

THE
UNIVERSITY
OF RHODE ISLAND

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Information Technology Services

(2010-2015) Strategic Plan

Executive Summary

This strategic plan for Information Technology Services is organized according to the University Academic Plan, 2010-2015. This structure most easily focuses the ITS plan on how technology can advance the academic plan of the university. The ITS plan also focuses on developing alternative funding sources, in order not to rely exclusively on additional budget allocations from Academic Affairs for implementation. For example, external funding sources are pursued and used, internal cost savings are realized by implementing new, more cost effective technologies, and new approaches to managing technology for the campus can save money for ITS (as well as for colleges and divisions) that can be reinvested in implementing parts of this plan. In addition, ITS is also committed to continuing its practice of regularly evaluating its existing and vacant staff positions, as well as its organizational structure, to ensure that ITS has positioned itself to best meet the changing needs of the University with rapidly changing technology alternatives and opportunities.

Nonetheless, it should be made clear that increasing general fund allocations for Information Technology Services from the normal budget allocation process is one of the best investments the University can make. The high Return on Investment in terms of campus productivity gains for hiring a new ITS staff member or providing the campus with more effective or reliable software or hardware results in a substantially greater increase in the value of the investment the University has already made in existing personnel. Faculty with excellent technology tools and support are not only more productive and creative, but they make student learning more productive, improving both faculty and student recruitment and retention. The same can be said for staff throughout the campus. For example, it takes longer for staff to explore, learn, implement, pilot, and deploy new cost saving technologies such as thin client and virtual computing while simultaneously supporting existing systems upon which the university is dependent.

About Information Technology Services

ITS provides enterprise computing, data networking, telephone, and television services to support the instructional, research, development, business operation and residential life needs of the University. Information Technology Services (ITS) provides leadership and strategic direction for technology utilized by the University of Rhode Island community for instruction, research, and business operations. ITS maintains central server support, general purpose computing facilities, student personal computing resources, and a high-speed network. Students and faculty are provided access to an assortment of electronic services through the commercial Internet as well as Internet2. ITS is a service organization dedicated to the success of the University, whose staff provide a variety of technical support services in support of the University's mission and goals.

Centralized administrative, instructional, and research computing are supported on multiple servers running a wide variety of operating systems from an IBM RISC system running AIX to Linux and Windows servers. Facilities for computer graphics are also offered, including a color plotter. Several hundred personal computers and workstations are located in public work areas, and virtually all offices are equipped with computing resources. These devices are connected to a high speed wired and wireless campus network which provides access to ITS facilities and peripheral devices, as well as the gateway to the global Internet. ITS also supports Internet and cable television services for all students in the campus residential life facilities and telephone services for the entire campus.

Information Technical Services manages numerous personal computer laboratories on campus, featuring both Windows and Macintosh workstations. A wide variety of software application packages are available. These labs are available for faculty research, teaching, and general student use. A number of laboratories are specifically designed for use as computer classrooms. In addition, all general assignment classrooms are technology- equipped.

Information Technology Services consists of 34 staff in Media and Technology Services (MTS), 44 staff in University Computing Systems (UCS), four staff in the Business Office, one Information Security officer, and three staff in the office of the Chief Information Officer (including the CIO). MTS staff are located in Chaffee Hall, the Carothers Library, Tyler Hall, and Rodman Hall. UCS staff are located primarily in the Surge building with Operations staff in Tyler Hall. The Business Office staff are located in the Surge building. Information Security is located in Tyler Hall, and the CIO offices are located in the Carothers Library.

Vision

ITS will be seen by the URI campus community as the single best campus entity for improving the financial, instructional, research, and operational environment of URI. ITS will earn this recognition by significantly reducing costs, increasing revenues, improving productivity, and enhancing quality through the judicious application and investment of technology resources at its disposal. ITS products will be easy-to-use, robust, reliable and secure. Most importantly, ITS products will add quantifiable value to URI. The institution will realize that consistent commitment to and reinvestment in ITS generate a rate of return that always exceeds the amount invested. ITS will provide the highest quality, most cost effective, and most timely technology solution possible either through in-house acquisition and development, or outsourcing.

