Using Information Technology to Achieve the Strategic Goals of Rutgers, The State University of New Jersey

Appendix 3: Report of the University Life and Public Service Subcommittee

1. Executive Summary

Only a few short years ago, it may have been enough if a university web page simply identified a University, their logo and their admission offices. The needs of prospective and current students, faculty, and staff have risen far beyond that scope. Information Technology (IT) not only plays a key role in both the decision to attend or work at an institution, but also the quality of the experience at that institution. Indeed, the 21st century vision of IT in the academic setting is shifting from the administrator's perspective to the user's perspective. ***[Technology Reports.Com 2005]*** The best and most imaginative use of IT comes from settings where the systems are completely customer driven. Indeed, the best universities in the future "will be those who have the best information technology infrastructures."***[See 10th Annual Newsweek Kaplan College Guide, August 22, 2004 citing Indiana University Bloomington as the number 1 wireless school in the nation]*** Given how customer focused university life and public service is and how critical these areas are for influencing the opinions of prospective applicants, of current students who ultimately become alumni, of our community partners, the committee was in unanimous agreement that how we use and weave IT into our policies and practices will affect our ability to create communities with these key stakeholders and reap the benefits of their association with the institution (i.e., giving, donations, research opportunities, partnerships that address community needs, etc.).

Therefore, the seminal question is "what about the user experience?" Can students register online, view grades, and pay bills or sit among our lush campuses with a laptop in his/her lap checking emails and surfing the web, 24/7? Can alumni check into academic programs, campus events, career opportunities and alumni happenings? Can a citizen or community group make a reservation on line for use of our facilities, find an expert, or initiate contact for a proposed conference? Can we provide a one-stop shopping experience in higher education? These are the underlying questions that are presented in discussing what the approach should be in addressing the use of technology in the areas of university life and public service. This committee set forth its pivotal belief that IT and the world of the web is a vital tool to help ensure the University's success in its service mission service to students, parents, alumni, employees, and community (hereinafter "stakeholders"). Our discussions and strategic recommendations are designed to support our evolution into the technological world and help position the university as a national leader in the strategic use of information technology to support the advancement of university life and service.

a. Current State of Information Technology in University Life and Public Service

Findings from our committee indicate that there are university and college level structures and processes that act as "roadblocks" and impede access, quality of service

and transparency; and in turn constrain the full use of current or potential technological benefits[1] to be derived. Our analysis of the use of IT services in demand across the University and engaged in at other universities confirms the critical importance of ease of use and accessibility for students, staff, parents, alumni, and community.

It is essential that our stakeholders have access to reliable, accurate and consistent information anytime from anywhere to be able to make informed choices about their academic programs, careers, financial obligations, participation in university programs, and other educational interests. Currently, the University lacks the necessary functionality, interoperability, and proactive planning (i.e., portability, online systems, data warehousing, and support) to raise all campuses to a standard level of service and to position itself as a national leader in the higher education student services market.

Based on surveys, student focus groups, and dialogues with "university experts," it is clear that students expect to register, view grades, and pay bills online; to have online communities where students, faculty and staff can connect with each other for teaching and learning, ad hoc work teams, employee communications, continuing education; and more. They also want more wireless locations and userfriendly, reliable "single click login system" to access the universe of services. Yet, while we might find IT involvement with admissions, financial aid, class registration, and degree audit systems, we will rarely have those systems integrated with other systems that support alumni, conference services, community web pages, or continuing education. In short, we lack the capacity to create a "life long" and transforming relationship with all of our stakeholders – students, staff, faculty, parents, and community.

b. Where do we want to be in 3 to 5 years?

