a platform for accessing virtualized applications.
Student Services – Campus Life	<u>Technical</u> UM IT Distributed IT Vendor	UM IT to work with Student Services to ensure that students have consistent access to the technology resources that will best position them for success at UMaine.	Areas to be evaluated/considered include, but are not limited to: <ul style="list-style-type: none"> <li>- internet access</li> <li>- social networking</li> <li>- IT security and safety awareness</li> <li>- technical support needs</li> </ul>

IT Service Category	Roles	Delivery Model Description	Key Considerations
	<u>Functional</u> <b>Distributed IT</b>		
Student Services – Education Experience	<u>Technical</u> UM IT Distributed IT <u>Functional</u> <b>Distributed IT</b>	<p>UM IT to work with distributed IT to identify opportunities to use information technology to support student outcomes, program improvements, and curriculum mapping.</p> <p>For example, if UMaine chooses to implement a campus-wide Student Assessment system, UM IT would have an important role in identifying the most effective service delivery model, which may include technical support from UM IT.</p>	<p>Areas to be evaluated/considered include, but are not limited to:</p> <ul style="list-style-type: none"> <li>- e-portfolios</li> <li>- student assessment and outcomes</li> <li>- learning space needs</li> <li>- technology proficiency training</li> </ul>
Training	<u>Technical</u> <b>UMS</b> <b>UM IT</b> *primary responsibility will vary with area of training. <u>Functional</u> <b>UMS</b>	<p>UM IT to commit to ensuring that training resources (whether UMS, UM IT, local, or otherwise) are sufficient to support users in using the services, resources, and tools identified in the IT Service Catalog.</p> <p>UMS to provide information security training resources. UMS to have a role in supporting collaboration and leveraging of</p>	Please see training initiative in IT Strategic Plan.

IT Service Category	Roles	Delivery Model Description	Key Considerations
	UM IT Distributed IT	training resources across campuses where appropriate.	
Website (External Facing)	<u>Technical</u> UM IT <u>Functional</u> <b>Distributed IT</b>	<p>University Relations to remain responsible for the UMaine website.</p> <p>UM IT provides technical support to University Relations. UM IT and University Relations have a current service level agreement in place.</p> <p>UM IT to promote web services awareness via service catalog and help desk referrals.</p> <p>UM IT to also support integration and migration efforts that may be required due to the linking of resources and the standardization of other UMaine web pages to WordPress.</p>	University Relations uses WordPress as its Web Content Management System (CMS). UMaine should formally adopt WordPress as its standard CMS.

## Appendix D: Budget Estimates

### Explanation of Costs

The following pages provide a detailed explanation of the assumptions behind the costs included in the strategic IT initiatives matrix. *Please note: all estimates contained herein are for planning purposes only. These numbers are subject to change and should not be considered final. They serve as a starting point for further discussions.*

#### 1. IT LEADERSHIP AND GOVERNANCE

The starting salary for the new CIO is estimated at \$125,000, plus 50% for benefits. Due to current fiscal conditions, this estimate does not include cost of living increases.

**Each Year:**  $\$125,000 + (50\% \times \$125,000) = \$187,500$

#### 2. FISCAL MANAGEMENT

This initiative is not directly linked to a dollar figure. The objective of this initiative is to find opportunities to reduce non-strategic (operational) spending of IT funds, and provides UMaine with more flexibility to reallocate spending to areas that differentiate the University's mission and strategic priorities (strategic spending).

#### 3. ORGANIZATIONAL ALIGNMENT

Over the first two years, costs will be incurred based on time spent identifying IT staff, interviewing IT staff, gathering information, analyzing results, and formulating recommendations. We expect that this will take approximately 800 hours (500 in year 1, and 300 in year 2), and have applied a rate of approximately \$100 per hour.