Mission

Information Technology Services (ITS) improves the productivity, quality, and cost effectiveness of the university through the efficient, cost effective, and timely provisioning of campus-wide technology systems and services that advance the programs, priorities, and strategic direction of all parts of the university community including academic, research, student life, advancement, and administrative units.

Comparative Data

The student to staff ratios below for Fall 2009 demonstrate that ITS staff productivity is far better than any of our peers and aspirants. With staff ratios far lower than its peers, ITS is the most productive of these universities by far. Even with ten more staff, ITS would only be at the same level (173:1) as the next ranked institution.

University	Enrollment	Staff	Ratio
University of Rhode Island	15,904	81	196:1
University of Connecticut	24,273	140	173:1
Montana State University	11,976	75	160:1
University of Wyoming	12,067	93	130:1
North Dakota State University	13,230	113	117:1
University of Delaware	20,500	175	117:1
University of Virginia	24,541	251	98:1

The national average for percentage of total university budget allocated to information technology at institutions of our size and character is 3.4%. The percentage for ITS at URI (including all fringe benefits as well as 101 and 115 accounts) is 2.5%, down from 3.89% in 2004, from which it has fallen for seven straight years. Even with State appropriations decreases, the total budget for URI actually increased from \$400 million to over \$600 million over this seven year period.

For FY 2010, ITS has acquired \$2,665,735 in grants. With 12 staff who are eligible to seek grant funding, this amounts to an FTE ratio of \$222,145 which quite favorably compares with the various colleges at URI.

Regardless of whether the measure is per capita staff or percentage of budget, ITS remains, by far, the most productive of our peer institutions. As resources decrease, a larger percentage of ITS staff time is required for maintenance of existing software and hardware, but that doesn't mean ITS no longer entertains strategic projects; just not as quickly or as many as would otherwise be the case.

Strategic Goals *(all goals and objectives in **bold** are quoted directly from the 2010-15 Academic Plan)*

I. Enhance academic quality and value through focused efforts in enrollment planning and strategic investments in teaching and scholarship.

- a. **Integrate teaching and research across the University that advances science and technology and their application in society.**
 - i. Sakai upgrade and enhancements
 1. Upgrade, engage consultants for advice on direction and support, and add faculty-requested enhancements.
 2. Install the Sakai grade book 2 tool
 3. Install Wimba and Elluminate for pilot within Sakai
 - a. These web-based online learning tools are designed to enhance the delivery of synchronous online instruction. Similar to web conferencing, these tools provide a virtual classroom with the ability to perform such things as two-way communication between student and instructor, group whiteboard access, screen sharing and viewing from document cameras.
 4. Install and evaluate Big Blue Button software in Sakai
 - a. BBB is an open source and competing product to Wimba and Illuminate, but not as feature rich, however.
 5. Install server to host Panopto open source course capture system, and begin a pilot project in support of online teaching and learning for faculty to create content more easily on their laptop.
 6. Integrate Turning Point into Sakai to capture polling results and exercises into course material content within Sakai for sharing.
 - b. **Improve faculty development and support in online learning technologies as tools for delivery of academic content and towards expanding online offerings.**
 - i. **Ensure adequate support for the technology required.**
 1. Upgrade Instructional Technology Center
 - a. \$160,000 grant to provide faculty a facility to use the latest multi-media.
 2. Install streaming media server to supports online learning and distance education.
 - a. Provides the ability to broadcast classes and events live over the Internet. Supports streaming and digital video.

3. Participate in online learning planning ensuring that the technical aspect and considerations are accounted for and provided.
- c. **Develop a University-wide enrollment-planning model that examines markets, selectivity, financial aid, and yield and establishes enrollment targets by college.**
 - i. **Implement the common application for undergraduate admissions and understand student choices and perceptions of URI in the competitive marketplace by conducting market research.**
 1. Implement the common application for undergraduate admissions.
- d. **Expand recruitment and retention of diverse students for graduate programs.**
 - i. Upgrade graduate admissions online web application.
 1. Assist the graduate school in implementing the new online application for new graduate applicants it is planning to acquire.