Our goal must be to seamlessly integrate technology into the whole of University life. The findings of this committee strongly suggest that over the next 35 years, the expanded use of IT and web-based solutions within the university would provide a

[1] Examples of such benefits include the following:

- Better connections and communication with high schools to help enable and foster access and the use of technology to enhance the admission process and interactions with high schools.
- Online applications and systems available for use 24x7
- Seamless integration of services planned and designed to unify disparate services, such as tuition payments, fines, parking, debit card, housing, etc. all could be grouped together for ease of student access.
- IT employed to provide coherent views of the university for all visitors or constituencies such as with online tours.
- NetID as a standard for authentication across the university for all applications.
- Online information should be viewed as the official or definitive source for information, status, etc. No secondary checking should be required.

foundation for expanding student services, allow campuses to retain their individuality and branding, and set a precedent for future system-wide collaboration. Delivery of information must be at the point of need. System designers must design flexible and interoperable information systems to respond to the ever-changing requirements of both Federal regulations and advancing trends in technological capability.

c. What do we need to do to achieve the vision?

These two areas – university life and public service – necessitated the creation of two matrices to allow for an efficient description of the recommendations and priorities established by the committee in this interim report. These matrices more fully describe the nature of our inquiry and strategic recommendations. The committee recognized that the rationale for the expansion of technological resources within the university must further the pursuit of knowledge, innovation, excellence, and the highest levels of professionalism. Accordingly, the committee has identified important values and beliefs that we agree are the foundation for future strategic initiatives. General themes included within these values and belief statements include fostering equitable services across units, campuses and college;, encouraging the sharing of information about applications; and fostering the sharing/joint development of IT applications.

- Technology is important for our students to ensure their technological literacy, quicker access to information, and as preparation for real world experience. A fundamental role of higher education is to offer a learning experience and curricula that provide our students with a basic understanding of the society in which they live. Given that our society is both democratic and technological, we must ensure that we impart as much understanding as possible of that technology.
- Our faculty, staff, and students must have access to reliable, accurate and consistent information that is accessible anytime from anywhere and that enables them to make informed choices about their academic programs, their careers, their financial obligations, their alumni interests and their citizenship concerns.
- The use of technology is about human innovation. As a university, we should seek every opportunity to improve our customer services to the campus community through an array of logically related on-campus and web-based services that operate as seamlessly and as flexibly as possible to increase efficiency, convenience and value to students; and at the same time, allow both faculty and staff to provide a high degree of attention to individual students' unique needs.
- The use of IT should be done in a manner to advance the capability of campuses to deliver a high standard of service while allowing them to retain individuality and branding.

2. Planning Process

The Committee approached the work in three phases, recognizing that there were two distinct domains inherent in the overall charge (university life and public service).

The first phase involved developing a strategic matrix to help define the charges, develop topical areas and priorities, and translate them into specific recommendations.

The second phase involved data collection. We identified bibliographical material about the uses of IT in universities, examined and discussed benchmark institutions; conducted student surveys and focus groups; and conducted dialogues with university departmental staff (student services, library, continuing education, etc.) to obtain feedback on what technological uses they thought the university ought to aim toward. The committee started its planning process in November 2004.

The third phase involved synthesis of the data into the framework of a vision, with clear strategies to address common themes enabling the realization of that vision.

3. Description of Current State

a. Core Strengths

We recognize that many important student services are online. These include application, registration, financial aid, academic advising, and other services. For example, there are virtual online tours for students, parents, alumni and other users. Moreover, "myRutgers Portal" provides more accessibility to student services, and there are numerous websites for student organizations, student life offices, campus centers, etc. across the university that offers a lot of information to users. These can be described as core strengths.

b. Core Weaknesses

Notwithstanding these foundational benefits, the weaknesses are striking. We note that the University lacks a coherent vision of student life and service that will translate into a one stop unified system for all student services. We lack the ability to collect and deliver data be it college to college, campus to campus, or office to office. There is limited accessibility of IT services on a 24/7 hour basis for students, alumni and other users of these services.