**Year 1:** 500 hours x \$100 = \$50,000

**Year 2:** 300 hours x \$100 = \$30,000

However, the result should be a zero-sum, or even a long-term cost savings as redundancies are eliminated and the quality of IT services are improved. Direct savings can be expected due to elimination of an estimated five positions (3 in FY 2014, and 2 in FY 2015). Calculations are based on an average of \$60,000 (salary and benefits) per IT staff. This will likely be achieved by eliminating/absorbing positions as staff resign or retire.

**Year 3:** 3 positions x \$60,000 = \$180,000

**Year 4:** \$180,000 + (2 positions x \$60,000) = \$300,000

**Year 5 (no additional changes):** \$300,000

#### 4. TRAINING AND PROFESSIONAL DEVELOPMENT

The Plan has estimated approximately \$1,000 per IT employee to fund annual technology training. The Current Environment Assessment identifies 96 FTE staff in the IT Job Family at UMaine.

**Total Budget per Year:** 96 Total FTE IT staff x \$1,000 = \$96,000

UM IT currently budgets approximately \$40,000 per year for training tools, seminars, and conferences. With 40 FTE, this is consistent with the recommended \$1,000 per employee.

**Current UM IT Spending:** \$1,000 x 40 FTE UM IT staff = \$40,000

The Plan assumes that departments with distributed IT currently budget for training of their own IT staff. However, we've estimated that training expenditures in distributed environments are lower than those within UM IT. Accordingly, we've assumed that the current budget covers \$400 of training for each of the 56 FTE distributed IT staff.

**Distributed IT Spending Gap:** \$1,000 - \$400 current spending = \$600 per FTE

Consistent with the staffing changes described in the organizational alignment initiative, we've estimated additional spending needs based on 53 distributed IT FTEs in FY 2014, and 51 FTEs by FY 2015.

**Year 1:** \$600 x 56 FTE distributed IT staff = \$33,600

**Year 2:** \$600 x 56 FTE distributed IT staff = \$33,600

**Year 3:** (\$600 x 53 FTE distributed IT staff) – (\$400 x 3 eliminated positions) = \$30,600

**Year 4:** (\$600 x 51 FTE distributed IT staff) – (\$400 x 5 eliminated positions) = \$28,600

**Year 5 (no additional changes):** \$28,600

UMaine will leverage existing resources to improve training opportunities for faculty, staff, and students.

## **5. HELP DESK**

UMaine should be able to leverage existing resources to establish the single point of contact (SPOC) and improve help desk services. Over time, additional staffing resources may be necessary to support a 24/7 help desk; however, additional resources may be identified as an outcome of the organizational alignment initiative.

## **6. LEARNING SPACE IT SUPPORT MODEL**

Spending on classroom equipment is expected to remain constant, with improved hardware standardization and spending decisions that align with the strategic principles set forth in this Plan.

## **7. TECHNOLOGY SUPPORT FOR AND COLLABORATION WITH DISTANCE AND ONLINE LEARNING**

The Plan does not identify specific components that would require additional spending for distance and online learning. However, it is expected that as more courses are taught online, additional resources will be necessary to support instructional design.

It is likely that the organizational alignment initiative will identify staffing resources with instructional design skills to support online learning through increased collaboration with UM IT and CED.

## **8. IT FOR RESEARCH**

The long term goal of this initiative is to better utilize existing spending by pooling resources. This will allow researchers and graduate students to be more productive.

## **9. IT REFRESH AND REASSESSMENT**

### Computer Refresh Costs

UM IT currently maintains an IT equipment refresh budget. However, in order to establish a consistent computer refresh cycle of four years across the campus, additional funding will be necessary.



For this estimate, we've assumed that computers in distributed environments are currently replaced every six years. We've estimated 1,200 departmental computers that will require replacement. This includes computers for the 700 professional staff, and 500 of the 800 classified staff (not all classified staff use computers as part of their job).

The estimated cost per computer is \$1,500.

$(1,200 \text{ computers} \times \$1,500 \text{ per computer}) \times 33.33\% = \$600,000$

\*33% is used to adjust for existing funding for six year replacement cycle (66% of funding required for a four year refresh already exists).

In order to meet four year refresh cycle, 25% of computers will be replaced each year.