II. Implement a contemporary model of active and collaborative learning and achievement that prepares students for the rapidly changing world of the 21st century.

- a. **Develop and support (on a cycle of modernization) collaborative learning spaces within the library and academic buildings that support active learning and student access to faculty and academic support.**
 - i. Support the technology in the Library Commons area and provide support to faculty in other electronic teaching and learning facilities on campus.
- b. **Encourage lifelong learning**
 - i. Provide the technology and support necessary for effective lifelong learning among alumni and in support of continuing education.
- c. Begin mobile phone application development and deployment.
 - i. Identify design requirements and begin developing applications for student and faculty smart phones that will make available Sakai and e-campus information on mobile devices.
 - ii. By 2012, 80% of URI students will likely rely on a smart phone and expect to receive notifications and interact with key instructional and administrative software. Begin development to have applications ready for September 2011.

III. Work with the Division of Research and Economic Development to promote existing and new interdisciplinary endeavors in faculty and student research, scholarship, and creative work that

address major societal challenges and opportunities, add value to the human experience, and expand a new innovation-based knowledge economy.

- a. **Partner with the Division of Research to better develop the infrastructure and coordination of resources in support of research.**
 - i. **Develop mechanisms to provide high performance computing in support of research and improve high capacity fiber-optic connectivity to enhance research capacity.**
 1. Extranet fiber build
 - a. Leverage three grants totaling \$3 million for external fiber cable providing URI with ultra high speed connectivity to the Internet, URI campuses, and other institutions.
 2. Upgrade the network backbone from 1GB to 10GB. This will enable researchers requiring ultra-high speed connectivity to upgrade from the current 100MB standard to 1GB.
 - a. Leverage external funding.
 - b. Replace core Cisco 6709 switches that will be at end-of-life in January 2012.
 3. Deploy new high speed wireless access points throughout campus.
 - a. Leverage \$1 million in external funding to purchase and install access points along with associated switches.
 4. Upgrade to IPV 6 (Internet Protocol Version 6).
 - ii. Work with the vice president of research to bring high level executives from ITS's major technology partners such as IBM, Dell, Cisco, and Oracle to partner with the URI Research Foundation.
 - iii. Implement Federated ID so that faculty can access other research computer resources and collaborate with researchers outside URI seamlessly.

IV. Ensure that students and faculty are equipped with knowledge and experiences to function as responsible and inquisitive global citizens.

- a. **Encourage Global Classroom experiences consisting of interactive shared online courses in partnership with universities abroad, co-taught by URI and international faculty.**

- i. Assist the university in establishing distance learning and video communications with faculty and students at universities throughout the world.
 - 1. ITS will begin to establish the electronic component of a cooperative relationship with the Dominican Republic and explore such possibilities with universities in other countries such as Liberia.

V. Ensure a campus climate that celebrates difference and creates a rich learning community built upon respect, inclusion, and understanding of issues related to class, race, gender, sexual orientation, ability, religion, and culture.

- a. **Recruit and retain diverse faculty and staff.**
 - i. Work to improve hiring a diverse staff.
- b. Support personally and with ITS foundation funds programs and activities developed to create a more diverse and inclusive campus.
- c. Assist the Multicultural Center in acquiring and supporting PCs for its computer laboratory.