In some cases, we also lack next generation technology in the face of increasing demands by students, faculty, staff and alumni for efficient administrative systems, web-based access to information and improved IT support.[2] For example, the web portal side needs to be marketed it's not accessible from our home page and it's too hard to reach. Users

[2] For example, while currently 97% of applications are received via the web, it does not meet the need for transfer students, a huge sector of our population. Also, the University lacks effective electronic transfer evaluation from college to college and campus to campus.

lack a seamless experience, for instance, a student should not have to reauthenticate themselves each time their want to look at their financial aid status. The web portal should serve as a tool for the University to collect information on prospective students, prospective employees, parents and alumni, not just for current students.

There is a substantial need to assess the capacity of our IT staff and focus as a whole and their ability to collaboratively deliver mission-critical IT services in these areas rather than acting in isolation. Our service mission and campus life objectives require staff that possesses the experience needed to establish goals and priorities establish policies and procedures and engage in strategic planning initiatives as a collaborative whole. With respect to public service, the committee believes that our current college-based structure sometimes impedes access to RU students and to the external community. The possibility exists to use technology to interact on a broader range within the community, which is imperative if we are to build community with our stakeholders.[3]

c. Barriers to Excellence

The lack of centralized resources and communication has encouraged an entrepreneurship characterized by isolation and lack of transparency. This deficiency and territorialism must be reversed so that the University can reap the synergistic benefits of its entrepreneurship. University leadership at the highest levels must communicate the critical importance of meeting these goals as its top priority.

d. Where our peers are now

The concepts of "one stop shopping" and "seamless ubiquitous connectivity" are appropriate benchmark goals when searching for the applications that will help differentiate Rutgers from other universities The ability to personalize the customer's association with the university from anywhere is a goal that Rutgers should strive to achieve. To that end, it is valuable to review what are peers are doing in their pursuit of the "choice anywhere" standard.

The Rutgers Office of Institutional Research (OIR) commonly benchmarks Rutgers against nineteen peer universities. Of the eighteen who responded to the most recent EDUCAUSE core data survey, only two, the University of Michigan and Michigan State University, have not expressed plans to implement a portal. The University of Indiana, Iowa State University, Ohio State University, Purdue University, Texas A&M University, University of Florida, University of Iowa, University of Maryland, University of Minnesota, University of Texas at Austin, UC San Diego, UNC at Chapel

[3] Some examples of stronger webbased services for external users, including community groups, governmental agencies and business partners include: online maps, a My Portal for parents; webbased university calendar of events; distance learning; extension services, conference services, municipal resources links; and bridges to community resources.

Hill, University of Virginia, University of Wisconsin-Madison all have portals while UC Berkeley and University of Illinois-Urbana are in the process of portal implementation.

The most recent EDUCAUSE survey revealed that only 11.6% (105 of 909) of respondents have no plans to implement a portal. The remaining schools either have a portal or plan to implement one in the near future.

Regarding the deployment of wireless networking, the same EDUCAUSE survey shows that, of all schools who completed the survey, the largest percentage of wireless networks are in the library (56.8% of all schools) and student unions (37.7% of all schools). Other surveyed categories included Classrooms, Public Labs, and Residence Halls. From a percentage of facilities deployed perspective, Rutgers ranked in the bottom half in wireless deployment in Classrooms, Libraries, Public Labs, and Student Unions. We were on a par with most of our peers in the area of resident hall wireless deployment as only four of our 18 responding peer institutions showed a deployment of greater than 25%

Of the Rutgers' OIR benchmark, the University of Indiana and UC San Diego report that they are 76% to 100% wireless while the University of Virginia is 51% to 75% wireless with 76% to 100% in their libraries.

In the Northeastern schools, libraries and student centers have the most wireless penetration with Carnegie Mellon, Boston College, MIT, and U of Maine reporting 76% to 100% wireless penetration.

Also, Casey Greene's Campus Computing Survey 2004 shows that deployment of portals is increasing every year and that universities are committed to having them. Responses for the percentage of schools with portals are less than that in the EDUCAUSE survey. Both surveys, however, show that portals and wireless connectivity are important to most schools averaging 6 on a scale of 1 to 7 in ranking of importance.

