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INTRODUCTION

Tulane University's Technology Services faced an extraordinary challenge to re-establish connectivity and communications following hurricane Katrina. Dedicated staff coordinated their efforts from disparate locations and under enormous personal stress to meet the needs of faculty, students and staff over the fall of 2005 and through the remainder of the academic year. Now, Technology Services is reaching to establish an ongoing level of service excellence that will build upon the demonstrated success of this collective effort. With the recognition that technology must provide value and enable institutional goals, Technology Services is launching "Avenues to Renewal" a strategic technology planning initiative grounded in a shared understanding within the Tulane community regarding how technology can and should support the University mission. As such, Avenues to Renewal defines a process for continual improvement based on measures of success; a mission and vision to guide the delivery of technology solutions and services; strategic goals for Technology Services and action items to align the strategic use of technology with institutional goals, including those in the Renewal Plan; and a decision-making framework to determine which technology projects should be resourced using a transparent, institution-wide approach.

Strategic planning for Technology Services began in 2005 when Tulane University's Office of Strategic Planning, External Affairs conducted a series of interviews with selected campus stakeholders. By August 2005, data collection and analysis was complete when university operations were catastrophically interrupted. A full summary of findings from February through August 2005 is available in appendix A. Strategic technology planning was resumed in February 2006, under new Technology Services leadership, using a planning process facilitated by JM Associates. A summary list of individuals who participated over the February 2006 – June 2006 planning period is provided in appendix B.

The scope of *Avenues to Renewal* is a three to five year period. Although technology changes rapidly, institutions require more time to establish new processes and are required to balance a complex of perspectives. Furthermore, over the seven years that EDUCAUSE has assessed the top ten IT concerns among participating CIO's, concern over IT funding has ranked at either the first or the second top concern. For Tulane University, we can expect that financial constraints will remain as a critical external driver due to the events of 2005 and the university's relationship to the city of New Orleans, and therefore have the potential to inhibit strategic planning. This strategic plan can be used to help manage these conditions by identifying and prioritizing technology projects that will best support Tulane's goals of teaching, learning, research and public service, and support the goals of the Renewal plan. Tulane has much strength on which it can build and Avenues to Renewal is aimed at reinforcing those strengths.

PLANNING PROCESS OVERVIEW

This document describes the results of strategic planning activities completed in phase one. Initiating a broad-based planning mechanism to insure that technology resources enable and support institutional goals and to allocate resources toward priority needs requires a phased in approach to accommodate the realities of fiscal year budgeting timelines and multi-year commitments. **The Technology Self-assessments** (phase two) and **Technology Services Review** (phase three) are critical to accurately prioritizing projects and function to inform the executive committee of available staff skills and FTEs that can be assigned to a new project and/or that are assigned to a continuing project and to ongoing services. The tactical planning activities defined in these phases must be accomplished in tandem with the need to keep current services and operations fully functioning and will occur in an ongoing and iterative fashion to inform each cycle of resource allocation. Underutilized services that can be retired, service quality levels, and new services required by changing user expectations can also be identified during these phases and enable tactical decision-making regarding *how* strategic goals are achieved.

See appendix C for the full technology self-assessment tool. Phase four occurs when executive officers begin FY 08 budget planning to address university needs.

PHASE 1: Strategic Technology Planning COMPLETED
Purpose: To identify strategic goals (SG) on which future university projects can be assessed.