VI. Improve institutional effectiveness, academic quality, accountability, and performance.

- a. **Develop opportunities for faculty online topical forums.**
 - i. Acquire, advertise, and support software to easily create and participate in online forums.
- b. **Utilize all facilities efficiently and effectively.**
 - i. **Develop a plan for on-going maintenance, replacement and modernization of technology.**
 - 1. Work with Provost and Budget Office to develop campus-wide student technology fee.
 - ii. **Equip classrooms and provide faculty with the necessary technology and support needed for instruction and delivery of academic content.**
 - 1. Electronic classroom upgrades
 - a. Expend Provost allocations of \$850,000 and \$350,000 to upgrade 50 classrooms in summer 2010.
 - 2. Configure Room View Expansion software to manage all rooms with installed Audio Visual equipment that are compatible with Room View software.
 - a. This project allows the Classroom Management Assistance staff to proactively maintain classroom technology and remotely assist an instructor.
- c. **Streamline responsiveness of all processes within the university.**
 - i. **Implement automation and workflow enhancements of key financial and human resource processes to improve productivity and performance and become a “paperless” campus.**

1. Automated forms
 - a. Time cards
 - i. Eliminate paper time cards.
 - b. HR personnel action forms
 - i. Replace paper USP-1, USP-2, USP-5, and USP-12 forms.
 - c. Online requisitions
 - i. Enable electronic submission and approval of requisitions
2. Replace the existing Email Server
 - a. Move all faculty and staff email to a new server with significant additional disk storage. This change will increase faculty and staff email quotas and improve email, positioning URI to further integrate communication technologies with feature-rich capabilities for faculty and staff while maintaining the value and use of existing email clients.
 - b. This change will also allow departments at their choosing to maintain their own e-mail environment as part of the central e-mail system.
3. Implement student Gmail to improve service to students and reduce personnel and operating costs.
4. Use virtual technology to centralize new campus servers for colleges and divisions.
 - a. ITS can provision these servers much less expensively, saving colleges 20%, providing just the amount of resources required within 24 hours.
5. Replace existing campus Verizon CENTREX phones and lines with more feature-rich Voice Over IP (VOIP) phones
 - a. Will save \$600,000 per year in CENTREX costs and position URI to integrate voice with email and other computer communications technology
6. Install Compco W/O estimator module
 - a. This module improves the process for costing and charging back projects and will reduce customization needs/costs. It will improve efficiency through business process improvement and transparency of estimating projects.
- d. Install new fiber, conduit, patch panels and switches in machine room to accommodate connectivity requirements.
 - i. Required for machine room expansion to accommodate hosting distributed servers centrally. Cost savings can be achieved by using the ITS machine room to host servers currently being

- administered departmentally. This action will also improve information security.
- e. Enhance information security
 - i. Purchase new firewalls and wireless security along with new software to locate and secure exposed confidential information on campus computers.
 - 1. Obtain and leverage external funding when possible.
 - ii. Protect valuable university information resources from unwanted access and malicious damage, satisfy evolving State and Federal data security and privacy requirements, and identify security exposures before they become exploited.
 - 1. Acquire and install Identify Finder and use to begin locating and securing sensitive data throughout the University.
 - 2. Offer centralized patch management to departments across campus to Provide continuous improvement in vulnerability detection and rapid security patch management better insuring that patches will be applied by busy system administrators.
 - 3. Identify the services that have shadow repositories of personal health information and formalize the process of assessing their impact on the security program.
 - 4. Develop written information security policy to ensure compliance with State and Federal mandated requirements.
 - iii. Identify and remediate devices that serve as copier, printer, scanner, and fax machine that have online presence.
 - 1. Prevent Data Leakage and protect sensitive information
 - iv. Add staff member to assist information security officer.
 - v. Install and configure the latest McAfee EPO Management environment according to best practices.
 - vi. Deploy wireless security.
 - 1. Secure wireless network in a self service manner that does not require users to re-authenticate more than once per semester.
 - vii. Install new central Web server by beginning the process of migrating existing web pages to secure server.
 - 1. The existing web server has serious security flaws and cannot run the latest code and web applications.
 - f. Maintain and update key administrative systems for optimal support and to take advantage of the latest enhancements.
 - i. Upgrade Sungard Higher Education systems for the Advancement
 - 1. Upgrade the Advance system to 9.4.
 - 2. Upgrade the SmartCall telemarketing system to 9.7.