4. Description of future state

a. Vision

Information Technology is bounded by only our imaginations. It is a tool that can be used to improve how we think, how we operate, and most importantly, how we create community. Not all of our stakeholders – students, parents, alumni, employees, and community interact with the institution in the same way or for the same reasons. We

must design our IT systems and services from the stakeholder's unique point of view of the University.

The committee believes that we should reengineer our institutional processes to use information technology that allows our stakeholders to conduct university affairs in a seamless, efficient, accurate, and accessible way. We look forward to a day when our integrated system will provide students with access to all appropriate university resources from their first inquiry as prospective students through graduation to participation in alumni events. We envision IT as the means whereby:

- The administration of student business will be conducted online (i.e.; student accounting, financial aid, registration, academic transcript, extracurricular transcripts, career development, electronic portfolios, degree audit capability, parking registration, housing applications, graduation planning, and registration with alumni affairs and the university foundation.)
- The collaboration and learning environment will enable students to participate with peers and faculty utilizing online course management materials and applications, instructional aids, libraries' resources, and electronic resources elsewhere. The role of IT in research should be clear to every student by graduation.
- The Alumni connection to the Rutgers community will be enhanced through identification of affinity groups of interest, and specific ongoing programs, events, and courses of interest

In our vision Henriette Rutgers, class of 2010, can not only access all these services and processes in a straightforward way from any location, but the seamless, integrated system knows many of her attributes (major, residence, career interests, scholarship and financial aid status, internship history, extracurricular interests and accomplishments, and employment history) and can, at her direction, offer additional opportunities she might welcome.

In our vision Henriette's instructors and Rutgers' staff and advisors communicate with her regularly with enhanced access to information about her status and interests.

In our vision Henriette's parents are partners in her education because they are able to access appropriate university resources available to their student. They believe themselves to be valued members of the community because they are able to conduct their business expediently and view information of importance to their interests.

b. Critical Success Factors

Devising and implementing strategies to address the needs and interests of our stakeholders in order to improve and enhance University Life and Public Service will

require a new "business architecture."[4] *Think differently to act differently.* We will need a mapping process that produces the following:

1. Change managers that can interact with student life and community affairs staff to breakdown the cumbersome bureaucracy and develop more intuitive, self-service systems with transactional processes.
2. New investments in hardware, software and staffing.
3. An assessment of culture, organization impediments and incentives for change.
4. Creation of standards for IT so that the work of all departments can be completed efficiently and effectively and the development results can be leveraged in the growth of services.
5. Leadership that inspires and rewards joint planning, cooperation and support for the University's IT strategic planning direction.

c. Strategies for accomplishing the vision

Four strategies are proposed. Each includes a description of the strategy, relationship to other activities at the university, benefits, proposed leadership, assessment measures and resource issues. The strategies are:

- Strategy 1: Improve visibility and service by establishing the university's web presence in several categories available for generalized access (external users) and individualized access (login required).
- Strategy 2: Establish myRutgers portal as the primary interface to individualized online services to the university community.
- Strategy 3: Develop and communicate common standards, processes, and templates for interfacing of applications, databases, and systems (i.e. central, departmental and external).
- Strategy 4: Develop methods and processes that result in cross-functional opportunities to share information about IT applications from an academic, business and user perspective.

Strategy 1 Improve visibility and service by establishing the university's web presence in several categories in general access (external users) and individualized access (login required).

[4] A term used by the University of California in its web based strategy plan that seeks to design a web portal for optimal performance, ease of access, online help and training and functionality in a single transaction.

Background: The University has found difficulty communicating its outward facing website to the general public, while at the same time providing targeted services to current students, faculty, staff, alumni, retirees, and community outreach projects. In many ways these are opposing objectives with different needs. Thus it is recommended that the website will feature both generalized access and individualized access. These categories should provide the ability to obtain generalized information available to the public and to log in for targeted individualized information and services.

Benefits: Supports the dual need of providing outward facing information to the masses while also supporting the delivery of targeted information to the known communities of users.