**Each year:**  $\$600,000 / 4 \text{ years} = \$150,000 \text{ per year}$

#### Network Maintenance and Refresh Costs

UMaine is working with UMS to develop a Service Level Agreement (SLA) for UMS to provide all maintenance of UMaine's network connections, including wireless. The estimated annual cost for maintaining all network connections including wireless would be \$847,000. The current estimated revenue collected for network connections is \$556,000.

Additional Costs for SLA:  $\$847,000 - \$556,000 = \$291,000$

UM IT has budgeted for the purchase of 50 switches for about \$5,000 each to launch VoIP. The estimates provided above are based on the assumption that UMS would provide all switches and replace them on a four year basis. Accordingly, we've adjusted the estimate as follows:

Cost of switches =  $50 \times \$5,000 = \$250,000$

Amortization of switch replacement cost over four years:  $\$250,000 / 4 \text{ years} = \$62,500 \text{ per year}$

**Each Year:**  $\$847,000 \text{ original SLA estimate with switches} - \$556,000 \text{ current spending} - \$62,500 \text{ costs covered by UM IT} = \$228,500$

#### Total IT Refresh and Reassessment Costs

**Each Year:**  $\text{Computer Refresh Costs } \$150,000 + \text{Network Costs } \$228,500 = \$378,500$

## 10. APPLICATION VIRTUALIZATION

Initial costs for setting up application virtualization environment (hardware and platform) are estimated at approximately \$150,000. This initiative will require a substantial effort, and is not expected to be implemented until FY 2015.

**Year 1:** NA

**Year 2:** NA

**Year 3:** \$150,000 implementation costs

Over time, there will be significant cost savings associated with application virtualization. For planning purposes we've estimated savings associated with the elimination of a single computer lab, which costs approximately \$40,000 per year to operate.

**Year 4:** elimination of \$40,000 in computer lab costs

**Year 5 (no additional changes):** savings of \$40,000 in computer lab costs

This initiative will be of strategic importance to the success of UMaine's distance learning program. Currently, courses that use expensive software cannot be taught at a distance because learners do not have access to computer labs and cannot afford to download the software locally. Additional revenue opportunities that will result from expanded distance learning capabilities are not reflected in this matrix.

## 11. IT SERVICE CATALOG

UMaine already has the technology and the framework for expanding the IT Service Catalog. Accordingly, additional costs associated with this initiative are expected to be minimal.

## 12. LEARNING MANAGEMENT SYSTEM

The University's current licensing contract with FirstClass costs approximately \$75,000 per year and expires at the end of 2014. Operating costs for the FirstClass server are approximately \$10,000 per year.

The following figures are based on the assumption that the University will choose to discontinue the use of FirstClass in favor of Blackboard. These figures do not reflect costs associated with transferring courses that now exist in FirstClass to the Blackboard LMS.

**Year 1:** No change

**Year 2:** No change

**Year 3:** \$75,000 License + \$10,000 operating costs = \$85,000 savings

**Year 4 (no additional changes):** \$75,000 License + \$10,000 operating costs = \$85,000 savings

**Year 5 (no additional changes):** \$75,000 License + \$10,000 operating costs = \$85,000 savings

### 13. E-MAIL

The following figures are based on the assumption that the University will choose to standardize Google Mail as the official e-mail service. The savings attributable to the elimination of the FirstClass e-mail service are reflected in the Learning Management System initiative.

In addition, savings would be attributable to eliminating approximately 25 of the distributed email servers that currently exists on campus. Estimated costs for operating an email server are \$1,250 per year. For planning purposes, we've estimated that this will be a gradual process, with full standardization occurring in Year 3.