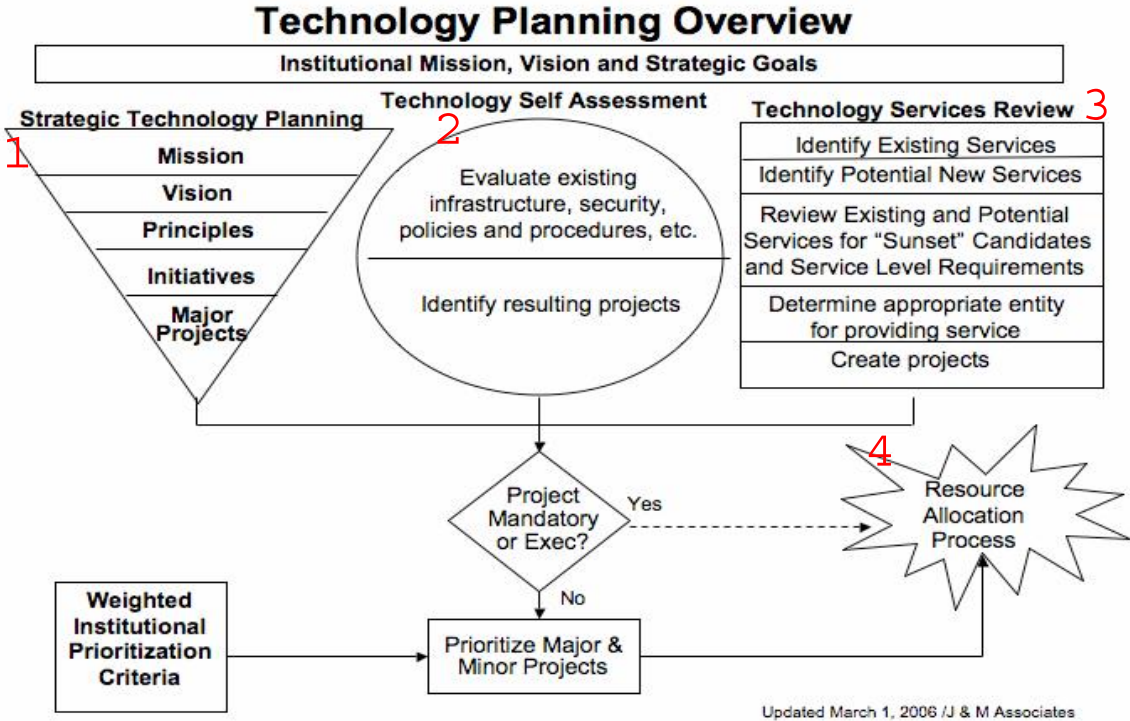
PHASE 2: Technology Self Assessment for Tactical Planning ONGOING
Purpose: To assess baseline functional and management readiness to accomplish projects that align with strategic goals.



PHASE 3: IN PROGRESS: Technology Services Review Tactical Planning ONGOING
Purpose: To define unit-wide service levels and delivery responsibilities required to accomplish projects aligned with strategic goals.



PHASE 4: Resource Allocation Process Launch Oct 2006
Purpose: To implement a university-wide process for prioritizing Technology Services projects that is aligned with Tulane’s mission goals and driven by budget-based resource allocation decisions.



MISSION

Technology Services will help the Tulane community use technology to achieve goals outlined in the institutional Strategic and Renewal Plans. Technology Services will do this by providing excellent service that will be measured via annual benchmarking using comparable data and against aspirational peer organizations; by delivering technology solutions that are secure, dependable, and sustainable yet flexible and responsive; and by effectively communicating to the campus stakeholders the availability of current technologies and the potential of new, emerging technologies. Technology Services will provide solutions to faculty, students, staff, and alumni that strengthen creative approaches to teaching, learning, research, and public service; improve administrative operations; and enhance regional and national visibility.

VISION

The following vision represents the outcome of *Avenues to Renewal* and is essential to guiding mission-critical priorities through 2010. See appendix D for a summary of scenarios regarding how technology can serve Tulane University based on visioning sessions with members of the Tulane community

Tulane University's Technology Services is in the 75th percentile on the following benchmarks when ranked against peer institutions:

- Quality of service delivery
- Transformative uses of information technology to meet communication needs and productivity goals
- Effectiveness of technology solutions in supporting university business processes
- Ubiquitous use of technology to support teaching, learning, and research

PRINCIPLES

The following principles for guiding strategic planning have been distilled from the work to date and were used to guide the development of the *Avenues to Renewal* planning process.

- Technology Services must employ a proactive approach rather than reactive approach to service
- Members of the Tulane community expect to gain value for money spent on information technology solutions
- Information technology solutions must balance business/administrative and academic needs in a complementary manner
- Information technology solutions must be collaboratively defined across a decentralized campus
- Major enterprise implementations must be based on input from a broad base of end-users or stakeholders
- Students have high expectations for information technology's role as a communication and learning resource
- Where feasible and cost effective, centralized technology services should strive to provide customized solutions that support Tulane's distinct needs
- Technology Services staffing is finite and not likely to expand significantly due to external conditions
- Information technology decision-making must be driven by stakeholder needs
- Information technologies should provide transformative solutions rather than merely substitute one technology for another
- Technology Services must use benchmarking to measure progress over time
- Strategic technology planning is an ongoing process for guiding and prioritizing tactical actions

- Executive sponsorship is key to campus change efforts

STRATEGIC GOALS

Strategic Goals (SGs) for Technology Services describe technology directions that enable or support strategic goals of the institution and its units. SGs are not specific projects but rather describe broad end results. The strategic goals below establish the long-term, multi-year focus for the Technology Services organization necessary to realizing our vision. They are based on Tulane's Strategic and Renewal Plans and are informed by the concerns and needs discovered in discussions with a diverse group of people from across the university. The order of the SGs below does not imply a priority.