3. These upgrades are required to keep the University in compliance with the maintenance support agreement, version control, and to take advantage of fixes and new capabilities.
- ii. Upgrade E-Campus to version 9.x.
 1. Upgrade the PeopleSoft Financial Human Resource and Campus solution modules to 9.x. These upgrades are required to keep the University in compliance with the maintenance support agreement, version control, and to take advantage of fixes and new capabilities.
- iii. Upgrade Ad Astra to the latest version
 1. This software has the additional benefit of providing a base for developing a University wide calendar including the scheduling of events and associated locations.
- iv. Implement a university-wide campus web calendar capable of having categories of activities pushed to mobile devices.
- v. Replace disk array (26 terabytes) and large scale PeopleSoft server modernizing database architecture and People Tools in the process.
 1. Upgrade all 50 Oracle databases to version 11 g.
- vi. Implement a URI Portal as a gateway for internal users
 1. Begin evaluating different portal solutions to determine the best overall fit for the University.
- g. Communicate more effectively with campus constituencies
 - i. Create electronic ITS newsletter using Sakai.
 - ii. Communicate new systems directly to those parts of the university community affected by the change.
 - iii. Create advisory committees to guide ITS decision making.
- h. Explore thin client computing as a means to reduce personal computer acquisition and support costs.
- i. Explore more effective ways to conserve energy to power the University's technology needs.

Resources

Regarding space, ITS communications with the campus would greatly benefit from a central campus location where most of ITS could be co-located within easy walking distance to most campus constituencies. While electronic communications are valuable, face to face contact and meetings are still essential to ensure that ITS communicates optimally with the campus community.

In order to support new initiatives such as the classroom technology upgrades, ITS requires staff support, hardware and software maintenance, as well as equipment

amortization funding to keep such investments functioning properly. Faculty will not use these facilities to transform their teaching unless they are confident they can receive immediate assistance with any problems and are assured of extremely high reliability. The planned technology fee for all students could be an important source of such funding.

ITS is working to improve the cost performance of its operations such as in telecommunications where hundreds of thousands of dollars could be saved by switching from CENTREX telephone service to Voice Over IP. It is important that, in addition to reducing costs for units across campus, ITS be permitted to reinvest substantial portions of those savings necessary to support the change and into new strategic ITS initiatives that may not be funded through the normal budget allocation process.

ITS is also working to develop centralized services that can be a win-win for ITS as well as colleges and divisions. For example, centralizing new servers for the campus in an ITS virtual environment is much more cost effective than individual units purchasing their own servers. This practice is so cost effective that ITS can offer colleges and divisions a 20% discount from the purchase price of a server along with staff savings to administer and back up the server and still retain a positive revenue stream from the remaining 80% that can support the staffing necessary for the program and possibly leave some funds to be reinvested strategically in ITS. In addition, colleges and divisions ordering such servers could have them made available to them within 24 hours of purchasing them, unlike purchasing the equipment externally.

ITS plans to continue its practice of seeking grants, when appropriate, to expand university technology infrastructure and equipment that cannot always be funded through normal budget allocations.

In addition, ITS plans to continue participating in the academic affairs budget process to acquire strategic resources. An Information Security position is the number one budget priority for ITS in the 2012 budget. Unlike in most other areas, budget investments in ITS provide the university with a high rate of return for the entire campus. In the example of the security position, the cost of a security breach to the university is extremely high in both real dollars and reputation.

In the case of a programmer or faculty support position, if one such position improves the productivity of only 50 people by only 5%, that amounts to a Return on Investment (ROI) of 2.5 additional staff resources for the cost of one. Typically, ITS initiatives impact hundreds, sometimes thousands, of staff and students, not 50. And the productivity gains are frequently much higher than 5% (automating HR forms is a good example). The ROI for ITS staff is more realistically much more substantial than 2.5:1 – an important consideration during tight budgets where personnel resources make up the bulk of the budget. Investing in ITS substantially increases everyone's productivity.

Finally, ITS has a strong track record of reallocating existing personnel resources through redefinition of job duties and classifications, organizational changes and carefully evaluating the best use of vacancies that occur. ITS is committed to building on that experience to use its personnel as effectively as possible.