**Year 1:** 10 email servers x \$1,250 operating costs = \$12,500

**Year 2:** \$12,500 + (10 email servers x \$1,250 operating costs) = \$25,000

**Year 3:** \$25,000 + (5 email servers x \$1,250 operating costs) = \$31,250

**Year 4 (no additional changes)** = \$31,250

**Year 5 (no additional changes)** = \$31,250

## Appendix E

### Summary of University Research – Case Western, Purdue, and Michigan

#### Overview of Process

BerryDunn developed a set of questions for the technology leaders at some of UMaine's peer institution. Three institutions were selected to conduct benchmarking research: Case Western Reserve (OH), Purdue (IN), and the University of Michigan. Each school was selected for its' particular characteristics in its approach to IT. For example, the University of Michigan research is focused on IT governance; Purdue for innovation of software application development, and Case Western Reserve for its customer service and support model. The CIO of each institution was contacted and asked questions regarding IT at their school.

BerryDunn began the questionnaire process by conducting preliminary research to gain familiarity with each institution's IT strengths and distinguishers. Each CIO (or designated representative) was contacted and scheduled a time for the interview. All interviews were conducted by phone. The average interview lasted approximately one hour. The feedback provided is per interviewee, and is representative of the person interviewed. It is not the opinion of BerryDunn.

#### BerryDunn interviewed the following individuals:

1. Mark D. Henderson, Associate Vice President /COO Information Technology Services, Case Western Reserve University (CWRU). Interviewed via phone on November 4, 2011. Mark has been at Case Western since January 2010. Mark has worked in both the private sector and higher education for over 25 years. He has also worked for GE, University of Maryland, and University of Cincinnati.
2. William G. McCartney, Vice President for Information Technology and CIO, Oesterle Professor of Information Technology, Purdue University. Interviewed via phone on November 9, 2011. Gerry has worked in higher education for over 20 years. He was at the Wharton School (Penn) for 10+ years prior to joining Purdue in 2004.
3. Laura Patterson, Associate Vice President and CIO, University of Michigan. Interviewed via phone on November 10, 2011. Laura has been at the University since the early 1990's and started there as the Registrar. She has been CIO since 2010. Between 2001 and 2010, the University of Michigan did not have a CIO position.

## Summary of Discussions and Information Provided

The information below is based on research to date. All institutions are trying to better allocate their technology spending. It is no longer acceptable for the vast majority of technology dollars to be spent on administrative and commodity IT. This was apparent in all three interviews, and it has manifested itself in some different and some similar ways, which we have attempted to capture in the sections below.

All institutions that we met with are working to better align IT services across central and distributed IT. This is largely occurring through an increased focus on strengthening IT Governance and a realization that some services are better provided centrally, while other unique needs are better served by individual areas of each respective institution.

### Case Western Reserve University

According to the CWRU website, IT Operational Excellence is the effective and efficient delivery of information technology and service required by the end users that add measurable value to the University Community. Since spring 2010, the central IT organization has begun a division-wide Operational Excellence initiative to effectively and efficiently deliver information technology and service to the university community. It is divided into five parts: organization, process, technology, financials and communication.

Similar to other schools, CWRU is trying to reduce administrative computing costs while spending more of every IT dollar on supporting the core mission of Student Support, Research, Teaching, and Outreach. To this end, the University has worked very hard to better coordinate central and distributed IT services.

A key element of this effort has been to outsource the Help Desk function. It was reported that CWRU is now on their second attempt to outsource Help Desk. When asked “how does this improve customer service?” The reply was that it has to be done with considerable planning and structure. In order to provide excellent service, strong Service Level Agreements (SLA) are developed with all CWRU “customers.” If problems arise beyond the SLA then there’s always an IT Manager “on-call” at the University. CWRU has created a Single Point of Contact Help Desk. The Help Desk vendor delivers the information, but CWRU IT still owns the service delivery and support of IT.

Another focal point of improving services has been to improve communications across the University. By nature CWRU is highly decentralized. This is reflected in the many pockets of IT that exist on campus today. At CWRU central IT has taken the lead on establishing weekly meetings between central IT and Colleges. Each College a College Technology Officer (CTO) that serves as the liaison to a University wide IT Committee that serves to coordinate and prioritize IT projects. These are IT staff supported by their Dean’s budget.