With the appropriate structures, data/content can be leveraged between the open general site and the individually targeted site.

Users have the ability to choose the information and services they are interested in seeing.

Establishes a consistent approach for delivering services and information to different constituents as constituent roles evolve from prospects to students to graduate students to alums to employees and retirees.

Users will no longer need to bookmark or hunt around on the website for the services they are interested in. Instead their preferences will be retained.

The university will be able to deliver more targeted information and services rather than the current approach of delivering to the masses and hoping the individual finds it.

Target: Users: Students, faculty, staff, alumni, general public

Proposed Leadership: VP for University Relations, Office of the Provost

Metrics:

Funding:

Relationship to University Activities: This recommendation will need to be aligned with the President's Strategic Initiatives and with the outcomes of the three (3) most recent critical institutional reports: Constituency, Undergraduate Education, and the Foundation. The findings in these report touch upon service, communication, and engagement. These are directly impacted by strategy the university establishes for delivering electronic information and services to its various constituencies.

Strategy 2 Establish myRutgers portal as the primary interface to individualized online services to the university community.

Background: Currently targeted services are delivered through multiple channels and departmental websites causing confusion and user difficulty. This would establish myRutgers portal as the vehicle for accessing targeted services and information by individuals. Today the myRutgers portal is a secondary delivery mechanism rather than the primary.

Benefits:Services are targeted at the individual and organized through a consistent interface which the user manages.
Users no longer need to hunt through websites or try to remember where to find a service.
A unified approach to electronic service delivery will enable more leveraging and enhancing of services. It will also foster more collaboration and synergies among services and organizations.

Fosters a more unified and seamless service delivery

Provides a common approach for lifetime electronic interaction with constituents.

Target Users: Students, faculty, alumni (no generalized access)

Proposed Leadership: EVP of Administrative Affairs, Offices of the Provosts

Metrics:

Funding:

Relationship to University Activities:

Strategy 3 Develop and communicate common standards, processes, and templates for interfacing of applications, databases, and systems (i.e. central, departmental and external).

Background: Central systems, departments, vendors and the various groups the university interacts with attempt to leverage data and streamline work effort and processes. Developing common standards will facilitate this goal.

Benefits: Provides common standards and eliminates complexity of developing individual solutions.
Fosters the leveraging of data and systems and streamlines effort between and within organizations.

Improves service to constituents and collaboration among organizations.

Could significantly enhance opportunities for the electronic submission of high school transcripts and financial aid applications

Target Users: Students, faculty, staff, alumni, general public

Proposed Leadership: OIT, Distributed IT Managers

Metrics:

Funding:

Relationship to University Activities:

Strategy 4 Develop methods and processes that result in crossfunctional opportunities to share information about IT applications from an academic, business and user perspective.

Background: Over half the IT activity occurs outside the central IT organization resulting in a tremendous amount of unshared experience and innovative ideas. Departmental IT applications are frequently developed in isolation, and there is no organized method to share this information on IT applications from a business or user perspective. To remedy this one approach might be to develop a resource library or expertise pool describing innovative and best practices in use at the university. Being decentralized, the University has many systems developed in isolation and could benefit from exposure of these systems to outside groups, collaborative efforts, and further development

Benefits: Applications and ideas could be shared allowing offices without funding, high-end IT support, or other means to participate with and take advantage of these resources.

Reduces work load of individual IT Managers and Departments

Minimizes redundancy

Reduces applications developed in isolation.

Multiplies the impact of best practices and innovation university-wide

Leverages the expertise and skills set of IT community.

Target Users: Students, faculty, staff, alumni, general public

Proposed Leadership: OIT Distributed IT Managers

Metrics:

Funding:

Relationship to University Activities:

Attachment

Based on our planning process (See page 3), there were a substantial number of priority areas (and subset issues and needs), as identified below, which were generated through the Committee's analysis of the Public Serviced and University Life Matrixes. These priorities were the foundation of the strategy discussions which subsequently translated into the four strategic recommendations which are contained in the report. Given that the strategy recommendations are primarily concerned with *structure, process, and culture,* once successfully implemented, there will need to be a separate analysis of how the strategies have impacted upon the priorities outline here for both Public Service and University Life. It is our belief that we will find that the University will have made substantial progress in achieving these priorities.