Each goal includes a brief explanation and action items to achieve the goal.

Strategic Goal 1:

Demonstrate service excellence via continuous improvement and benchmarking

This strategic goal supports our vision of a quality of service level that places Tulane in the 75th percentile in relation to our peer institutions.

Action Items

- 1.1. Select peers against which Technology Services can benchmark its performance
- 1.2. Identify the desired characteristics of service-excellence that will characterize Tulane's Technology Services
- 1.3. Assess current workload capacity of Technology Services to determine a baseline for progress on benchmarks.
- 1.4. Select indicators to show progress toward improvement and achievement
- 1.5. Establish a mechanism to guide ongoing planning activities to support decentralized technology services by defining standards, policies, and shared priorities that result in balanced and coordinated improvements across the university.
- 1.6. Implement a resource allocation process to manage university demand for IT services by prioritizing technology projects, goals, and servicees in collaboration with all university stakeholders.

Strategic Goal 2:

Build virtual and physical communities to support enhanced communication, collaboration, and camaraderie

This strategic goal supports our vision of providing transformative uses of information technology to meet the communication needs of our community.

All segments of the community interviewed indicated a desire to interact and collaborate with others at the University to achieve common goals efficiently, with immediacy when warranted, and to share information. This desire was driven, in part, by the recognition of the critical importance of distributed communication post-Katrina; changes in the way research opportunities are identified and research activities are pursued; an understanding of how the current generation of students communicate, interact and learn; and a need to attract and retain faculty, staff and students by making connections and building relationships.

Communication can be one-to-one, one-to-many or many-to-many and be among community members and/or the institution. Connections are made among people based on such things as common social, academic, business, geographical needs or interests. Campus spaces should be designed to enable collaboration and services should be provided to enable easy access to technology tools and resources for capturing, storing, publishing, and distributing information content. Pursuing this strategic goal will support Tulane's in engaging all stakeholders, including prospective and current students, faculty and potential faculty, staff, alumni, and local, regional and global communities.

Action Items

- 2.1. Identify collaborative technologies already in use by members of the campus community and define implementation objectives for university-wide deployment, support, and access.
- 2.2. Ensure anytime, anywhere interaction that effectively complements face-to-face meeting and interaction.

Strategic Goal 3:

Deliver integrated, user-centered processes

This strategic goal supports our vision to provide transformative uses of information technology to meet productivity goals and effective technology solutions to support business processes.

Those interviewed for this plan indicated that Tulane's current administrative processes are not user friendly or well coordinated. Paper forms are often routed manually around the institution for approval and processing. Departments frequently store duplicate information for tracking or verification purposes. Status and summary reports are generated by hand from a variety of sources and shadow systems.

Tulane is not unique among its peers. Many academic and administrative processes have evolved over time, tweaked here and there to accommodate new policies or directions. Too often, new technology has been bolted on to old practices only to result in awkward complexities that fail to deliver the value technology can offer. Reengineering and streamlining processes will allow Tulane to support changes to processes that will achieve significant effectiveness, efficiency or customer service improvements and free faculty, staff and students to pursue and support mission-related activities.

In addition, while much data exists in a multitude of systems throughout the University, it is not easily accessed to make strategic decisions or guide operational activities. More and better information-based decisions can be made when up-to-date information, drawn from a variety of sources, can be integrated to provide people, including administrators, academic leaders, faculty, managers and staff, with snapshots of the current status of activities and the means to do trending or projections.

Action Items

- 3.1. Identify and prioritize administrative processes that should be reengineered for enhanced integration and user-centered delivery using middleware technologies to build a service oriented architecture (SOA).

Enterprise system integration¹ demands huge resources in time, money, and skill. Emerging technologies are often unstable and non-standardized and legacy system migrations are clumsy and carry a high risks of breaking what already works reasonably well (though too often legacy systems are such because they are no longer supported, endangering them to obsolesces). Ensuring that systems are scalable, modular, and customizable - to enable rapid responses to changes in external regulatory agencies and internal university policies - further increases their complexity. In addition, university-wide processes must inter-operate with departmental and unit-based needs that may require more detailed, granular, or customized processes. Consequently, multiple tactics will be necessary to achieve increased integration and incremental enhancements will be most feasible. Enterprise systems will be optimized over time by establishing a service-oriented architecture that provide:

- Single sign-on to critical systems to provide end users with a single secure ID and password to access a multitude of systems
- Security and privacy controls to insure compliance, confidentiality and identity safeguards
- Directory services to authenticate and authorize Tulane affiliates to enable end users to access appropriate systems based on institutional role and affiliation
- Web-services for data delivery and application interface to integrate technology solutions that simplify access to information

3.2. Develop and modify an information-based architecture to meet decision making needs from an institutional perspective by identifying critical data sets for institutional data warehousing.