Link to visit:

- <http://www.case.edu/its/opex/> - Operational Excellence

## Purdue

Gerry (Purdue CIO) actually applied for a job with Orono in the early 90's. It is a small world. In Gerry's opinion, getting IT Governance right has been the fundamental step in improving service delivery and improving efficiency at Purdue. However, in his opinion progress has been slow. Gerry had a great analogy of the challenge of creating real change in technology. He said, "think of the problem as leaning against a massive wall of jello. You push against one area and the ripples move outward." In other words, it is a very difficult task to get disparate IT operations moving in the same direction.

The University has been working institute "forced grading" in an attempt to improve IT staff performance. All managers are required to identify their top 25% of personnel and the lowest performing 10%. In Gerry's opinion, large state institutions force out their best people because of inverse incentives. To this end Gerry has negotiated (with HR) more flexibility into pay scales to allow him the ability to provide bonuses to top performers and give awards to those that demonstrate innovation and adopt best practices.

Purdue has been a leading innovator of IT amongst higher education institutions. At Purdue, the fundamental concept is, if it doesn't "move the dial" then don't ask for funding. Innovation is being built into the culture of IT services and planning. Purdue has developed applications that aid student services and support, teaching, and research. Some of the in-house applications are in the process of being licensed, with the intention of other colleges and universities purchasing the software.

The following applications have been designed by Purdue:

1. **DiaGrid**<sup>1</sup>: An academic distributed computing network that is partnered with nine universities (including Purdue). Designed to accommodate additional computers are new institutions join the network. Primarily used by researchers.
2. **Signals**<sup>2</sup>: Tracks student academic progress and warn students in real time if they need to work on certain areas by monitoring their interactions with online materials. Students are put into three academic risk categories: green, yellow or red. The colors, based on traffic light signals, indicate a student's performance in the class. For example, those in the red are underperforming academically and are notified by their "signal" on the course website or their smartphone. The Signals application adds value to both the student and the professor: students are aware of the areas in which they need to improve, and professors are interacting more with students in a collaborative effort to raise their grades. More than 11,000 students are using Signals at Purdue and the responses have been positive. Signals is in the process of being licensed for commercial use in the near future.

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<sup>1</sup> <http://www.dia-grid.org/>

<sup>2</sup> <http://www.itap.purdue.edu/studio/signals/>

3. **HotSeat**<sup>3</sup>: Uses student conversations on Facebook and Twitter to improve student learning. Software captures student comments about a class and allows everyone (students and teachers) to view the comments. Students can post to the HotSeat with their FB or Twitter account, or can send a text message through the website. Teachers use HotSeat to monitor student participation and to pose questions to the class. Questions submitted through HotSeat can indicate to the professor areas that need to be focused on in order to increase student understanding.
4. **Mixable**<sup>4</sup>: Allows students to create online study groups and forums through their social media accounts and share items (documents, pictures, audio, and video) through a cloud storage application. Students can connect with people in their network as a means to communicate information regarding course content. This is a valuable method of knowledge sharing for the current college student, as Mixable uses the social media that is already familiar to students (FB, smartphone, Twitter). This direct path for sharing resources allows the student to easily pose a question to the class, or to create a discussion about job opportunities, course content, etc.
5. **HubZero**: Open source platform for creating research related websites: “a Facebook for research scientists”. HubZero creates a community of researchers and allows them to collaborate online, distribute research results, or provide education and training. For example, a professor posted an application on HubZero that allows student to interact with a virtual protein (something that is too small to perform in the lab).

Links to visit:

- <http://www.itap.purdue.edu/studio/> - Purdue’s Innovation Studio
- <http://www.purdue.edu/cio/sgc.cfm> - Purdue’s IT Governance

## UMichigan

The University of Michigan has 19 schools and colleges (in addition to 30 research institutes and an academic hospital), and each have a high level of autonomy. The Dean of each school has autonomous spending authority. As a result, there was an abundance of organic, decentralized, IT growth that had developed. In 2010, the University underwent a major IT assessment that identified 1,400 IT classified staff across the institution. This equates to an approximate ratio of one IT staff for every 29 students (~40,000+ students). In comparison, even by adding all System and UMaine IT staff, Orono has a current ratio of one staffer per 64 students (~11,500 students).