University Life:

Admissions:

- More attention to accessibility & outreach for students w/out computers – Encourage high schools to provide support for electronic application submission for students w/out computers.
- High schools should submit transcripts electronically vs. mail or fax
- Improve electronic transfer evaluation within the university from college to college, campus to campus.
- Online reliance of acceptance for transfer students
- Fold the admissions enrollment pathway into myrutgers

Visits:

- IT should continue to support the capabilities of online information; to provide a coherent vision of the university for all constituents.

Student Business Services:

- Design and implement one place unified system available 24/7 for all business services (tuition, student fees, financial aid, parking fees, dining, tuition remission, refunds, parking, etc.)
- Provide the ability to have refunds directed to an identified account Registration:
- Move to Standard Authentication
- Seamless integration of schedule of classes and the registration database including room numbers, evaluation of courses, course descriptions, etc

Campus Center and Student Life:

- Need for a single interface to integrate each campus student life services: housing, athletics, nursing, dining services, student organizations, community outreach, events, campus center scheduling, etc.
- Self Service
- Video Conferencing

Student Clubs, Organizations and Leadership Programs:

- Standard Authentication
- Seamless integration of online accessibility, forms, and their submission (electronic signature)

Academic Advising:

- Uniform practice and consistency for student advising utilizing a standard student information management system available for all Advisory staff. This system would detail student info, dates of contacts, recommendations, outcomes, exit interviews, to assist Advisory staff and students.

Career Services:

- Needs more coordination and integration of services across university

Residential Life:

- Integration with non-RU use of residence services with IT
- Secure Services: security of services is an issue which needs to be addressed.
- Integration of Housing and Resident life systems
- Update and improvement of HIS; explore better integration with other systems

Experiential Learning, Internships, and Study Abroad:

- Central data repository and connectivity with other groups to coordinate and advertise any type of internship, credits, employment, etc.
- Communication and cross coordination with departments.

Graduation:

- One stop shop for graduation services: cap & gown, invitations, tickets, diploma holder, pay parking tickets, etc.
- Centralized information on all graduation ceremonies, alumni association, etc.

Code of Student Conduct Judicial Affairs:

- Confidential centralized data to identify previous infractions
- Use of technology to identify academic integrity, infractions in other forms (i.e. email), etc. from campus to campus, school to school.

Cyberspace Chats with…:

- Contractual blurb (disclaimer) at end of emails
- Pilot study to explore if a Help Desk IM would be beneficial

FAQ's:

- Central university-wide FAQs pool with links
- A mandate that any departments setting up FAQs on the web must maintain and update the information

Student Records:

- Continued in the area of integrated systems: A more integrated & seamless system of multiple operations for practitioners, faculty, etc. with user groups defined.

ID, Authentication:

- Use of Net ID as the common method for authentication across all applications and access points

General Themes that cut across areas:

- Need for standard authentication method using NetID
- Attention to accessibility & outreach for students w/out computers
- Need for unified and seamless services from the users perspective which will require more collaboration, planning, and integration across applications, organizations, services and campuses.

Public Services:

Note: This committee recognizes that our current college-based structure sometimes impedes university access to all RU students and even the community. The possibility of connectivity on a broader range within the community is advised for coordination of the recommendations listed in the Public Service sector of our charge

Directions to Campus:

- Become a centrally coordinated and maintained enterprise level program within OIT
- Show maps which would facilitate movement between campuses.

FAQ's for Parents:

- Provide access to community
- Portal for parents/myrutgers for parents (w/tabs for FAQs, etc.)

FAQ's for Residents and Community:

- Provide access to community
- Online University calendar of events
- Content management system
- Distance Learning

Extension Services:

- Explore opportunities through NJEdge to connect with community