By establishing an institutional data warehouse to support reporting and analysis, university administrators can create customized “dashboards” that indicate the status of information being monitored. For example, the facilities manager might see a yellow warning indicator if repair requests are taking longer than two days to complete. She could click on the indicator to “drill down” and get a better understanding of the specifics. A dean could monitor class capacity during registration by viewing bar charts reflecting available and registered seats and make adjustments accordingly.

Strategic Goal 4:

Enhance learning in and out of the classroom

The strategic goal supports or vision of using technology to support teaching and learning.

Many members of the Tulane community clearly indicated the expectation that ways of learning will undergo radical changes in the next few years. The overwhelming availability of information and growing simplicity of communication will allow students to acquire and demonstrate knowledge using a range of cognitive learning styles. This is coupled with students who have a new set of expectations resulting from their exposure to technology-rich K-12 learning environments. In addition, scholars adept in the use of technology for research and comfortable with tools common to their own academic studies will come to expect its availability in their classrooms. In addition, Tulane’s Renewal Plan outlines new academic directions, including new structures, programs, requirements, and learning models that will both motivate and required changes in the way learning occurs.

¹ This term refers to the core business functions of university operations, including, but not limited to: Financial: budgeting, accounts receivable/payable; Student services: housing, advising; Facilities: capital projects, scheduling, renovations, repair and maintenance; Human resources: recruitment, hiring, payroll; Student enrollment: registration, degree audit, financial aid.

Teaching and learning can now be enhanced by access to a vast and comprehensive digital library offering electronic journals, ebooks, multimedia, images, and extensive global sources of information. This content can be incorporated seamlessly into course management software and other teaching tools for immediate access in the technology-enhanced classroom. Library-based Learning Commons allow students to integrate information resources into their learning by offering powerful computing resources, 24/7 computing assistance, and vast amounts of online and printed information in one facility. Students can work together in the Learning Commons because the facility is equipped to allow collaboration among groups of all sizes. These creative uses of technology will allow for additional learning experiences in the classroom and entirely different modes of interaction, collaboration and interaction outside the classroom. Instructional technology solutions in place can be leveraged and new solutions can be introduced to customize learning approaches and varied modes of learning

Action Items

- 4.1. Enable access to state-of-the-art course management system and interactive technologies to extend learning classroom beyond the classroom
- 4.2. Enable students to practice “folio- thinking” - the ability to document their learning effort, to share evidence of their learning with others for feedback, to create (or fulfill) evidence-based standards of performance, and to reflect on learning processes - as a distinctive element of public service learning.
- 4.3. Pilot and assess emerging technologies to insure that technology enriched approaches to teaching and learning can be sustained, scaled, and demonstrate educational value.

Strategic Goal 5:

Enhance the research enterprise

This strategic goal supports the enhanced use of technology for research.

Research is core to Tulane's mission, directly supporting the discovery process, attracting faculty and students, and providing an important source of income. Tulane's investment in support of research and scientific computing will enhance researchers' ability to collaborate on projects with other universities and national laboratories. This will allow Principle Investigators and students to leverage large state-wide and national initiatives in their own projects. High bandwidth network connections will also provide Tulane researchers with access to worldwide shared resources that may otherwise be unavailable, such as computational grids, remote instrumentation (i.e. electron microscopes), large shared data sets and remote visualization.

Research is also enhanced by reliable and easy access to the digital library from on or off campus. Researchers can access published information and data sources that can be tailored to their research interests and manipulated to meet their needs. Collaboration in research is enhanced through online tools that allow sharing of preprints, compiled data, conference papers, and other sources of “grey” literature. Digitized archive collections allow researchers at the university and around the world to study the university's rich holdings of unique and valuable items.