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<sup>3</sup> <http://www.itap.purdue.edu/studio/hotseat/>

<sup>4</sup> <http://www.itap.purdue.edu/studio/mixable/>



Although Michigan has a very large student body this is still a disproportionate number of IT support. Part of the explanation is the intensive level of research at Michigan that generates organic growth. The University realized that this was not sustainable. Most importantly to moving things forward, when Michigan began its IT assessment to review costs the agreement was that cost savings realized would be recouped by the Deans for use at their discretion. Therefore, everyone agreed that change was coming, but that the change was focused on improved service delivery, more efficient utilization of resources, and NOT just on cutting costs.

The current IT Council was established to support the University's IT governance model by creating IT strategies, setting IT visions, prioritizing initiatives and promoting new technology ideas raised by individuals at the University. The new IT governance structure as a whole supports the University's core mission of teaching and learning, research, knowledge and patient care campus-wide. The governing body also oversees and approves technology related spending, and strives to increase resource and infrastructure sharing throughout the campus.

The following bullet points are hyper-linked to web pages of the Michigan website that highlight the current initiatives underway at that University. Links to visit:

- [IT Rationalization](#)
- [NextGen Michigan IT Environment](#)
- [Implement Enterprise-wide Systems](#)
- [Promote Environmental Sustainability](#)
- [Safety and Security](#)
- [CIO/ITS Unit Goals](#)

## Conclusion

All Universities are working to manage the cultural change of sharing information; sharing resources; and removing the "Us vs. Them" mentality of central and distributed IT. This is no longer a nice to have concept, but imperative for survival. In addition, establishing University-wide IT Governance does not happen overnight. It is a multi-year effort that requires the support and backing of University's highest level executives. Creating an IT Governance framework is not enough. The school must continually work on improving the speed and rapidity of decision making to support the needs of technology users. Otherwise "bad habits" begin to reappear and IT services begin to "silo" again.

By establishing clear goals and objectives and developing University-wide planning for technology, the Universities we have looked at are improving the delivery of services, spending more on mission-critical IT and creating a culture of communications that is improving the image and the value of IT at their respective schools.



	Purdue University	Case Western Reserve	University of Michigan	University of Maine
<b>Student Body</b>	39,726 Students	9,837 Students	41,185 Students	11,501 Students
<b>Total Campus Budget</b>	\$1.8B (FY10-11)	\$900 M	\$3.1 B (FY 12)	\$220.9 M <sup>5</sup>
<b>Central IT Expenditures (\$)</b>	\$60.8 M	\$ 38 M	\$117.9 M	\$3.4 M
<b>Central IT Expenditures (%)</b>	3.4%	4.2%	3.8%	1.5%
<b>Central IT Spending per FTE Student</b>	\$1,530	\$2,643	\$2,863	\$296
<b>Central IT - FTE Employees</b>	558	116	644	40
<b>Students per Central IT FTE</b>	71	85	64	288
<b>ERP System</b>	SAP – Financial & HR OnePurdue – SunGard Higher Education's Banner package	PeopleSoft	PeopleSoft HR/Finance/Student	PeopleSoft & SunGard
<b>IT Leader</b>	Vice President for Information Technology & CIO	Vice President for Information Technology & CIO	Associate Vice President, Information and Technology Services & CIO	Executive Director
<b>IT Leader Name</b>	William Gerry McCartney	Lev Gonick	Laura Patterson	John Gregory
<b>IT Leader Reports to</b>	Executive VP for Business, Finance & Treasurer & Provost	Provost and Executive Vice President	EVP CFO & EVP Provost	
<b>System School</b>	Yes	No	Yes-has three campuses	University of Maine includes 7 institutions

<sup>5</sup> Number is for the Education and General Fund Budget FY 2011