Action Items

- 5.1. Leverage communication technologies to link faculty research agendas, faculty collaborators, and funding sources
- 5.2. Seek economies of scale to achieve a coordinated approach to supporting technology used for research

5.3. Implement a grants management portal to assist researchers in financial reporting and budget analysis.

5.4. Actively participate in regional and national initiatives that support research and scientific computing

Strategic Goal 6:

Support recruiting and retention of faculty, staff and students

While not specifically related to our vision for Technology Services, helping to recruit the best and the brightest faculty, staff, and students through transformative uses of technology is key to sustaining Tulane’s excellence.

During conversations with the community, it became clear that the post-Katrina world and general trends in higher education have created challenges and opportunities for Tulane. Concerns about the future of the institution and changes in academic programs have created challenges for attracting new students and retaining current ones. All of these issues are driving Tulane’s need to attract and keep faculty and staff who are the best fit for a changing institution. Institutional changes are also creating the need for Tulane to change how it recruits and retains students who will be successful in its environment. Recruiting and retention will be enhanced by 24/7 access to Tulane’s information technology and resources from anywhere in the world. If a Tulane scholar is conducting research, giving a presentation, preparing for or taking a class, they can be confident that the resources of the university are within reach from wherever they might be working. Prospective students, faculty and staff can view Tulane’s wealth of research resources, better enabling them to make an informed decision about coming to Tulane.

Action Items

6.1. Implement a student relationship management system to help the institution track and manage a student’s interaction with the University from her first contact through her first day on campus.

6.2. Conduct virtual job fairs around the country and the world to enhance staff hiring, greatly expanding the pool of available candidates.

NEXT STEPS: TACTICAL PLANNING AND RESOURCE ALLOCATION PROCESS OVERVIEW

An institution must provide resources for two overall technology areas: projects and ongoing services. Services encompasses daily, ongoing operational, user support, and managerial activities required to maintain the current technology environment and infrastructure for the end user community. Projects fall into two scopes, Major and Minor, depending on their characteristics. Major projects take significant time to complete, and have large impacts. Minor projects are smaller in scope and should be completed within a 90-day timeframe. Specific characteristics that distinguish major and minor projects are discussed in appendix E. Three types of projects require funding.

A **mandatory project** derives from governance changes and has one or more of the following characteristics:

- Required because of a new or changed federal or state law or requirement
- Required because of a new or changed institutional policy
- Required to create or maintain a stable technology environment and infrastructure

An **executive project** is one required by senior management.

A **continued project** is one that was previously approved and funded during a previous year's planning process

Stakeholder and executive committees play significant roles in all phases of the tactical planning processes for Major and Minor projects by determining institutional priorities for funding allocations or reallocations. By nature, some projects are funded outside of a prioritization process. Once resources are allocated to mandatory, executive, and ongoing projects, remaining resources can be allocated to optional projects that have been prioritized using weighted institutional criteria.

Demand almost always outweighs resources when it comes to institutional technology priorities and it is likely that project and service requests will be advanced from all members of the university community. Tactical planning for resourcing projects requires a mechanism for identifying, submitting, prioritizing, approving, funding, and allocating resources for all technology projects while accounting for the resourcing of ongoing services.

Identifying Projects and Services

The **Strategic Technology Planning Working Group** will have responsibility for identifying, reviewing, and prioritizing project requests that will then be forwarded on an annual basis for funding and resource allocation. The **Strategic Technology Planning Working Group** will have the following responsibilities:

1. Develop a common format for proposed projects and services that identifies the business or academic need met by each project, the goals of the project, the functionality and process implications of the project, the associated workflow, suggested timeline, hardware/software needs, service and staff resources needed, and alternate delivery approaches.
2. Create a weighted scoring system for evaluating projects according to how well they further the mission of the institution as identified in the Renewal Plan and the strategic goals of the university and Technology Services, their scope and complexity, efficiency and productivity, and impact on end user, security, compliance, financial resources, etc.
3. Build a recommended portfolio of projects based on the comparative scores

Approving Requests for Funding and Resource Allocation

An Executive Steering Committee consisting of the responsible Senior Officers will be asked to make final approval and funding decisions on project allocations. The Executive Steering Committee will have three key responsibilities:

1. Insure there are sufficient resources to fund ongoing projects
2. Generate Executive projects for the annual tactical technology planning process
3. Integrate and coordinate annual tactical technology planning with institutional planning and budget processes
4. Prioritize optional projects

The process also provides the opportunity for the President and Cabinet to agree on what will not be done. Projects not making the cut are deferred to the following year when the process starts over again. No new projects will be added once the current year's list of projects is finalized.

PROGRESS TO DATE

To date the following matrix has been completed to demonstrate current resource allocations within Technology Services:

