

Strategic Information Technology Advisory Committee

REPORT AND RECOMMENDATIONS
AUGUST 21, 2009



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Executive Summary

President William Powers convened the Strategic Information Technology Advisory Committee (SITAC) in October 2008 to identify and address the core information technology (IT) issues facing the University. Composed of key University leaders and stakeholders, the Committee was charged with developing and delivering a consensus vision for IT at The University of Texas at Austin. This vision would include not only services provided centrally by Information Technology Services (ITS), but also those provided locally by individual units and colleges.

The Committee focused on IT issues and priorities that the campus community identified as vital to the mission and purpose of the University. The Committee identified nine strategic initiatives with pragmatic recommendations for each. Inherent in each initiative and recommendation is the conviction that the University must pursue excellence at all levels if it is to achieve standing and recognition as “a university of the first class.”¹

Strategic Vision for IT on Campus

Information technology exists to enable the University to excel in its mission of teaching, research, and service.

Guiding Principles for IT on Campus

The following principles should guide IT decision-making on campus:

- Trust
- Transparency
- Collaboration
- Accountability
- Efficiency
- Clarity
- Alignment
- Communication
- Reliability
- Security

Strategic Initiatives and Recommendations for Implementation

This report presents nine strategic initiatives with recommendations for implementation:

- Initiative 1: Define IT Governance
- Initiative 2: Build the New ITS Funding Model
- Initiative 3: Establish Flexible Provisioning of IT Services
- Initiative 4: Address Negative Perceptions of ITS
- Initiative 5: Sustain and Grow the Network Infrastructure

¹ Texas Constitution of 1876

- Initiative 6: Sustain and Grow IT Security Capabilities
- Initiative 7: Foster Sharing of Campus-Wide IT Innovation
- Initiative 8: Create Clear Vision and Direction for Instructional Technologies
- Initiative 9: Enhance Administrative Systems

Initiative 1: Define IT Governance

Recommendation Summary

Create an IT governance structure for the University that provides strategic leadership, establishes campus-wide IT priorities, and is accountable and transparent. The new IT governance structure will provide strategic, operational, and technical decision-making required to ensure IT enables the University to excel in its mission.

Key Benefits to Campus

- Improve transparency of IT decision-making
- Define roles and responsibilities clearly
- Clarify decision rights and escalation paths
- Achieve greater levels of collaboration, communication, and trust
- Encourage knowledge and information sharing

Initiative 2: Build the New ITS Funding Model

Recommendation Summary

Establish a sustainable funding model for Information Technology Services (ITS) that creates trust and confidence in rates charged for centrally provided IT services, prepares for large multi-year capital investments, and appropriately supports the maintenance and growth of IT resources on campus. The funding model will be implemented under the auspices of the new IT governance structure.

Key Benefits to Campus

- Create clear understanding of Common Good services supported by central funding
- Establish understanding, trust, and accountability in the ITS rate-setting process
- Engender long-range ITS capital and operational budgetary planning
- Foster adoption of central IT services through transparency and confidence in ITS rates, competitive pricing, and quality services

Initiative 3: Establish Flexible Provisioning of IT Services

Recommendation Summary

Define and determine which IT services across campus are Common Good services and funded centrally and which services are best offered at the local level or a hybrid of both.

Key Benefits to Campus

- Leverage economies of scale when appropriate
- Establish clarity on which IT services are offered centrally and how they are funded

- Reduce barriers to adoption
- Validate the autonomy of units

Initiative 4: Address Negative Perceptions of ITS

Recommendation Summary

Restore trust in the central IT organization on campus through improved dialogue and professionalism, higher quality customer service, and a demonstrated commitment to partnership and collaboration. Under the direction of the new IT governance structure and supported by a viable funding model, implement strategic IT initiatives that focus on more efficient and effective delivery of IT services to the University.

Key Benefits to Campus

- Build a service-oriented culture in ITS
- Establish understanding, trust, and accountability for ITS-provided services
- Increase efficiency in the ITS organization, freeing up monies to fund unfunded IT needs
- Build trust with campus, leading to increased adoption of cost-effective ITS services that generate savings for the University as a whole

Initiative 5: Sustain and Grow the Network Infrastructure

Recommendation Summary

Maintain and enhance the campus-wide network so faculty, students, and staff have reliable and secure access and necessary bandwidth to achieve their mission. Use the new IT governance structure to set networking standards and policies for the University and dedicate investments to support the central network operations.

Key Benefits to Campus

- Create a consistent baseline for faculty, student, and staff network offerings across campus
- Inspire transparency, trust, and confidence that shared network resources are adequately funded and performing to campus expectations
- Experience more reliable, secure, and compliant networks from responsible network implementations and operations across campus

Initiative 6: Sustain and Grow IT Security Capabilities

Recommendation Summary

Expand Information Security Office (ISO) support for both local and central IT security compliance and improvement. Provide steady, recurring funding as approved through the new IT governance structure and establish clear responsibility and accountability for the appropriate use of University information technology resources and data.

Key Benefits to Campus

- Provide more proactive security research, faster response times, and stronger overall defenses

- Develop more security tools needed to serve the campus
- Improve the quality, consistency, and security of commodity IT services offered to faculty, students, and staff
- Significantly reduce overall risk in areas with high risks and low controls
- Improve security awareness and enhance general system and network security skills across campus

Initiative 7: Foster Sharing of Campus-Wide IT Innovation

Recommendation Summary

Maximize existing campus services to enhance IT innovation across campus and focus on creative sharing and problem solving. Establish a structure and process within the new IT governance structure to support and publicize new technologies and solutions to campus after they are vetted and implemented.

Key Benefits to Campus

- Create an “Innovation Culture” recognized worldwide for excellence
- Help recruit and retain the very best faculty, students, and staff who are engaged by and committed to the process of discovery, innovation, and advancement
- Demonstrate to donors, the Texas legislature, government grant funders, and industry the vision and leadership that make our University one of the most outstanding in the world

Initiative 8: Create Clear Vision and Direction for Instructional Technologies

Recommendation Summary

Provide leadership—locally and globally—in instructional technology by clearly articulating a vision for the role it will play in the future of the University. With guidance from the new IT governance structure, resolve funding and provisioning issues around the standardization of classroom technologies, and reframe instructional technology as supporting the research-intensive mission of the University.

Key Benefits to Campus

- Strengthen the University’s reputation in recruiting and developing the next generation of technology-savvy faculty and students and move the University toward a national and global leadership position
- Shift the focus of innovation in the classroom from local execution to experimentation and scholarship and shift the support mechanism from localized support to a more sustainable model
- Reframe instructional technology as supporting the essential mission of a research-intensive university
- Provide unique and innovative areas of interest to show to supporters and donors

Initiative 9: Enhance Administrative Systems

Recommendation Summary

Enhance the University's administrative systems to meet the needs and expectations of 21st century faculty, students, and staff. Align technology with the University's mission and goals through improved productivity and efficiency, campus-wide application development standards, architecture and processes, and creation of an Administrative Systems Master Plan for future coordination and collaboration within the business areas and the development community.

Key Benefits to Campus

- Understand investment mix between new and maintenance efforts
- Improve operational effectiveness and productivity
- Establish roadmap for next-generation systems
- Improve user experience with consistent look and feel for University administrative applications
- Improve performance and security

Inter-relationships

All initiatives are closely related to one another. Implementation of the recommended IT governance structure and the successful creation and implementation of the new ITS funding model are necessary to accomplish the recommendations presented in this report.

Funding

Existing University monies will fund the recommendations. This will include redirecting limited resources to higher priority needs. In the future, under the auspices of the recommended IT governance structure, the University may decide to seek new funding for IT services that benefit the entire campus.

Conclusion

The Committee challenges campus to change. A concerted and sustained effort on the part of campus leadership, faculty, students, and staff is needed to fully realize the strategic vision of IT enabling the University to excel in its mission. Moreover, implementation of the IT governance structure recommended in this report will provide the ongoing direction, continuity, and accountability required to ensure that IT serves and supports excellence in the University's academic, research, and public service mission.

Strategic Vision and Guiding Principles

In the past, the University has not had a coordinated vision for information technology (IT) and related issues. The role of IT has also never been clearly defined. The Committee recommends the following strategic vision and guiding principles in order to more directly focus IT on serving and supporting the University's mission.

Strategic Vision for IT on Campus

Information technology exists to enable the University to excel in its mission of teaching, research, and service.

Guiding Principles for IT on Campus

The following principles guided the Committee's research, discussion, and decision-making and should continue to guide IT governance at the University:

- Trust
- Transparency
- Collaboration
- Accountability
- Efficiency
- Clarity
- Alignment
- Communication
- Reliability
- Security

Strategic Initiatives and Recommendations for Implementation

This report presents nine strategic initiatives with recommendations for implementation.

Recommendations for each of the nine strategic initiatives are discussed in the sections to follow.

- Initiative 1: Define IT Governance
- Initiative 2: Build the New ITS Funding Model
- Initiative 3: Establish Flexible Provisioning of IT Services
- Initiative 4: Address Negative Perceptions of ITS
- Initiative 5: Sustain and Grow the Network Infrastructure
- Initiative 6: Sustain and Grow IT Security Capabilities
- Initiative 7: Foster Sharing of Campus-Wide IT Innovation
- Initiative 8: Create Clear Vision and Direction for Instructional Technologies
- Initiative 9: Enhance Administrative Systems

Initiative 1: Define IT Governance

Recommendation Summary

Create an IT governance structure for the University that provides strategic leadership, establishes campus-wide IT priorities, and is accountable and transparent. The new IT governance structure will provide strategic, operational, and technical decision-making required to ensure IT enables the University to excel in its mission.

Description of problem: The proliferation of various IT-focused committees, councils, and task forces at the University has not helped in establishing priorities and accountability for IT on campus. A lack of clarity, empowerment, and communication with and among these existing groups exacerbates the already difficult process of managing the IT investment portfolio and making strategic IT decisions that are in the best interest of the University.

Background and Impact

The University needs a new model for governing the IT enterprise on campus. As a highly decentralized organization that values local autonomy, the University has struggled in recent years to find a workable and sustainable process for campus-wide IT decision-making. Both historically and culturally, the constellation of existing IT committees has not been able to produce timely decisions, establish cost-effective priorities, or create an IT vision that aligns with the University's mission and goals. While these committees have done important work at the University, they have lacked a well-defined governance structure and official sanctioning by University leadership to legitimize their efforts.

As information technology becomes ubiquitous in all areas of campus life, it is important that the University address the need for an IT governance structure that provides strategic direction, clarifies priorities, insists on accountability, and exemplifies transparency. The rapidly changing world of technology innovation strongly suggests that a successful IT governance structure must be both forward thinking and nimble in order to effectively respond with strategic leadership to the economic, technological, and political changes of our times.

Establishing an appropriate IT governance structure for the University is vital for implementing the strategies contained in this report, for addressing future IT needs and challenges, and for encouraging sharing of knowledge and information across campus. IT governance is the foundation for realizing and maximizing the role IT must play in helping the University achieve the goal of becoming the best public university in the nation.

Campus Feedback

Currently, there are at least eleven IT-related committees, councils, or task forces at the University. Some of these IT committees have a loose connection to each other, but for the most part, they have no formal relationship to one another. Feedback from campus identified these characteristics as common among the existing IT committees:

- Lack of accountability

- Lack of authority or legitimacy
- Lack of empowerment
- Lack of defined roles and responsibilities
- Lack of clear priorities
- Lack of relationship and communication among committees

Very few of these existing IT-related committees have charters, agendas, or minutes. The committees produce little external communications about recommendations or decisions, largely because they have no defined mechanism or process for communication flow.

Many of the campus-wide interview and focus group participants suggested roles that a functional IT governance structure could take:

- Establish a campus-wide IT vision
- Establish an overall IT budget structure for total IT spend on campus, starting with ITS
- Establish campus-wide IT priorities
- Define technical architecture and standards; for example, minimum network standards
- Establish best practices and tools for IT across campus

Interview and focus group participants also recommended that in order for a new IT governance structure to be successful, the following values must be in place and designed into the structure:

- **Transparency**—Governance structure and process must be clear. How decisions are made and who has input rights and decision-making rights must be readily apparent to campus.
- **Communication**—Communication must occur into, out of, and across the committees.
- **Accountability**—Committees and task forces must be held accountable for delivering on their responsibilities. Clear escalation paths for issue resolution must be defined.
- **Responsibility**—Governance structure must focus on results rather than implementation and project management.
- **Appropriate representation**—Constituency groups across campus must be represented.
- **Active support**—Governance structure requires staff to support the process. Agenda setting, meeting logistics, issue tracking, and communication are all essential aspects of active support.

Recommendations

Based on both external and internal research, the Committee recommends the following actions to establish functional IT governance for the University.

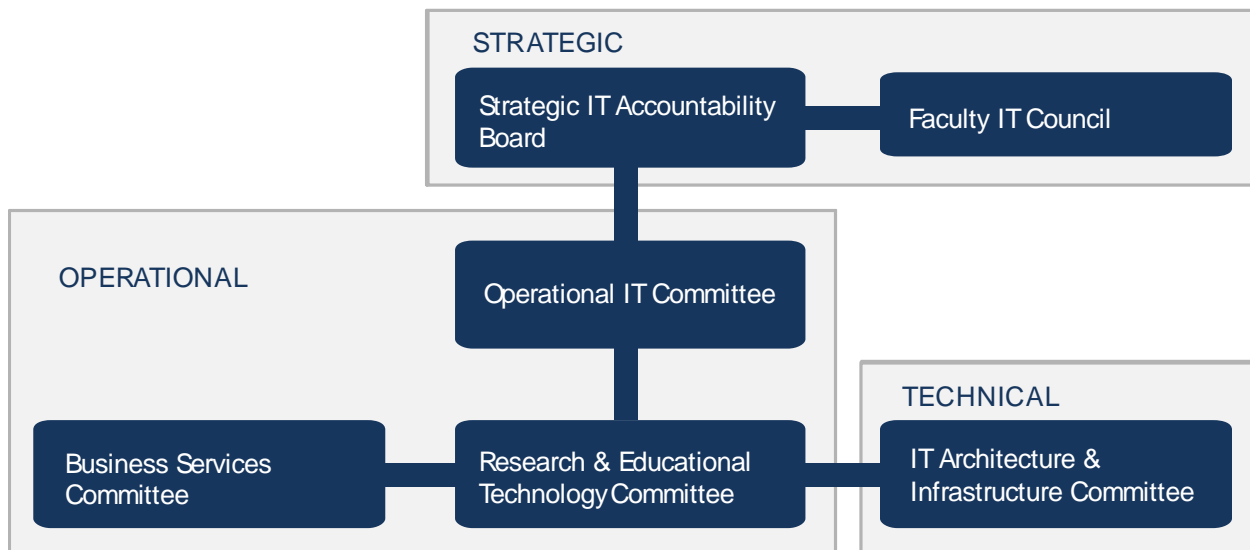
Recommendation 1.1: Adopt Proposed Governance Structure

IT governance is defined by Weill and Ross as “specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT.”² IT governance does not include implementation responsibilities or IT project management.

The Committee agrees with Weill and Ross that IT governance should be organized into three inter-related decision-making areas:

- Strategic Governance
- Operational Governance
- Technical Governance

The following diagram illustrates the recommended committee structure for IT governance at the University.



In order to empower each group above and establish accountability within and between the groups, certain decision-making responsibilities must be defined. At the strategic level, the Strategic IT Accountability Board will be responsible for decisions about IT principles, investment, and prioritization across the University. This Board will gather input from the operational and technical groups in the framework. The operational committees will be responsible for decisions about IT support of research, education, and business applications and will garner input from the strategic and technical groups. The technical committee will be responsible for decisions about IT infrastructure and architecture strategies and will gather input from the strategic and operational groups.

² Weill, Peter and Ross, Jeanne W. (2004) *IT Governance: How Top Performers Manage IT Decision Rights for Superior Results*. Boston, MA: Harvard Business School Press.

The following matrix summarizes the decision-making responsibilities in the proposed governance structure and identifies which groups have input rights.

	IT Principles		IT Investment and Prioritization		Research, Education, and Business Applications		IT Infrastructure and Architecture Strategies	
	Input	Decision	Input	Decision	Input	Decision	Input	Decision
Strategic IT Accountability Board		X		X	X		X	
Operational IT Committee	X		X			X	X	
Business Services Committee	X		X			X	X	
Research & Educational Technology Committee	X		X			X	X	
IT Architecture & Infrastructure Committee	X		X		X			X

Each of the groups within the proposed governance structure is discussed below. Details include the group’s responsibilities, members, and description/purpose. Unless otherwise noted, the committee chairs are determined by the committee membership. Also, the membership of each committee will change at regularly defined intervals specified below. Meeting frequency may vary at the committee’s discretion. It will be critical that these groups operate interdependently with closely aligned goals, objectives, and operating principles. The Vice President for Information Technology/Chief Information Officer (VP-IT/CIO) is responsible for fostering symbiotic relationships among all the committees. Support and facilitation of the new governance structure will come from the office of the VP-IT/CIO. However, each member of each committee is responsible for the success of the IT governance structure.

Recommendation 1.2: Appoint Strategic IT Accountability Board

Strategic IT Accountability Board

Roles and Responsibilities

Meeting Frequency: Quarterly

Responsibilities:

- Approve the enterprise IT vision
- Approve the overall IT budget structure, starting with ITS
- Set key IT priorities
- Endorse IT principles and policies

- Resolve enterprise-wide strategic IT issues
- Establish accountability

Committee Members:

- President (or designated representative)
- Provost (or designated representative)
- Vice President and Chief Financial Officer
- Vice President, University Operations
- Director of major research institute or center
- Dean of one large college/school (serving two-year term)
- Dean of one small college/school (serving two-year term)
- Chair, Faculty IT Council
- VP-IT/CIO, *Ex Officio* member

Committee Chair:

- To be determined by the committee

Description/Purpose of Committee

The Strategic IT Accountability Board will meet quarterly and approve the enterprise IT vision, approve the overall IT budget structure, set key priorities, endorse IT principles and policies, resolve enterprise-wide strategic IT issues, and establish accountability for enacting decisions. The Board will be made up of executive-level positions from across campus and will be the definitive decision-making body for IT on campus. The Board will focus on aligning IT to support the central mission of the University.

Recommendation 1.3: Appoint Operational IT Committees

Operational IT Committee

Roles and Responsibilities

Meeting Frequency: Monthly

Responsibilities:

- Recommend key IT priorities
- Recommend ground rules and criteria for IT investment
- Oversee campus-wide IT initiatives and foster coordination and collaboration
- Endorse the proposed Common Good services and other service rates
- Oversee ITS rate setting
- Endorse the six-year ITS capital and operational budgets
- Establish accountability
- Establish project priorities
- Optimize IT resource allocation

- Establish measurement criteria

Committee Members:

- Chair, Business Services Committee
- Chair, Research & Educational Technology Committee
- Chair, IT Architecture & Infrastructure Committee
- Representative of graduate student body (serving one-year term)
- Representative of undergraduate student body (serving one-year term)
- Representative of large college/school (serving two-year term)
- Representative of small college/school (serving two-year term)
- Representative of Director, major research institute or center
- Four representatives of Vice President portfolios
- Representative of Provost's Office
- Chief Operating Officer (COO), the leader of ITS, *Ex Officio* member

Committee Chair:

- To be determined by the committee

Description/Purpose of Committee

Encompassing both academic and administrative responsibilities campus-wide, the Operational IT Committee will recommend IT priorities, endorse Common Good services, oversee ITS rate setting, endorse the ITS budget requests, and focus on coordination and collaboration of IT resources across campus. Project priorities, initiative management, and forecasting are all important responsibilities of this committee.

The Operational IT Committee will work closely with the Strategic IT Accountability Board and with the subject-area committees. While overall strategies and priorities will be set by the Board, the Operational IT Committee will define and recommend approaches to key IT issues requiring decisions, such as the work of the Rate Oversight Committee recommended in *Initiative 2: Build the New ITS Funding Model*. The Operational IT Committee will also govern the exploration and funding of new services as well as sun-setting services that have reached end of life.

The Operational IT Committee will ask the Business Services, Research and Educational Technology, and IT Architecture & Infrastructure Committees to take the lead in exploring new IT opportunities and in resolving IT issues and recommending courses of action. Special-interest task forces may also be launched by the Operational IT Committee to address and make recommendations on issues that span all three areas. Refer to the *Considerations for the New IT Governance Structure* section below for examples.

Business Services Committee

Roles and Responsibilities

Meeting Frequency: Monthly

Responsibilities:

- Monitor and update the Administrative Systems Master Plan as proposed by *Initiative 9: Enhance Administrative Systems*
- Manage administrative IT initiatives
- Set project priorities
- Recommend funding allocations
- Allocate resources
- Determine measurement criteria
- Establish accountability

Committee Members:

- Current membership of Business Services Council:
 - Assistant Athletic Director, Intercollegiate Athletics
 - Associate Vice President (AVP) and Controller, Office of Accounting
 - AVP for Human Resource Services, Human Resource Services
 - Chief Operating Officer (COO), Information Technology Services
 - Associate Vice Provost, Information Management and Analysis
 - AVP for Resource Development, University Development Office
 - AVP and Budget Director, Budget Office
 - Senior AVP, Office of Campus Planning and Facilities Management
 - AVP, Office of the Registrar
 - Vice Provost and Director of Admissions, Office of Admissions
 - AVP, Executive Vice President and Provost
- New membership:
 - AVP, Campus Safety and Security

Committee Chair:

- To be determined by the committee (serving two-year term)

Description/Purpose of Committee

The Business Services Committee builds on the work done by the current Business Services Council. The focus of this committee is to identify and prioritize technology-based solutions for shared business needs. The committee is made up of the leaders of University business operations. This committee will identify shared needs, set priorities, and ensure coordination on the effective use of information technology resources to meet operational and strategic business requirements of the University. They will also ensure timely and coordinated deployment of business information systems for the benefit of

the University community, including monitoring and updating the Administrative Systems Master Plan proposed in *Initiative 9: Enhance Administrative Systems*. This group has primary governance over all custom-developed and application-packaged administrative software.

Research & Educational Technology Committee

Roles and Responsibilities

Meeting Frequency: Monthly

Responsibilities:

- Investigate and recommend support capabilities and tools for research
- Provide direction for the University’s learning management system
- Identify and recommend collaboration tools
- Identify and recommend teaching tools
- Determine classroom technology
- Establish forums for exchange of research and educational technology ideas

Committee Members:

- Two Associate Deans for Research (serving two-year terms)
- One representative, Vice President, Research
- One representative, major research institute or center
- Two representatives, Division of Instructional Innovation and Assessment
- Two representatives, University Libraries
- Six representatives from the University’s colleges and schools (serving two-year terms)

Committee Chair:

- To be determined by the committee

Description/Purpose of Committee

This governance component will focus on coordination and communication to support research and educational technologies across campus. This group will provide leadership for the University’s research capabilities, learning management system, teaching and collaboration tools, and classroom technology tools.

Recommendation 1.4: Appoint Technical IT Committee

IT Architecture & Infrastructure Committee

Roles and Responsibilities

Meeting Frequency: Monthly

Responsibilities:

- Establish technical architecture standards
- Select tools and set standards
- Establish vendor criteria for interoperability
- Identify best practices
- Make policy recommendations

Committee Members:

- Five IT Directors/Managers from the University’s colleges and schools (serving two-year terms)
- Two IT Directors from Vice President portfolios
- One representative, major research institute or center
- IT Director, University Libraries
- Information Security Officer
- Four ITS Directors

Committee Chair:

- To be determined by the committee

[Description/Purpose of Committee](#)

The IT Architecture & Infrastructure Committee will focus on data and voice networks, data storage, administrative computing infrastructure, applications, and security issues. Fostering communication across these areas will help to improve understanding of the shared infrastructure, as well as facilitate campus-wide input on architecture and infrastructure issues, such as the need for minimum network standards.

IT architecture and infrastructure is not isolated to one area of the University. The University’s shared IT architecture and infrastructure must be governed by representatives from across campus in order to share the responsibility and accountability for the seamless delivery of IT services to campus.

Recommendation 1.5: Redefine the Role of VP-IT/CIO of the University

The Vice President for Information Technology/Chief Information Officer (VP-IT/CIO) role is of vital importance to bring the recommended IT governance structure to life. The VP-IT/CIO reports to the President and should:

- Work closely with the Provost, faculty, and Vice Presidents regarding implementation of campus-wide IT initiatives
- Provide leadership and foster collaboration among various IT leaders across campus
- Communicate and update the strategic IT vision
- Monitor progress of overall enterprise IT initiatives
- Hold the Chief Operating Officer (COO) of Information Technology Services (ITS) accountable for the performance of the central IT organization
- Update the campus-wide strategic plan annually
- Ensure that the governing committee structure operates in an effective and coordinated manner

Recommendation 1.6: Define the Role of COO of ITS

The role of Chief Operating Officer (COO) of ITS is essential to the revitalization of ITS as the central IT provider of Common Good services and responsive IT services provided for a fee. The COO reports to the CIO and should:

- Work closely with the CIO and members of the Operational IT Committee regarding implementation of campus-wide IT initiatives
- Assume responsibility for the performance of ITS
- Provide strategic and operational leadership and direction to the staff employed directly within the ITS portfolio
- Work with the IT governance structure to ensure the technical services and systems of the ITS portfolio serve the diverse needs of faculty, students, and staff
- Set and maintain standards for ITS culture that are service-oriented and customer-centered
- Manage ITS operating budget by forecasting and monitoring operating expenses in comparison with approved budget or revenue and adjusting priorities and operating plans accordingly
- Manage the ITS capital budget

Considerations for the New IT Governance Structure

The following sections list considerations for the new IT governance structure.

Role of the Faculty IT Council

Faculty involvement in the governance process is crucial. More effort is needed to define how the Faculty IT Council can best provide input to the strategic IT governance process.

Sub-Committees and Task Forces

Many of the current advisory committees will be formally rolled into the new governance structure and will report into the new committees.

- Business Services Council: Will become the Business Services Committee
- Information Quest (IQ) Governance Group: Will report into the Operational IT Committee
- Human Resource Management System (HRMS) Executive Committee: Will report into the Business Services Committee
- Blackboard Task Force: Will report into the Research & Educational Technology Committee
- Classroom Technology Committee: Will report into the Research & Educational Technology Committee
- Administrative IT Leaders: Will report into the Business Services Committee
- Administrative IT Council: Will be dissolved
- IT Advisory Committee (ITAC): Will be dissolved

A variety of other IT-related committees and groups, such as the Tech Deans, may continue to exist but will not be recognized as formal decision-making or input bodies within the new IT governance structure.

There will be a periodic need to create task forces to investigate issues and explore different IT solutions. Task forces can be appointed by any of the IT governance committees on an as-needed basis. The task forces will meet for a set timeframe to accomplish specific objectives related to resolving an issue or implementing an IT strategy and will not be considered standing or ongoing governing bodies.

Establish IT Policy Setting and Exception Handling

The proposed IT governance structure will create and approve IT policies for the University. Some policies may affect only ITS, but others will apply to all IT providers across campus, including those in individual units or colleges. For example, a policy may require all high-risk or high-value IT purchases at the University, regardless of funding source, to be channeled through the Information Security Office for security review and the VP-IT/CIO for approval.

Any governance structure needs a process for handling exceptions to meet unique business needs and to gain useful feedback on current structures that can help gauge when existing standards are becoming obsolete. The proposed governance structure will be tasked with developing such exception policies.

Benefits

- Improve transparency of IT decision-making
- Define roles and responsibilities clearly
- Clarify decision rights and escalation paths
- Achieve greater levels of collaboration, communication, and trust
- Implement priority setting process and accountability
- Encourage knowledge and information sharing
- Legitimize the process

High-Level Approach and Schedule



Funding

The work of this initiative will be completed with existing University monies.

Initiative 2: Build the New ITS Funding Model

Recommendation Summary

Establish a sustainable funding model for Information Technology Services (ITS) that creates trust and confidence in rates charged for centrally provided IT services, prepares for large multi-year capital investments, and appropriately supports the maintenance and growth of IT resources on campus. The funding model will be implemented under the auspices of the new IT governance structure.

Description of problem: Campus-wide feedback on IT funding focused on the ITS structural deficit, perceived and documented ITS inefficiencies with resultant higher costs, and the need for anticipating large multi-year capital requirements. The sun-setting and sustainability of services and a lack of trust and transparency in ITS rate setting were also identified as problematic.

Background and Impact

To provide sustainable and appropriate funds for maintenance and growth of quality information technology resources at the University, it is imperative that a new ITS funding model is adopted under the purview of the recommended IT governance structure.

Information technology is increasingly vital for academic and administrative activities on our campus. To compete and thrive in the current technological, economic, and political environment, the University needs to optimally deploy existing technology resources and develop new methods for funding improvements, innovations, and ongoing daily operations. Funding for ITS must sustain the centralized aspects of technology and the critical role that technology plays in supporting the mission and purpose of the University.

Adopting a sustainable funding model for ITS will enable the University to build a future where the IT infrastructure remains highly reliable; where the ever-increasing demand for capacity is anticipated and met; where faculty, students, and staff are supported by high quality, cost-effective IT services; and where strategic initiatives for information technology on campus can rely on stable funding.

Many colleges and units expressed a desire to use ITS services, but the lack of trust and transparency in ITS is a roadblock to using these services even when using these services could reduce costs. With an appropriate and vetted funding model, ITS will be able to articulate the Common Good services provided by central funding and identify the optional ITS services offered at fair and competitive rates.

Campus Feedback

Campus-wide feedback regarding funding frequently mentioned the ITS budget deficit, the annual Per FTE charge (“ITS tax”), and the perceived inefficiencies of the Provost’s Information Technology Advisory Committee (ITAC) process. Common complaints included:

- Lack of transparency in the current ITS funding model
- Perceived inefficiencies in the ITS organization
- Higher-than-market costs due to the perceived ITS inefficiencies

- ITS inability to anticipate capital expenditures
- Lack of understanding about the way ITS rates are set
- Desire to use central IT services but distrust of the cost of services provided by ITS, as well as belief of inconsistent ITS customer service
- Ineffective ITAC allocation process

Central IT Organization Funding Mechanisms

Funding for central IT organizations in higher education is typically provided by a combination of three mechanisms:

- Central funding
- Fee for service
- Student fees (per capita)

Benchmarks indicate that most peer institutions fund their central IT organizations with some combination of central funding and fee for service. Peer IT organization funding models ranged from one extreme of 30% central funding and 70% fee for service, to the other extreme of 80% central funding and 20% fee for service. Most of the peer institutions have a 50/50 split between central funding and fee for service. Currently, The University of Texas at Austin funds central IT with about 60% central funding and 40% fee for service, which is similar to the University of California at Berkeley.

Analysis of ITS Core Budget

The sources of the fiscal year 2008-2009 budget were:

- Central funding: \$14.4 million (37%)
- Per FTE central funding (also known as the “ITS Tax”): \$7.2 million (18%)
- ITAC: \$1.6 million (4%)
- Earned income (fee for service): \$16.4 million (41%)

Central funding as defined in the *Central IT Organization Funding Mechanisms* section above includes central funding, the ITS tax, and ITAC monies listed here. The Committee concluded that the current 60/40 split between central funding and fee for service at the University is appropriate. However, much work is needed to understand which services are supported by central funding and to verify the accuracy of the rates.

Recommendations

Based on both external and internal research, the Committee recommends the following actions to build the new ITS funding model.

Recommendation 2.1: Hold ITS FY 2009-2010 operating budget constant and target 10-20% increase in efficiency from 60% central funding

Most of the University's peer institutions are facing budget cuts due to the current state of the national economy. Those that are not currently facing budget cuts anticipate them within the next year or two. Given the current economic climate, the Committee believes this is an opportune time to look at increasing efficiency in the use of ITS central funding. The savings earned from increased efficiency can then be reprioritized towards unfunded needs, such as disk storage and workstation backup capabilities for faculty, mainframe replacement, or updating the network infrastructure.

Recommendation 2.2: Develop six-year ITS capital and operating budgets

ITS has functioned without a multi-year capital budget and has requested funding above the annual operating budget from the University Budget Council when large capital expenditures arise. A six-year capital budget is needed in order to plan for the future, set goals, and compare performance against those goals. When ITS and the administrative business areas agree on a goal, for example, that the mainframe needs to be replaced, ITS can begin work to set aside the funds and seek the most cost effective alternatives. Without a long-range ITS capital budget, the University could experience an increased risk of failure of vital IT infrastructure.

Other areas of the University function within a multi-year operating budget. ITS should follow suit and develop a six-year operating budget. As with long-range capital budgeting, ITS needs to plan for future operations, set goals, and compare performance against those goals. As part of this approach, ITS Directors would each have a subset of the overall goals and be empowered to monitor and manage their own budgets.

Recommendation 2.3: Perform review of ITS service rates

Interview and focus group participants across campus revealed a lack of trust in and understanding of ITS service rates and rate-setting policy. Because there is already significant distrust around the issue of ITS service rates, a Rate Oversight Committee and workgroup should be assembled to create a zero-based budget and set new rates for ITS services. Members of the Rate Oversight Committee and workgroup should be assembled from within the University and should include both current and potential customers to encourage trust in the zero-based budgeting and rate-setting process and to facilitate buy-in with the ultimate decisions. Refer to *Recommendation 2.4* below for more information about the zero-based budgeting process.

The Rate Oversight Committee will be ongoing and will report into the Operational IT Committee as proposed in *Initiative 1: Define IT Governance*. The Rate Oversight Committee will oversee the workgroup, who will review ITS service rates and provide suggested changes to the Rate Oversight Committee consistent with University rate-setting policy. The Rate Oversight Committee will develop and recommend a one to two-year transition plan. After input from the Operational IT Committee, the

Strategic IT Accountability Board will approve changes. Colleges, schools, and units across campus will be given one to two fiscal years to plan for any budgetary impacts. The University of California at Berkeley currently is implementing a rate review oversight committee as part of their governance structure.

Recommendation 2.4: Conduct zero-based budgeting process for FY 2010-2011 budget cycle

A zero-based budget should be constructed in conjunction with *Initiative 3: Establish Flexible Provisioning of IT Services*. In order to begin to build trust with campus and encourage more clarity and understanding of the services ITS provides, the zero-based budget should start with a stack of core, or Common Good, services that are centrally funded. The zero-based budget will be built by the workgroup named in *Recommendation 2.3*. This workgroup will address which services should be centrally funded. It will work under the auspices of the Rate Oversight Committee who will make recommendations to the Operational IT Committee. Because the zero-based budget will require vetting and support from campus, this effort should be completed in time for the FY 2010-2011 budget cycle.

Recommendation 2.5: Expand efforts to reduce campus-wide software and hardware costs

Campus feedback indicates a pent-up demand for leveraging the University's impact on the marketplace by capitalizing on economies of scale in purchasing software and hardware. The results of the IT Inventory Assessment performed by the Committee begin to suggest software that the University would benefit from purchasing at an enterprise level. ITS should work with University Purchasing to facilitate better pricing and implement Web-based procurement tools for faculty, students, and staff.

Recommendation 2.6: Investigate ITAC process and projects funded

According to many constituents across campus, the Information Technology Advisory Committee (ITAC) has outlived its usefulness to the University. ITAC was intended to fund innovative technology related to teaching and learning through annual allocations to schools, colleges, and other units. However, it now primarily provides recurring funding—funds that allow units to maintain the projects that ITAC originally funded as well as operating costs. Approximately \$500,000 of its \$10 million budget is actually available to fund new and innovative projects. ITAC requires units to prepare a detailed proposal to receive funding and currently meets bi-weekly throughout the year to debate the allocation of the non-recurring funds. One dean interviewed said that he told his IT staff not to bother with the ITAC proposal process given the amount of time they would spend on it versus the meager payout at the end of the process. The Committee believes ITAC budget allocations should be reviewed. The new IT governance structure should determine whether the current recurring allocations should be retained and should investigate the distribution of \$10 million of ITAC funding. The money can then be redistributed where appropriate towards critical IT needs as defined and endorsed by the new IT governance structure. Funding for innovative technology related to teaching and learning is addressed in *Initiative 7: Foster Sharing of Campus-Wide IT Innovation* and *Initiative 8: Create Clear Vision and Direction for Instructional Technologies*.

Benefits

- Create clear understanding of Common Good services supported by central funding, including the annual per FTE charge paid by colleges and administrative units

- Establish understanding, trust, and accountability in ITS rate-setting process
- Engender long-range ITS capital and operational budgetary planning
- Leverage new IT governance structure and process to approve changes in Common Good services and rates for other services
- Foster adoption of central IT services through transparency and confidence in ITS rates, competitive pricing, and quality services

High-Level Approach and Schedule



Funding

The work of this initiative will be completed with existing University monies.

Initiative 3: Establish Flexible Provisioning of IT Services

Recommendation Summary

Define and determine which IT services across campus are Common Good services and funded centrally and which services are best offered at the local level or a hybrid of both.

Description of problem: The lack of clarity on campus about the IT services that are and should be provided centrally prevent the University from realizing economies of scale on commodity services. A distrust of the cost of services provided by ITS—as well as inconsistent quality of ITS customer service—present barriers to adoption and require IT support staff in the units to focus away from unique, value-added service to their faculty, students, and staff.

Background and Impact

Many higher education institutions across the country are struggling to determine which IT services should be provided centrally and which services should be provided locally. While there is no one solution to this challenge, several trends nationwide suggest a model with central administration and local units sharing responsibility and accountability. Under this Common Good model, services are ranked in the order in which they serve the “common good” of the University, and decisions about whether the services should be provided locally or centrally can be made accordingly.

Interview and focus group participants frequently cited confusion about which services are provided centrally and which were expected to be provided locally. Decisions need to be made to provide clarity going forward, but those decisions will be difficult. Some services are clearly best offered locally, such as assisting a researcher with specialized software, and others are clearly best offered at the central level, such as commodity telephone service. But there is strong debate over how to classify a majority of the services that land in the middle of the IT services spectrum. This initiative will identify the attributes of Common Good and locally delivered services, outline a process for identifying a comprehensive Common Good services portfolio, and define a process for determining minimum levels of computing support for faculty, students, and staff.

One of the first tasks for the new IT governance structure proposed by *Initiative 1: Define IT Governance* will be to address the question of how IT should be provisioned on campus. Ultimately, IT services on campus should be offered to achieve the following goals:

- Provide IT capabilities and services so all faculty, students, and staff have a minimum level of computing capability that allows them to do their work
- Provide Common Good services centrally
- Enable individual academic and administrative units to maximize IT resources to achieve discipline-specific goals

Campus Feedback

The feedback from campus was consistent on the topic of service delivery:

- ITS needs to focus on providing good, solid, reliable IT infrastructure services
- ITS should make clear which services and products they provide the University community
- There is a lack of clarity about which IT services will be provided centrally or locally and a need to know which central services ITS provides and the cost of those services
- The University needs to provide Common Good commodity services centrally so highly skilled IT support people in the units can focus on unique, value add services
- Economies of scale can be realized for commodity services
- ITS needs to reduce barriers to adoption, such as perceived or actual high costs
- Differences in IT support between the “have” and “have-not” units is significant and noticeable at the faculty and student levels

Framework

The Role of Governance

The process for proposing new and sun-setting old services that ITS provides is a critical success factor for addressing changing technology needs on campus. Without an effective governance process that constantly evaluates services and includes shared decision-making, efficient and cost-effective provisioning of IT services cannot be accomplished. Refer to *Initiative 1: Define IT Governance* for more discussion regarding the need of a governance structure for IT decision-making.

Considerations

The following considerations must guide decisions about who offers which IT services to campus:

- Appreciation for the autonomy of local units—IT support staff located in the departments and units are closest to the customer. Therefore, locally provided services have greater flexibility to respond to customer needs than those offered centrally. The Committee believes it is critical to the success of the University to value the local delivery of services and the technical expertise within the units, and to allow local units autonomy in decision-making. The IT governance process will make policy decisions regarding the use of Common Good services. Local units that choose not to use a Common Good service will use exceptions policies as specified by the IT governance structure.
- Eliminate the core vs. local argument—The delivery of services should not be a “versus” debate. More frequently, services are not delivered either locally or centrally, but are delivered locally *in combination with* central services. Local IT providers are customers of ITS. ITS needs to partner with local providers to mitigate, address, and solve customers’ issues. IT providers must work together to meet the needs of the customer, not against one another.
- Share responsibility and accountability with layered hybrid services—Because most IT services involve shared delivery, the responsibility and accountability for those services must also be shared. Through the IT governance structure, local providers must have a voice in central service offerings, and the central unit must listen to and respect input from local staff. At the same time, the local providers must listen to and respect input from central staff when local decisions affect the whole. A federated model of IT services that are centrally provisioned and locally managed exists on campus. Groups must work together in the planning, delivering, and

accounting for services. When decisions are made through the IT governance structure, authority to carry out the decisions should be commensurate with local and central responsibilities.

Recommendations

Based on both external and internal research, the Committee recommends the following actions to establish flexible provisioning of IT services at the University.

Recommendation 3.1: Define the attributes of Common Good and local services

As part of the Committee’s research phase, campus stakeholders were asked to define attributes of services provided for the Common Good and of services provided at the local IT level.

Generally, Common Good services were defined as services that are general and global in use. An analogy can be made to the public school model; there are services that are paid for through central funding and provided to all of campus regardless of whether a particular unit chooses to use that service.

The following table lists the attributes of Common Good and locally offered services based on feedback from interview and focus group participants.

Common Good Attributes	Local Attributes
<ul style="list-style-type: none"> • Large user base • Required for business to run • Rely on common infrastructure • People approach the same (practices, methodology) • Natural monopolies • Address institutional compliance and risk • Common user experience • Strong governance structure • Higher expectations • Commodity service • Economies of scale to save the University money • Mature, stable technologies—those that don’t change every year • Benefit everyone and does not impinge on local efforts • Standards and interoperability • Ubiquity, necessity • Centrally funded 	<ul style="list-style-type: none"> • Very unique • Require extreme agility (customize) • High touch (user) • Support innovation, experimentation • Availability tolerance • Locally funded • Fewer users • More specialized user base • Discipline-specific (research—including grant requirements) • Need for flexibility and control • Low integration requirement • More dynamic—maturity at the core needs to enable us to be more dynamic • Local flexibility to adapt what is available at the core • Customized—allowed to fill in the gaps, the details on what is offered centrally <p><i>Note: A service need not have all of these attributes to warrant local provisioning.</i></p>

Recommendation 3.2: Create a comprehensive service portfolio for Common Good services

The Committee discovered that ITS has no defined set of core or Common Good services. While ITS does label some services as “core”, these services do not necessarily meet the attributes of a core or Common Good service. Instead, the ITS business office gave a group of services this label when identifying the gap in funding that was filled with the campus-wide FTE charge. A set of true Common Good services must be defined using the attributes above so campus knows which services are available to them from ITS.

The process for defining Common Good services will happen in conjunction with *Initiative 2: Build the New ITS Funding Model* and the recommended rate review process. Since the Common Good service portfolio is so integrated with the costs for these services, the best approach is to combine the efforts of these initiatives and define, vet, and determine costs for the Common Good services under the auspices of the Rate Oversight Committee. This process will include community input into the stack of Common Good services and will be endorsed and approved by the new IT governance structure.

Recommendation 3.3: Analyze the gaps

In addition to defining current Common Good services, there is a need to identify services that are missing from the list. Interview and focus group participants repeatedly stressed a need for enterprise-level desktop backup, storage, and additional collaboration tools. At the same time, there is a need to identify services that are currently provided centrally but should not be. Once the Common Good services portfolio is identified, the new IT governance structure will analyze the gaps to determine which services are missing from and should be added to the Common Good services portfolio. This will also include identifying minimum IT service capabilities for faculty, students, and staff.

Recommendation 3.4: Define minimum levels of computing capability for faculty, students, and staff

It is important to send a strong message to campus about the importance of access to technology and to adequate information technology support. During the interview process, interviewees related stories about five faculty members sharing one computer or computers that had not been refreshed in eleven years. Faculty frequently brought up the need for better computer refresh cycles. Decisions concerning IT directly impact faculty productivity, faculty retention, and data security. The University must meet faculty technology needs for teaching and research and provide adequate and secure IT.

Students must have access to technology resources that adequately and appropriately support their learning. Staff at the University also need current technology to help perform their jobs and improve productivity. These minimal levels of computing capability will be defined and continually assessed through the new IT governance structure.

Recommendation 3.5: Identify and address barriers to adopting Common Good services

Significant barriers that currently hinder campus-wide adoption of ITS-provided services include a broad mistrust in the organization and a sense that ITS does not listen to customer needs. These issues are further discussed with specific recommendations proposed under *Initiative 4: Address Negative Perceptions of ITS*.

Fundamentally, campus does not trust the rates that ITS sets, nor is it satisfied with the current levels of customer service that ITS provides. The campus must have confidence in rates and ITS must provide reliable, quality services at an affordable price.

Benefits

- Leverage economies of scale when appropriate
- Establish clarity on which IT services are offered and how they are funded
- Reduce barriers to adoption
- Validate the autonomy of units
- Offer services from the most appropriate provider
- Improve trust in ITS
- Support informed decision-making at the local level
- Encourage customer input into service offerings
- Define minimum IT support levels

High-Level Approach and Schedule

FY 2009 – 2010	FY 2010 – 2011	FY 2011 – 2012	FY 2012 – 2013	FY 2013 – 2014
<div data-bbox="204 995 607 1115" style="border: 1px solid black; padding: 5px;"> Design and implement flexible provisioning of IT services within framework of new IT governance structure </div>	<div data-bbox="643 995 1417 1115" style="border: 1px solid black; padding: 5px; text-align: center;">  New provisioning in place and ongoing adjustments by the IT governance structure as necessary </div>			

Funding

Minimum levels of computing capability determined by the IT governance structure will require reprioritization of funding in colleges, schools, and units to address gaps over time.

Initiative 4: Address Negative Perceptions of ITS

Recommendation Summary

Restore trust in the central IT organization on campus through improved dialogue and professionalism, higher quality customer service, and a demonstrated commitment to partnership and collaboration. Under the direction of the new IT governance structure and supported by a viable funding model, implement strategic IT initiatives that focus on more efficient and effective delivery of IT services to the University.

Description of problem: Campus-wide mistrust of ITS stems from poor customer engagement and dialogue, a lack of follow through, inflexibility, and instances of unprofessional behavior on the part of some staff. ITS is also perceived as not partnering with campus or seeking customer input on important IT decisions for campus.

Background and Impact

As an organization, ITS does not have a high level of trust nor respect of the campus. Based on seventeen focus groups of faculty, students, and staff, and forty-one interviews with campus leaders, only a small number of ITS individuals and groups were cited as being responsive, knowledgeable, and customer focused. The organization as a whole frequently frustrates existing and potential customers. Many view ITS as an organization that impedes collaboration with other departments and units, provides confusing and contradictory information, and maintains opacity regarding rates and customer service levels, which is deemed alienating and unacceptable by potential partners. These perceived ITS behavioral patterns reinforce similar negative feedback the organization received in 2002 when ITS was created and in 2006 in a report issued by MOR Associates.

The resultant impact on campus—from real and perceived dysfunctions within ITS—is significant. As technical interdependence continues to grow in the academic, research, and administrative areas of campus life, opportunities to improve efficiencies and offer innovative solutions are often missed. Customers either do not understand how to work with ITS, or they become frustrated by the lack of responsiveness and professionalism. As a result, both academic and administrative areas have created their own IT groups to meet their needs. Many expressed concern with the increased costs of ITS services, perceived to be due in part to the addition of management overhead at the Associate Vice President and Director levels.

Customer service requests are managed differently by various groups within ITS. Self-interested business practices and a documented lack of professionalism in some high-profile cases seems discordant coming from one of the largest central service organizations on campus. There is clearly a need for significant change within ITS.

Some services are perceived as working well, however. Specifically, the high quality of the data network and improved security efforts were often cited as examples of excellence. E-mail services work and the

mainframe operates 99.99% of the time. Unfortunately, these successes tend to be overshadowed by ITS practices and behaviors, lack of transparency, and poor management of customer relationships.

Campus Feedback

Campus-wide interview and focus group participants revealed negative perceptions of ITS, such as:

- ITS does not adequately listen to, or fulfill, customer needs and expectations
- Costs for ITS-offered services are not competitive with market rates
- The organization is too big, inefficient, and costly for the amount of services it provides
- Using ITS services is not easy or straightforward, even if the customer strongly wants to use these services

Data Gathering

In an effort to clarify the gap between negative campus feedback and the positive self-assessment of ITS senior management, interviews were conducted with the three ITS Associate Vice Presidents, eleven ITS Directors, and the VP-IT/CIO. Support documentation was requested from the ITS Business Office, Customer Service, and Operations groups. The majority of the interviews overwhelmingly confirmed the campus feedback, leading to the recommendations below.

Recommendations

Positive progress in both internal and external interactions can dramatically improve the standing of ITS in the campus community. These interactions need clarity and more professional courtesy, with higher respect and professionalism serving as the new standard of behavior. ITS must engage in dialogue with constituents and should recognize the diversity of opinions and needs in an academic environment. ITS must demonstrate a commitment to work towards mutually beneficial solutions.

Recommendation 4.1: Seek to identify ITS organizational efficiencies

An essential first step for ITS is to seek organizational efficiencies. The Committee's research suggests that ITS should seek to reduce layers of management, reduce the number of "one manager-to-few staff" reporting relationships, and look for opportunities to clarify management roles. By comparing current ITS staffing levels to industry and higher education benchmarks, it is possible to determine whether ITS is staffed appropriately in large service areas and make adjustments accordingly. ITS must identify internal staffing efficiencies with the goal of redirecting any central funding savings to unfunded IT needs.

Recommendation 4.2: Focus on clarifying customer expectations and improving customer relationships

ITS should clarify customer expectations and establish timeframes for responding to requests for services, proposals, and contracts. One way in which ITS can accomplish this quickly is to complete and deploy Service Level Agreements (SLAs), which function as contracts between customers and their service providers. Currently, only 10% of all ITS services have SLAs. In order to set clear and trustworthy customer expectations, ITS must prioritize providing SLAs for services that impact the largest number of customers.

To improve customer relationships, ITS must determine a consistent and responsive approach to customer requests and feedback. Currently, ITS uses at least ten different tools to track customers' service requests. By optimizing existing software tools to further automate the routing of customer requests for resolution, including higher level escalation support for technical staff on campus, ITS can develop reports to assess progress on key performance measures.

Providing greater transparency in ITS budgets and rates and making this information available to campus is another means for improving customer relationships. Refer to *Initiative 2: Build the New ITS Funding Model* for more information.

Recommendation 4.3: Develop a multi-channel approach to engage customers across service offerings

ITS has been reluctant to engage with the campus community and has not been consistent in seeking and responding to customer input and criticism across the service offerings. When ITS does engage the campus, there is a perception of little follow-through on customer recommendations and little follow-up on requests. ITS should develop a multi-channel approach to engage customers across the service offerings and should create lists of the various IT contacts on campus to facilitate ongoing communications to various customer constituencies. ITS does not always need to lead but can help launch interest groups and facilitate input. ITS must build a strong network of relationships with IT personnel across campus and seek their feedback.

Recommendation 4.4: Narrow the number and focus of ITS-offered services and focus on dramatic improvements in service quality

Campus feedback indicates that IT service quality suffers because ITS tries to provide more services than it can manage. By narrowing the number and focus of offered services, ITS can concentrate on dramatic improvements in the quality of delivery. Only when the quality of service delivery improves, as measured by customer service feedback, should ITS seek to expand its service offerings. Improving service quality has become particularly important since ITS recently lost the fee for service contract with the College of Liberal Arts. In cases such as this, ITS should conduct full reviews to determine the root causes of losing fee for service contracts and address the problems discovered. However, quality service delivery and customer care should be the standard across all ITS services.

Recommendation 4.5: Use existing administrative systems and processes developed by central administration

ITS has developed a number of custom applications for common administrative processes that are also offered by central administrative groups. ITS should explore using administrative systems and processes developed or provided by central administration rather than custom developing redundant applications. For example, ITS should become one of the pilot units for the new electronic procurement capability in FY 2009-2010. ITS can then work with Purchasing to add, via the online catalog, volume discounts for widely used software which was identified by the results of the IT Inventory Assessment.

Benefits

- Build a service-oriented culture in ITS

- Establish understanding, trust, and accountability for ITS-provided services
- Increase efficiency in the ITS organization, freeing up monies to fund unfunded IT needs
- Demonstrate ability to collaborate, communicate, and follow through on service commitments to campus
- Build trust with campus, leading to the increased adoption of cost-effective ITS services that have the potential to generate savings for the University as a whole

High-Level Approach and Schedule



Funding

The work of this initiative will be completed with existing University monies.

Initiative 5: Sustain and Grow the Network Infrastructure

Recommendation Summary

Maintain and enhance the campus-wide network so faculty, students, and staff have reliable and secure access and necessary bandwidth to achieve their mission. Use the new IT governance structure to set networking standards and policies for the University and dedicate investments to support the central network operations.

Description of problem: The absence of required standards for network operations—and clearly defined responsibilities for departmental and unit Technical Support Contacts (TSCs)—places the reliability and security of the campus network at risk. Without adequate and ongoing funding, upgrades to the existing infrastructure and expansion of wireless capacity are not guaranteed nor assured. Oversight and strategic planning are required if the campus-wide network is to adequately serve the current and future needs of the University.

Background and Impact

The campus network is the nexus for all IT activities. Beyond the need for operations to be reliable, secure, high performance, and transparent, active engagement in both funding and operations from the distributed user base is required to ensure responsive and efficient network operations across a campus the size of the University.

Based on feedback received in campus interviews and focus groups, it is important that existing relationships be defined and strengthened, that additional transparency and accountability be added to financial decision-making, that changes be made to funding, and that investment be made in shared infrastructures under the auspices of the new IT governance structure. Complete centralization is not recommended.

The recommendations in this initiative are a snapshot against a backdrop of dramatic growth for the campus network (wireless use increasing 60% yearly, bandwidth increasing 40% yearly,) historical budgetary constraints, and risk tolerance. The new IT governance structure will need to continue to evaluate network resourcing based on these trends and factors and make adjustments as required by campus constituencies.

If all recommendations are adopted and funded, adequate network resources will be available and responsive to faculty, student, and staff needs. Departments will be actively engaged in efficient network resource allocation. ITS Networking will have funds, personnel, and authority to operate shared services and work with departments to co-manage distributed network resources in a secure and reliable manner.

Campus Feedback

Campus feedback consistently supports the value of the network to faculty, students, and staff throughout the University. Comments focused in the following key areas:

- “Keep doing what you are doing,” was a common refrain
- Everything faculty, students, and staff do at the University now relies on the campus network
- Expectations for wireless access will continue to increase and should be expected, planned for, and funded
- Lack of wireless capabilities may impact the mission and purpose of the University by creating bottlenecks for faculty research and complicating how students interact with the University
- The needs for campus-wide standards and ongoing funding for the network are crucial to the future of the University

Recommendations

The Committee proposes the following six recommendations in order of importance.

Recommendation 5.1: Establish required and recommended standards for campus network operations

Local IT managers will work with ITS Networking within the IT Architecture & Infrastructure Committee to establish the required and recommended standards for campus network operations and codify responsibilities and accountability for departmental TSCs and ITS Networking. Compliance with requirements must be achievable and enforced, and compliance with recommendations should be graded.

Recommendation 5.2: Establish minimal baseline network requirements to be met at department and campus levels

Local IT managers will work with ITS Networking to establish minimal baseline network requirements to be met at department and campus levels, as approved by the IT Architecture & Infrastructure Committee. Mechanisms to transparently measure and report achievement of these minimal standards and performance of the resulting systems should be developed.

Departments need to allocate sufficient funds for wired networks in their buildings, likely a 30% increase over current expenditures. Wireless networks will not be included in the baseline until the new IT governance structure endorses it as a requirement that will then be evaluated and graded.

If the new IT governance structure chooses to follow this recommendation, there will be a need to determine how much of the funding for central costs will be existing, reprioritized IT funding or new monies. If funding for this recommendation will come from new monies, the funding sources need to be identified and considered in the zero-based budget and rate review proposed by *Initiative 2: Build the New ITS Funding Model*.

Recommendation 5.3: Establish dedicated capital and operating budget line items to fund approved central network operations and lifecycle activities and provide for reserves

During the zero-based budget and rate analysis proposed by *Initiative 2: Build the New ITS Funding Model*, the Rate Oversight Committee should consider establishing dedicated capital and operating budget line items in the ITS budget to fund approved central network operations and life cycle activities and provide for reserves. The Rate Oversight Committee should also adjust life cycle funding to reflect campus service level requirements and growth trends and provide the Operational IT Committee an

annual review of these allocations to assess appropriateness based on growth and network activities; for example, Internet bandwidth and equipment replacement cycle. The new IT governance structure should determine funding for newly proposed shared network projects. This will help ensure ITS Networking is staffed appropriately to achieve these goals.

Recommendation 5.4: Extend central funding to include the distribution layer of the campus network infrastructure

The distribution layer of the network is interdependent—a network failure in one department can impact others. The new IT governance structure should consider additional central funding to include the distribution layer of the campus network infrastructure. This extended funding model will include building points of presence (gateways) and fiber connecting to the campus backbone.

Individual departments now fund approximately 70% of the recommended lifecycle of the distribution layer. The full costs, which include monies in the first two years to catch up with intended lifecycle, are shown in the *Funding* section below.

Recommendation 5.5: Invest in basic infrastructure required for resilient network operations

As part of the six-year capital and operating budget process recommended by *Initiative 2: Build the New ITS Funding Model*, investment decisions must be made concerning the basic infrastructure required for resilient network operations. The IT governance structure should consider the following investments, presented below in order of importance:

- Establish Backup ISP—Establish a backup Internet connection, initially dependent on the Office of Telecommunications Services, but eventually independent for resilience as funds allow. This requires a budgeted investment of \$75,000 per year initially for additional lifecycle equipment, which is included in the *Funding* section below. For an independent ISP, an additional \$350,000 per year is required, which is not included in the *Funding* section below.
- Expand Network Operations Center B (NOCB) Phase 2—Expand as planned to become the primary network operations center, including staff relocation to service the primary facility. Completion of Campus Planning Owner Project Requirements is required to establish cost; the preliminary figure provided by Campus Planning was \$5 million, which is included in the *Funding* section below.
- Construct New Network Operations Center A (NOCA)—Construct a new NOCA to act as a secondary facility and abandon the current, inadequate facility, freeing the building space for more appropriate uses. The current NOCA was designed in 1990 before tremendous growth of the Internet. Location and Campus Planning Owner Project Requirements review are required to establish costs. The central campus location is dictated by fiber distance limitations. The preliminary figure expected is in the range of \$5 million, if completed as part of new building construction, which is included in the *Funding* section below.
- Upgrade Main Campus Fiber Plant—Upgrade buildings that are still relying on older fiber plant to support higher speeds and continue fiber diversification for survivability. Upgrading the fiber plants will cost \$150,000 and could logically be accomplished in concert with lifecycle

distribution layer upgrades over the next three years, which is included in the *Funding* section below.

- Retrofit Pickle Research Center (PRC) Network Operations Center (NOC) Retrofit—Upgrade the nearly twenty-year-old NOC at PRC with new power, cooling, cabling, and rack systems. This will cost \$500,000, which is included in the *Funding* section below. A Campus Planning Owner Project Requirements review is required and could find the existing facility will not support future operations, resulting in an order of magnitude increase in costs.
- Upgrade PRC Fiber Plant—Upgrade older fiber plant at PRC to support higher speeds. This will cost \$150,000 and could logically be accomplished in concert with lifecycle distribution layer upgrades over the next four years, which is included in the *Funding* section below.

Recommendation 5.6: Study and present budgets for shared network resources in support of campus activities

The new IT governance structure should continually study, present, and approve budgets for shared network resources in support of current and future campus activities. For example:

- IPv6—Research impact of IPv6, a new network protocol, on existing infrastructures, devise strategy for campus, and anticipate costs. This new network protocol is an inevitable expense for the University.
- Centralized Wireless Funding—Conduct initial study and cost projections to centralize funding for ubiquitous wireless coverage on campus, and if approved, prepare and administer request for proposal (RFP). This has a rough projection of \$8.5 million to extend existing coverage and an increase to \$2.8 million per year for the campus-wide lifecycle.
- Advanced Research Support—Based on reviews with large campus research projects, determine if unmet networking needs exist. Reviews should examine actual utility of national research networks (Internet2, National Lambda Rail) related to their costs.
- Network Management Software—Study commercial network management software. ITS develops much of its own network management software, but it might not be possible to meet newer compliance requirements without commercial software. These packages run from \$150,000–\$350,000 for an institution the size of the University, and multiple packages will be required.
- Facilities Network (FacNet)—Analyze costs to centrally fund FacNet across campus in support of shared operations instead of local department funding for monitoring systems such as HVAC, elevators, building security, and electrical metering. The rough projection for current demands will be \$1.8 million in capital and \$250,000 per year in lifecycle costs.
- Classroom Wireless—Research methods to provide dense auditorium wireless access. The sparse systems in many classrooms will not support high utilization which might be needed for new technologies like classroom response systems. Propose costs and schedules for shared classroom facilities instead of relying on departments, which might or might not prioritize, to fund the project. There are no cost projections at present.
- Outdoor Wireless—Design and cost a system capable of providing wireless data access coverage outdoors across the entire main campus. There are no cost projections at present.

Benefits

- Create a consistent baseline for faculty, student, and staff network offerings across campus
- Provide a forum through IT governance for local IT managers and ITS Networking to establish minimum standards, baseline requirements, and shared authority and accountability
- Inspire transparency, trust, and confidence that shared network resources are adequately funded and performing to campus expectations
- Remove risk of local variations affecting other parts of campus through centrally funded distribution layer of the network infrastructure and relieve one of the larger departmental network expenses
- Experience more reliable, secure, and compliant networks resulting from shared network implementations and operations across campus
- Allow departments to select upgrades, at their own expense, for higher performance
- Ensure software licensing compliance and support and create opportunities for new network architectures that lead to improved features and performance and possible cost savings
- Eliminate the need to make allowances across campus for the lowest common denominator

High-Level Approach and Schedule

FY 2009 – 2010	FY 2010 – 2011	FY 2011 – 2012	FY 2012 – 2013	FY 2013 – 2014
Establish minimum standards				
Establish dedicated budget line items	Extend central funding to included distribution layer of the campus network infrastructure			
Invest in basic infrastructure required for resilient network operations				
Invest in development projects to study and present budgets for shared network resources in support of campus activities				

Funding

The new IT governance structure and the Rate Oversight Committee must determine how much of the funding for this initiative will be existing, reprioritized IT funding or new monies. If funding for this initiative will come from new monies, the funding sources need to be identified.

Among the recommendations of this initiative, *Recommendation 5.4: Extend central funding to include the distribution layer of the campus network infrastructure* requires dedicated funds to achieve the goals. The other recommendations could be pursued independently.

The table below approximates one-time and recurring costs. The significant growth in the “Dedicate Funds” row is based on projections for increased wireless coverage and bandwidth consumption. New

or reallocated monies will be necessary for funding the distribution layer. Funding sources need to be identified for departments to meet minimal baseline.

	FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014	FY 2014-2015
Establish Standards	0.1	0.1	0.1	0.1	0.1	0.1
Minimal Building Baseline	0.3	0.2	0.2	0.2	0.2	0.2
Dedicate Funds	6.4	7.4	8.6	10.1	11.9	13.7
Distribution Layer Funding	2.3	2.4	1.9	1.9	1.9	1.9
Infrastructure Investment	5.2	0.7	5.2	0.2	–	–
TOTAL	14.3	10.8	16.0	12.5	14.1	15.9

Amounts above are shown in millions of dollars.

Initiative 6: Sustain and Grow IT Security Capabilities

Recommendation Summary

Expand Information Security Office (ISO) support for both local and central IT security compliance and improvement. Provide steady, recurring funding as approved through the new IT governance structure and establish clear responsibility and accountability for the appropriate use of University information technology resources and data.

Description of problem: Campus expressed the need for more ISO staff to better support local and central IT security, including the development of more scalable security tools for all of campus. Also, the current lack of clearly defined information security responsibilities and accountability between local and central IT hinder the University's ability to meet mandates in support of research and teaching needs.

Background and Impact

The increasing importance of technology to campus life presents a fundamental challenge for many institutions of higher education—how to balance the free exchange of information endemic to academia with a safe IT environment in which to teach, learn, conduct research, and work. Data breaches, cyberstalking, compromised research, and illegal downloading of copyrighted material are symptomatic of the ubiquitous presence of technology in campus life; they also demonstrate why the University must continue to maintain and grow IT security capabilities.

The impact of improved IT security capabilities on campus is far-reaching. For example, faculty members who have readily available access to centralized backup, storage, and virtual machines not only increase the safety of their own research and academic work by using these secure alternatives for data storage, they reduce the university-wide risk profile as well. Campus IT staff who complete required security training can contribute to improved security awareness on campus by sharing and implementing what they learn and can incorporate security requirements into their software development practices. Guidelines for outsourcing sensitive University data can reduce the risk of compromising legally protected information as well as research data. Establishing criteria for security reviews when making IT purchases will not only reduce risk in high-risk areas, but may also provide opportunities for buying in bulk or purchasing larger numbers of campus licenses.

While information security management responsibilities for the ISO extend campus-wide, all University faculty, students, and staff are expected to adhere to state and Federal laws, and University or UT System policies with regard to the proper use of University information resources and data.

Campus Feedback

Campus-wide interviews and focus groups revealed:

- Strong positive regard for the current efforts of the ISO, including training local IT staff
- Support for the expansion of ISO monitoring and development, which would benefit campus through faster detection and response to security events, improved campus awareness of cyber-

security issues, and development of new and more effective security tools to be deployed campus-wide

Recommendations

Based on campus feedback and in consultation with the ISO, the Committee recommends the following actions to sustain and grow IT security capabilities.

Recommendation 6.1: Provide funding for two new network security analysts for incident handling and security tool development

Additional network security analysts will enable the ISO to increase personnel dedicated to handling IT security incidents across campus. Development of new security tools will receive more focus as ISO responsibilities are shared among a larger group of highly skilled security analysts. The development of security-related projects and tools for the entire campus helps create a secure computing environment for teaching, learning, and conducting research. These efforts can have a large positive impact for the University as a whole and can be funded by redirecting monies from improved ITS efficiencies.

Recommendation 6.2: Provide steady, recurring funding to sustain, grow, and manage the existing intrusion detection defenses that are essential to protecting the campus

Without a predictable and dedicated source of ongoing funding, the ISO is not fully empowered to sustain, grow, and manage existing intrusion detection defenses on campus. Insufficient and unpredictable ISO funding puts the University at a disadvantage in achieving its core mission and purpose.

As part of the ITS zero-based budget and rate analysis, there will be a need to determine how much of the funding for this recommendation will be existing, reprioritized IT funding or new monies. If funding for this recommendation will come from new monies, the funding sources need to be identified through the IT governance structure.

Recommendation 6.3: Prevent protected or sensitive University data from being stored on unauthorized third party services

To ensure the safety and compliance of critical (Category-1) University data, the IT governance structure should consider establishing policies that discourage storage of protected data with third-party services, such as Google Apps or Amazon Cloud Storage, unless a contract protecting these data is negotiated, even if they are no-cost services. The IT governance structure also needs to establish practices for using third-party applications or services for University data that is not sensitive or otherwise protected.

Recommendation 6.4: Significantly reduce information security risk

There are five main strategies for significantly reducing information security risk on campus:

- Use commodity IT services—Use of Common Good services, such as centrally provided e-mail servers, file servers, and calendar servers, can reduce the risk profile of some units who do not have the same level of IT capability and security as other units on campus.
- Offer a University-wide storage and back-up facility—Currently, faculty and staff want, but do not have, a University-wide storage and back-up facility option for their Category-1 data. A

minimum tier could be offered at no added cost, subsidized with central funding, with additional storage tiers being available at additional cost.

- Reduce the number of ad hoc, poorly managed servers by offering low-cost virtualization services to faculty and staff—If faculty and staff have a low-cost option for virtualization services on campus, the need for ad hoc, poorly managed servers would decrease. A basic virtual server offering could be provided at no cost with an additional cost applied to the provisioning of higher resourced systems. The net effect would include a reduction in power consumption and a reduction in the need for costly network drops, hardware lifecycle, etc.
- Require security specific training and certification for all IT support staff and developers on campus—While very successful during its initial rollout, the SysAdmin, Audit, Network, Security (SANS) Institute Training project has recently been cut back due to a lack of funds. A policy decision from the new IT governance structure mandating successful completion and certification of security-specific training for all IT support staff and developers would create a consistent and pervasive cadre of expertise across campus. Adequate funding would be required.
- Ensure all faculty and staff systems, especially those associated with sensitive data, are properly managed and lifecycled—Centrally managed desktop support could be partially subsidized by the University and offered to departments at a low monthly cost per desktop to ensure the safety and security of information technology resources on campus. At New Faculty Orientation and Graduate Student Orientation, give presentations stressing the importance of safeguarding security and their role in protecting their research data.

Recommendation 6.5: Ensure all high-risk or high-value IT related purchases are channeled to the ISO for security review and then to the VP-IT/CIO for approval

A policy decision mandating ISO review and VP-IT/CIO approval on all high-risk or high-value IT purchases on campus would prevent acquisition of IT products and services that place the University at increased risk through noncompliance, unidentified vulnerabilities, and low security standards. This policy and review threshold would need to be approved by the new IT governance structure.

Benefits

- Provide more proactive security research, faster response times, and stronger overall defenses
- Develop more security tools needed to serve the campus
- Clearly define information security practices, controls, roles, and responsibilities in campus units and the ISO
- Improve the quality, consistency, and security of commodity IT services offered to faculty, students, and staff
- Significantly reduce overall risk in areas with high-risks and low-controls
- Improve security awareness and enhance general system and network security skills across campus
- Demonstrate clear accountability for required risk-based security controls
- Deliver more reliable and secure data management, including storage and backup
- Significantly improve security by reviewing high value IT purchases

High-Level Approach and Schedule

FY 2009 – 2010	FY 2010 – 2011	FY 2011 – 2012	FY 2012 – 2013	FY 2013 – 2014
Complete localized ISO needs				
IT governance discussions and decisions about risk reduction		Policies are in place, awareness of services is well established, adoption rates are solid, and services are secure, reliable, and able to expand as needed		
Prepare policy decision documents for vetting and approval				

Funding

As part of the new IT governance structure recommended in *Initiative 1: Define IT Governance* and the zero-based budget and rate analysis recommended in *Initiative 2: Build the New ITS Funding Model*, there will be a need to determine how much of the funding for this initiative will be existing, reprioritized IT funding or new monies. If funding for this initiative will come from new monies, funding sources need to be identified.

There is the potential for substantial cost savings to the University if the risk reduction strategies are adopted. Utilizing more centrally provided commodity services can save the colleges, schools, and units millions of dollars. It is recommended that the new IT governance structure explore these potential savings in depth.

Initiative 7: Foster Sharing of Campus-Wide IT Innovation

Recommendation Summary

Maximize existing campus services to enhance IT innovation across campus and focus on creative sharing and problem solving. Establish a structure and process within the new IT governance structure to support and publicize new technologies and solutions to campus after they are vetted and implemented.

Description of problem: IT innovation occurs in many places across campus and carries the potential to improve how we work at the University and beyond. However, the absence of a framework and process for collaboration costs the University in terms of effort, resources, and funding. Without coordinated campus-wide sharing of IT innovation, the full benefits of evaluating and recommending deployment of new technologies remain unrealized.

Background and Impact

The University has an opportunity to set the standard for institutions of higher education with wise stewardship of IT innovation and to distinguish itself by encouraging innovation in an advanced learning and research environment.

Over the past decades, the rapid adoption of technology in all spheres of life has made IT on campus ubiquitous. Students entering the University and newly recruited faculty members bring expectations about how they will use technology to communicate, interact socially, teach, conduct research, and collaborate. Campus administrative units are continually impacted by marketplace advances and are challenged by new regulations and requirements that demand rethinking and reframing of how work is accomplished in the light of what is newly possible. The University is constantly reacting to technological change; innovation is required for proactive, sustainable solutions.

There is a sense of energy and excitement about IT innovation and what it means for the campus community and beyond, but this energy and excitement remains largely diffused. Defining a way to make the most of IT innovation and best practices opens the University to new and creative ways to instruct, learn, create new knowledge, improve efficiencies and cut costs, attract donors, and engage in local, national, and international partnerships and collaborations.

Systemic sharing of IT innovation enables the University to excel in its mission. A culture of innovation creates a learning environment that is exciting and invigorating. Problems and frustrations can become opportunities to create a new solution. IT innovation fosters a place of global connections since technology allows students and faculty to work and learn anywhere. The technology itself is transparent, and the focus is on sharing new ideas, mentoring, and solving issues. When routine work is automated, people are free to engage in more meaningful tasks that require judgment and imagination. Each person feels involved, in the know, and respected, and has tools to do his or her job.

Campus Feedback

Campus-wide interviews and focus groups revealed:

- IT innovation happens across the University and is not widely shared; we need to talk to each other and learn from each other to enrich life on campus
- Establishing forums on campus to share IT innovations can help achieve economies of scale and reduce rework and duplication of effort
- A pervasive belief that the University must be a leader in IT innovation to accomplish the goal of being the best public research university in the country
- We set ourselves to explore new systems and solutions, but often, there is no recurring funding to sustain these efforts past a pilot

Recommendations

To realize the full potential of current and future IT innovation at the University, it is essential to develop better means for communicating and sharing what is happening—in schools, in colleges, in departments, with individual faculty research and with undergraduate and graduate student projects—as well as in the state, national, and global arenas. This initiative does not seek to restrict or direct specific IT innovations but instead supports the establishment of campus-wide processes and communication vehicles that encourage and extend an “Innovation Culture” to all faculty, students, and staff.

Recommendation 7.1: Establish clear definitions of roles, responsibilities, and resources for IT innovation at the University

The University needs a framework for constituent groups to effectively participate in the IT innovation process on campus. This process and framework will clearly identify resources—available centrally and at UT System—to support IT innovation and will publicize the availability of new technologies and solutions that have been vetted and implemented. Units and individuals will be encouraged to share and benefit from successful innovation and reduce redundant effort. Local technology innovation should be leveraged for possible enterprise adoption, and all units, including administration, research, student life, and auxiliary enterprises, should be consulted to find and support their innovative technology solutions.

Recommendation 7.2: Facilitate communication for sharing needs and innovations

The University needs a comprehensive yet flexible communication plan for sharing IT innovation across campus. This plan will provide a forum not only for innovators to share their innovations, but also for faculty, students, and staff to communicate their needs, to which the innovators can respond. Existing IT innovation communication structures and channels must be identified, and any gaps or omissions must be addressed.

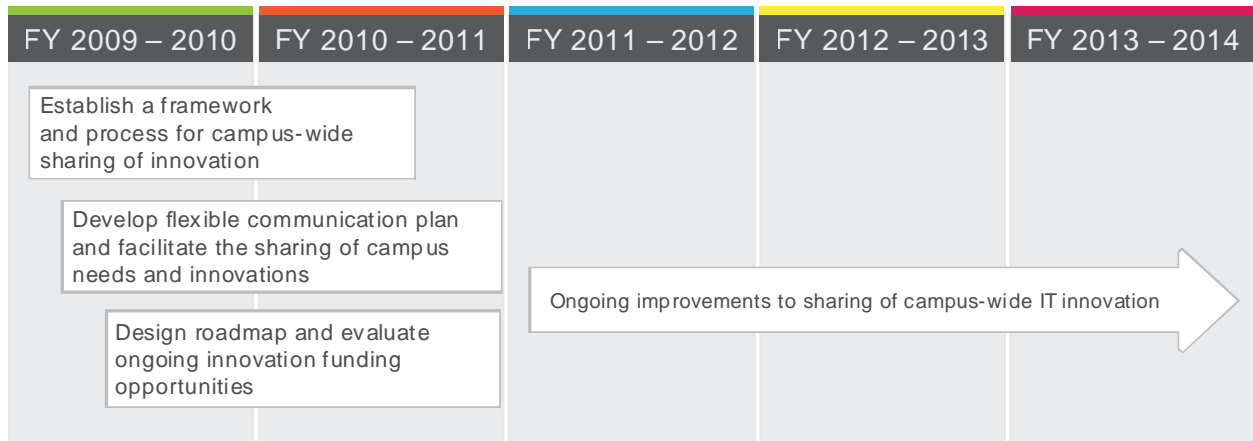
Recommendation 7.3: Design a roadmap for creating a culture that identifies, supports, and sustains innovation at the University

The University must commit to ongoing innovation. In the past, monies designated for innovation became allocated over time almost exclusively for operational expenses to support past innovations. Although the Committee recommends that ITAC be dissolved, the new IT governance structure should ensure that funding is set aside to invest in future innovation. Refer to *Initiative 1: Define IT Governance* and *Initiative 2: Build New ITS Funding Model* for more information.

Benefits

- Create an “Innovation Culture” recognized worldwide for excellence
- Help recruit and retain the very best faculty, students, and staff who are engaged by and committed to the process of discovery, innovation, and advancement
- Maximize time, talent, and resources throughout the University
- Provide a criterion for investing in innovation, tolerating risk, and achieving a critical mass of innovators on campus
- Demonstrate to donors, the Texas legislature, government grant funders, and industry the vision and leadership that make our University one of the most outstanding in the world

High-Level Approach and Schedule



Funding

ITAC funding may be directed towards this initiative, as endorsed by the new IT governance structure.

Initiative 8: Create Clear Vision and Direction for Instructional Technologies

Recommendation Summary

Provide leadership—locally and globally—in instructional technology by clearly articulating a vision for the role it will play in the future of the University. With guidance from the new IT governance structure, resolve funding and provisioning issues around the standardization of classroom technologies, and reframe instructional technology as supporting the research-intensive mission of the University.

Description of problem: The lack of standardization of classroom and instructional technologies across campus has a negative impact on teaching and learning for both faculty and students. Without collaboration and coordination of efforts—and a way to share what is available to faculty in terms of innovative instructional technologies—the University risks missing the opportunity to recruit, develop, and retain the best faculty and students. Also, the lack of a clearly articulated view of the importance of innovative instructional technologies, including teaching with technology, within the faculty roles and rewards system should be addressed.

Background and Impact

In higher education today, teaching, learning, and research are being changed in profound ways through innovative information technologies. Virtual classrooms and asynchronous learning are redefining how and when students learn. Instructional technologies—including sophisticated Web sites and multimedia tools—are providing faculty with new ways to teach, and educational researchers are increasingly identifying positive applications for enhanced lifelong learning using a wide variety of technologies.

The University currently does not have a clearly articulated vision for the role instructional technology will play in the future of our institution. With no campus-wide roadmap for classroom technologies, no articulated commitment to preparing students for the digital future, and no formal recognition within the promotion and tenure system for faculty who teach innovatively with technology, the University is at a critical point in its history. It risks becoming out of step with its peers and lagging behind in recruiting and retaining the best faculty and students.

Each successive class of entering students brings increased expectations for and facility with technology to all areas of their college experience. Similarly, new faculty members are more and more likely to make career decisions based on models of technical innovation and collaboration that impact instruction, communication, and scholarly publication. While campus leaders can determine that instructional technology is adjunct to the primary mission and values of the University, an opportunity exists to live up to the bold vision expressed in *The Commission of 125* report and targeted in the Campaign for Texas. If we are to find “visionary leaders for academic departments and research centers” and give “them the resources and authority to achieve their goals,” it is difficult to plan for such a future without fully embracing the very best in instructional technology—including the technology itself, faculty use of technology in the classroom, and the ways students benefit from these new methods of teaching and learning.

Campus Feedback

Campus-wide interviews and focus groups revealed:

- Numerous opportunities across campus to incorporate a variety of information technologies to enrich the classroom experience for a variety of learning styles
- Many tenure-track faculty feel that the pressure to research and publish, as traditionally defined in research universities, keeps them from dedicating time and effort to improving their use of instructional technology, and in disseminating their results when they do
- Faculty and student needs and desires for classroom technologies are widely divergent
- The proliferation of differing instructional technologies creates confusion and inefficiencies that detract from the mission of teaching and learning
- A desire for the University to stay current or ahead of the curve with instructional technologies in order to remain competitive
- Student use of new technology is typically ahead of faculty
- Students feel an ownership and expertise in social technologies in particular and dislike faculty using social technologies (such as Facebook) to communicate about class work

Recommendations

The scope of this initiative is broad in its implications for teaching, learning, and research at the University. Certainly there are specific issues around the standardization of classroom technologies that must be addressed from a funding and provisioning perspective. At the same time, larger concerns of culture change cannot be avoided and will need to be addressed at both the grass roots and administrative levels to move the University forward.

A 2004 report from the Technology Enhanced Learning Committee to the Provost noted:

Although the computer revolution moves at its own rapid pace, it is the duty of the educational community to stay in lockstep with these advances, evaluate the changes, and incorporate the best of these into the learning environment.

The following key recommendations for instructional technology at the University build upon this conclusion with the urgency of passing time. The opportunity to provide leadership is not open-ended. Implementation of these goals now can contribute greatly to achieving the goal of becoming the best public research university in the country.

Recommendation 8.1: Campus-wide standardization of instructional technology should ensure reliability, usability, and support

Through the new IT governance structure, the Research & Educational Technology Committee will define roles and responsibilities for selecting and maintaining standard technology in every classroom. The committee will also work collaboratively to build on existing successes in the development of multiple methods and approaches, synchronous and asynchronous, for educating and training faculty about instructional technologies available to them.

Recommendation 8.2: Faculty and students must have a strong voice in the role technology plays in both teaching and learning

The new IT governance structure encourages faculty and student input in the role technology plays in their academic experience by including faculty and student representatives on the Operational IT Committee. The Research & Educational Technology Committee is responsible for gathering information and making recommendations on projects, policy, and funding related to instructional technologies. Additionally, creation of a schedule of ongoing events to foster dialogue and sharing about the role technology plays in teaching and learning can include faculty, students, and technical support personnel as well.

Recommendation 8.3: Campus leadership should provide clear vision and direction for instructional technology at the University

Build on the Division of Instructional Innovation and Assessment's research on emerging technologies by identifying how the most promising instructional technology projects are to be selected, supported, and—when applicable—made available to the larger campus. Conduct a benchmarking study on the potential impact of a university policy position on the merits of innovation in instructional technology for the recruitment, retention, and professional development of faculty. Another possible approach would be to include a new section in the Provost's Faculty Annual Report addressing innovative teaching, including instructional technology, and a mandatory section in the teaching portfolio section of the promotion dossier.

Recommendation 8.4: Faculty accomplishments in instructional technology should be acknowledged by the University's recognition and rewards system

Because faculty accomplishments in instructional technologies are not currently recognized in the University's recognition and rewards system, establish a process and support structure to facilitate transforming innovative faculty efforts in instructional technology into scholarly research and publication. Investigate whether to build on the model created by the College of Liberal Arts Information Technology Services (LA-ITS) to facilitate campus-wide faculty development in this direction. As an alternative, explore the feasibility of establishing a Faculty Academy for Instructional Technology where faculty can learn from one another about instructional technologies and share best practices. The academy may request a university policy position on the importance of rewarding innovative use of instructional technology to enhance student learning in the promotion and tenure process.

Benefits

- Shift the focus of innovation in the classroom from local execution to experimentation and scholarship and shift the support mechanism from localized support to a more sustainable model
- Strengthen the University's reputation in recruiting and developing the next generation of technology-savvy faculty and students and move the University toward a national and global leadership position
- Reinforce the new IT governance structure with broad input and well-thought-out proposals and decision-making

- Create a framework to assess third-party products regarding their potential impact on pedagogy and facilitate experimental design and assessment of outcomes
- Provide unique and innovative areas of interest to show prospective donors
- Reframe instructional technology as supporting the essential mission of a research-intensive university

High-Level Approach and Schedule

FY 2009 – 2010	FY 2010 – 2011	FY 2011 – 2012	FY 2012 – 2013	FY 2013 – 2014
<p>Explore the feasibility of establishing a Faculty Academy for Instructional Technology and building on the model created by LA-ITS</p>				
	<p>Create a schedule of ongoing events to foster dialog and sharing for all of campus on the role technology plays in teaching and learning</p>			
	<p>Establish a clear process for transforming instructional technology efforts into scholarly research and publication</p>			
		<p>Consider a university policy on rewarding innovative use of instructional technology in the promotion and tenure process</p>		

Funding

The work of this initiative will be completed with existing University monies.

Initiative 9: Enhance Administrative Systems

Recommendation Summary

Enhance the University’s administrative systems to meet the needs and expectations of 21st century faculty, students, and staff. Align technology with the University’s mission and goals through improved productivity and efficiency, campus-wide application development standards, architecture and processes, and creation of an Administrative Systems Master Plan for future coordination and collaboration within the business areas and the development community.

Description of problem: In some important business areas of the University, work is still performed manually or with outdated and inadequate tools. All across campus there is an identified need for improvements to administrative systems that range from upgrading tools to support fundraising to developing an improved inventory system. Campus needs include developing a consistent and secure Web-based architecture for the end user interface to administrative systems. An update to long-term administrative systems (five to ten-year) planning is needed. There is no comprehensive approach for integration of legacy systems with the growing number of application package software solutions.

Background and Impact

Recent improvements to the University’s administrative systems received high praise in interviews with campus stakeholders, yet the need for evolving and sustaining these systems is recognized as essential to becoming the premier public university in the nation.

Nearly every activity on campus—from course registration, paying bills, payroll, promotion and tenure process, grants management—can be enhanced by administrative systems. Students and faculty alike arrive each semester with expectations about how they will conduct their personal, academic, and professional business with the University. The challenge is for the University’s administrative systems to meet or exceed performance goals while reducing costs and scaling for the future. Legacy applications with proven functionality may not measure up to new user standards set in a competitive marketplace. Without systems designed to support both the strategic objectives and policies of the University and to meet the needs of 21st century faculty, students, and staff, our campus will lag behind peer institutions in the ways business transactions are supported.

History

The Core Application Strategy for the Enterprise (CASE) project in 2006 compared the current Enterprise Resource Planning (ERP) system at the University with major off-the-shelf ERP software systems. The University’s ERP includes student, finance, budget, payroll, purchasing, human resource services, development, and facilities systems. Recommendations included continuing to invest in custom-developed systems for the next five to ten years, an investment of approximately \$25 million per year, and the creation of a governance structure that resulted in the Business Services Council.

Campus Feedback

Campus-wide feedback on enhancements to administrative systems focused in the following key areas:

- Need to Web-enable all business systems
- Need seamless integration between different administrative systems and commercial software packages for improved productivity and efficiency
- Need more campus-wide application development standards, architecture, and processes
- Need to continue to train our own and hire strong programming talent to keep up with pace of change
- Need to plan for the future

Recommendations

Based on feedback from campus and previous work presented in the CASE report, the Committee puts forth the following recommendations for enhancing administrative systems at the University.

Recommendation 9.1: Create a Master Plan for coordinating and supporting enhancements to administrative systems

Creation of a Master Plan for campus-wide administrative systems will clearly align resources and investments with the University's mission and goals. By providing a comprehensive roadmap for work ahead, the Master Plan will encourage coordination and collaboration between business areas and within the development community. Per the CASE report, the University should start looking ahead to plan for the future of administrative systems.

Recommendation 9.2: Standardize application development standards and training, and create efficient, secure, and accessible shell programs for administrative developers

Application developers across campus will benefit from having standardized shell programs in Natural and Python (Web-based development tools). Shell programs should be created for online and batch processes and should include needed security, audit trail and backup and recovery functions. The move to Python provides a clean slate in many ways, providing an opportunity to implement processes and standards as part of the migration to the new development environment.

Recommendation 9.3: Update the application development Quality Assurance and change management processes campus-wide

Implementing a campus-wide Quality Assurance (QA) process for the development community will help provide secure, stable, and efficient systems. QA strides have already been made in a number of administrative areas and can be leveraged to help develop a management process for all campus developers.

Benefits

- Understand investment mix between new and maintenance efforts
- Improve operational effectiveness and productivity
- Establish roadmap towards next generation systems
- Improve user experience with consistent look and feel for University administrative applications
- Increase developer efficiency
- Reduce rework
- Reaffirm controls are in place
- Improve productivity, performance, and security

High-Level Approach and Schedule

This section provides an overview of planned enhancements for the following administrative systems:

- Student Information Systems
- Financial Services
- Human Resources
- Information Quest
- Facilities Administrative Management Information System
- University Development
- ITS Support (Systems and Applications)

FY 2009 – 2010	FY 2010 – 2011	FY 2011 – 2012	FY 2012 – 2013	FY 2013 – 2014
Student Information Systems – Increase efficiencies, Expand functionality				
Financial Services – Increase efficiencies, Expand functionality, Improve business processes				
Human Resources – Increase efficiencies, Expand functionality, Improve business processes				
Information Quest – Increase efficiencies, Expand functionality, Improve business processes				
Facilities Administrative Management Information Systems – Increase efficiencies, Expand functionality, Improve business processes				
University Development – Improve VIP functionality, Increase automation, Enhance user access				
ITS Support (Systems & Applications) – Increase efficiencies, Expand functionality, Improve business processes				

Student Information Systems

The Student Record database and software at the University has grown in size and complexity since it was first implemented in the mid-1970s. Student Information Systems (SIS) maintains and enhances the current systems serving the administrative computing needs of the Office of Admissions, the Office of the Registrar, the Office of Provost for which DIIA manages credit by exam and Course Instructor Survey system, and other systems that process student data. Customer and user expectations for software and databases have increased as electronic capabilities expanded over the years. Expectations for software and systems that are more complex, secure, accessible, and scalable have driven the need for significant changes to the existing infrastructure.

Financial Services

Launched in the fall of 2008, the Financial Resource Management System (FRMS) project provides University personnel at all levels with an administrative system and the accompanying business processes for simplified and efficient processing of transactions associated with all financial operations and management. Plans for FRMS include building on the current real-time integration with a variety of other University systems including University Development, Student Information Systems, Student Financial Services, Facilities Services, Space Management, Budgeting, Payroll, Research, and college-specific and central ERP systems. The project recommends moving all systems on campus from the 3270 “green screen” interface to Web-based systems.

Human Resources

In October 2007, after development of a strategic plan for the University’s administrative software systems (CASE Report), the Position Management project begun in 2003 was re-envisioned as a full scale Web-based Human Resource Management System (HRMS). The HRMS system will provide University personnel at all levels with an administrative system and the accompanying business processes for simplified and efficient processing of transactions associated with the University workforce. The resulting HRMS will achieve real-time integration with a variety of other University systems, resulting in a foundational piece of a larger Human Resources Information System (HRIS) that is part of a comprehensive ERP system.

Information Quest

Information Quest (IQ) is the University’s data warehouse system. Plans for IQ include maintaining and building systems that provide campus leaders with ready access to data needed to make critical business decisions for the University. Expanding on initial successes in the Financial and Human Resource areas, current and future IQ projects cover a wide range, from making utilities and space management information available through IQ to providing tuition affordability information for students and their families to making Human Resource Management System (HRMS) information available to processing offices such as Budget, Human Resources, and Payroll. Plans also include hosting Project IQ at UT System and constituent UT System institutions.

Facilities Asset Management & Information System

Facilities Asset Management & Information System (FAMIS), Campus Planning and Facilities Management’s work order and project management system, is extensively integrated with the University’s mainframe applications. Enhancements to FAMIS include establishing an emergency notification system for campus and improving business processes to ensure increasingly efficient and accurate completion of work orders and capital projects. Positive response to the implementation of Work Order Request & Query System (WORQS), a Web-based tool for staff to submit, view, and track the progress of work orders led to plans to add new functionality. The Construct, Remodel, Install, Build (CRIB) Request form will allow users to submit online requests for estimates and projects.

University Development

Created in 1994, the VIP system is the University’s advancement system and the central repository of current information on alumni, donors, and key constituents. VIP includes modules for managing constituent data including individual, foundation, and corporate information; biographical records; gift, pledge, and planned gift administration. Additional relationship management functionality includes prospect management, endowment compliance, and stewardship modules. Plans to increase VIP’s level of relationship management capabilities are necessary to keep pace with the expectations of alumni and donors. The goal is for the institutional advancement information management system to seamlessly track advancement information across the University over a constituent’s life.

ITS Support (Systems & Applications)

Information Technology Services (ITS) deploys and supports the architecture and infrastructure used by major administrative functions on campus such as Student Information Systems, Financial Information

Systems, the Human Resource Management System, and University operations. ITS also maintains and improves the University’s identity management system and manages the University Web presence. Planned enhancements include developing and expanding computer resources for administrative business needs, updating the user interface for UT Direct and Web Central to current standards, and providing the foundation for communicating with customers and enabling them to conduct their business with the University.

Funding

Capital

The table below approximates capital costs.

	FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014
Student Information Systems	0.020	0.020	0.020	0.020	0.020
Financial Services	–	0.060–0.110	–	–	–
Human Resources	–	0–0.100	–	–	–
Information Quest	0.235	0.235	0.235	0.235	0.235
Facilities Asset Management & Information System	0.445–0.545	–	–	–	–
University Development	0.200	0.200	0.300	6.300	4.000
ITS Support (Systems & Applications)	5.53–8.53*	0.220	0.220	0.220	0.150
TOTAL	6.43–9.53	0.735–0.885	0.775	6.775	4.405

Amounts above are shown in millions of dollars.

*Includes mainframe replacement. Options and timing are under evaluation.

Operating

The table below approximates operating costs.

	FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014
Student Information Systems	1.390–2.350	1.390–2.350	1.390–2.350	1.390–2.350	0.640–1.600
Financial Services	0.757–0.760	0.767–0.770	0.612–0.615	0.322–0.325	0.072–0.075
Human Resources	1.120–1.700	1.120–1.700	1.120–1.700	1.120–1.700	1.120–1.700
Information Quest	1.445–1.695	1.445–1.695	1.445–1.695	1.445–1.695	1.445–1.695
Facilities Asset Management & Information System	1.378	1.278	1.278	1.181	1.181
University Development	0.870	0.914	0.959	1.200	1.550
ITS Support (Systems & Applications)	2.244	2.044	1.929	1.596	1.596
TOTAL	9.204–10.997	8.958–10.751	8.733–10.526	8.254–10.047	7.604–9.397

Amounts above are shown in millions of dollars.

Conclusion

The Committee challenges campus to change. A concerted and sustained effort on the part of campus leadership, faculty, students, and staff is needed to fully realize the strategic vision of IT enabling the University to excel in its mission. Moreover, implementation of the IT governance structure recommended in this report will provide the ongoing direction, continuity, and accountability required to ensure that IT serves and supports excellence in the University's academic, research, and public service mission.

Appendix A: Committee Charter

December 2008

Project Sponsor:

William Powers
President

Executive Rationale

The past two decades have borne witness to extraordinary change in the scale, complexity, and use of information technology at The University of Texas at Austin. Recognition of both the challenges and opportunities associated with the relentless growth and emerging mission-criticality of information technology prompted a number of efforts over the past few years to bring more discipline to our understanding and management of IT resources across campus, ranging from the creation of Information Technology Services (ITS) in 2000 to a number of more recent unsuccessful attempts to rectify funding models and rationalize responsibilities for IT services across a highly decentralized campus. The latter failures have left the campus with a lack of confidence in the efficacy of IT service provisioning, both centrally and at the unit level. At the root of this problem is an incomplete understanding of what services are currently offered, why they are offered, what they cost, or why they cost what they do. As a consequence, budget requests are viewed with skepticism, inefficiencies persist, and appropriate tradeoffs are not being made.

Because IT is inherently dynamic and consumes an increasing percentage of the University's budget, enduring governance and funding structures that can withstand changes in leadership, budgetary shifts, and the impact of emerging technologies are critical for ensuring stability, predictability, and transparency. The Committee's work begins with the knowledge that arriving at a consensus vision for IT at the University requires participation from across campus and at all levels. While there have been efforts in the past to wrestle with core challenges inherent to providing IT services in a complex academic environment, definitive solutions have not been reached. Questions persist about who provides IT products and services to campus, how IT is funded, and what is offered.

Service coordination, governance, and a resilient funding model are up for consideration and resolution. In order to attract and retain the best faculty and students as outlined by *The Commission of 125*, and to achieve the goal of becoming the best public university in the county, the needs and expectations of information technology must be met. The urgency of the situation requires a full report to the president by August 2009.

Objective

The Strategic Information Technology Advisory Committee (SITAC) was convened by President William Powers in October 2008 to identify and address core IT issues now facing the University. Chaired by Brian Roberts, Vice President for Information Technology and Chief Information Officer, the committee

will develop and deliver a campus-wide strategy that is broad and inclusive in vision and scope. There is not an expectation that this Committee will solve or resolve IT concerns and priorities at an operational level. The Committee will, however, construct a consensus vision for information technology at The University of Texas at Austin consistent with the mission of the University. Implementation responsibilities will be recommended as part of the final report.

The committee will address and deliver the following:

- A durable and comprehensive **strategic vision** for information technology at the University;
- **Guiding principles** that align IT priorities with the mission, purpose and values of the University;
- A **prioritized list of strategic initiatives** that address key policy and technology issues;
- Clear direction on **campus-wide IT provisioning** that resolves which IT services are provided to campus, and by whom;
- An **IT governance structure and methodology** that empowers the University community to achieve its academic, research, and business goals while controlling IT costs and maximizing efficiencies;
- A **funding model** that includes the necessary processes, framework, and accountability to weather changing economic times and maintain IT as an organizational competency for the University into the future.

Scope

SITAC members will tackle large campus-wide IT challenges but may delegate some research and analysis tasks to subject matter and technical experts.

In-Scope

The strategic planning initiative will encompass all information technology functions, central and distributed, within The University of Texas at Austin.

IT affects the entire campus and the scope of the committee's work is not limited only to units that provide IT services.

Out-of Scope

As a group, SITAC members will not be called on for specific subject matter expertise or to address technical details. Analysis and tasks related to the project planning and implementation of some strategic initiatives may be outside the scope of their responsibilities, though the deliverables from their work will direct and shape IT as a mission-critical service for the University as a whole. Some research and analysis may be delegated to an assembled task force that will provide recommendations to SITAC to inform their decision-making.

A Phased Approach

The work of SITAC and the strategic planning process for IT on campus will be conducted in the following phases:

- **Phase 1 - Scope and focus** [October – December 2008]

The initial charge of developing a consensus vision for a fiscally responsible IT model by February 2009 was re-focused in early December 2008. The Committee decided to broaden the scope of their effort by envisioning what IT looks like at “the greatest public university in America.” A team of three FTEs were dedicated to assist the committee in their work. August 2009 is the new deadline for the final report and recommendations.

- **Phase 2 - Research and Information Gathering** [January – February 2009]

Before a realistic and effective strategic plan for IT on campus can be created, background information is required. Support staff will accomplish a significant and comprehensive amount of research including personal interviews, focus groups, an online survey, online research, data gathering and analysis to arrive at a clear picture of the current state of IT here at the University and the aspirations of campus. The results of Phase 2 research serves as the basis for the day-long planning retreat in Phase 3.

- **Phase 3 - Day-long Planning Retreat** [March 2009]

The goal of this day-long planning retreat is for SITAC members to develop an IT vision and mission for the University, articulate and agree to the guiding principles that will inform and determine current and future IT decisions, and establish the strategic initiatives that will help move the University toward achieving its goals. All SITAC members will receive materials to review prior to the retreat.

- **Phase 4 - Campus-wide IT Priorities Strategic Planning** [March – April 2009]

Based on the work accomplished in the day-long planning retreat, SITAC members will meet on a weekly basis to develop and deliver recommendations for each strategic initiative. Members will draft and approve the initiatives as they go through them, so that an approved body of work will be in place by the beginning of May 2009. The Committee members will call upon technical and subject matter experts as needed to address the requirements of individual initiatives.

- **Phase 5 - Proposed Closing Retreat** [May 2009]

There may be the need for one additional retreat to finalize the remainder of the plan. This largely depends on how much work is accomplished in March and April. If SITAC members agree there is the need, the last meeting will focus on formulating the final details of the plan, including funding and governance. Decisions reached in this final meeting will be accepted and approved by Committee members. The efforts of the Committee will be turned over to support staff to be compiled, edited, and submitted to core team members for review and input.

- **Phase 6 - Refine Final Report and Recommendations and Deliver to President** [June – July 2009]

SITAC’s final report and recommendations will be a synthesis of the campus-wide IT strategic planning and funding model process. It will include:

- Strategic IT vision and mission

- Guiding principles
- Prioritized list of strategic initiatives with objectives
- Direction on campus-wide IT provisioning
- IT governance structure and methodology
- Funding model

The final report and recommendations will be formally delivered to President Powers, prior to being launched to the entire campus community in September 2009.

- **Phase 7 - Rollout to campus** [August – September 2009]

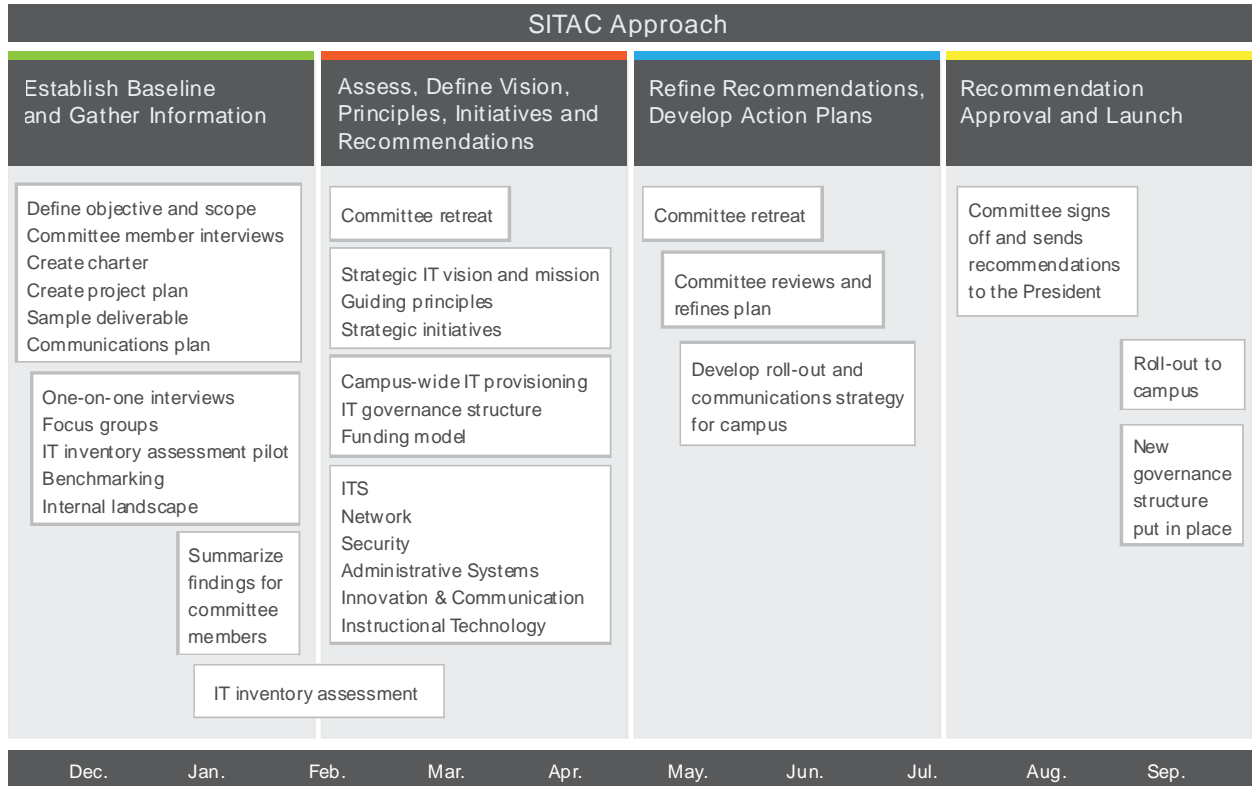
With the president’s endorsement of the final report and recommendations, the new governance structure for IT at the University will be put into place and the strategic initiatives launched to the entire campus community in September 2009.

Project Organization

<p>Committee Members</p> <p>Members of SITAC are appointed by President Bill Powers and include:</p> <ul style="list-style-type: none"> ● Alex Albright, Associate Dean, School of Law ● Tony Ambler, Chair, Electrical and Computer Engineering, Engineering ● Urton Anderson, Chair, Department of Accounting, Business ● Judy Ashcroft, Dean, Continuing and Innovative Education ● Pat Clubb, Vice President, Employee and Campus Services ● Pat Davis, Senior Associate Dean, College of Pharmacy ● Andrew Dillon, Dean, School of Information ● Brad Englert, <i>Ex Officio</i> member ● Kevin Hegarty, Vice President and Chief Financial Officer ● Judy Langlois, Vice Provost ● J S. Moore, Chair, Department of Computer Sciences, Natural Sciences ● Brian Roberts, Vice President for Information Technology and Chief Information Officer ● Laura Starks, Chair, Department of Finance, Business
<p>Project Manager</p> <ul style="list-style-type: none"> ● Liz Aebersold
<p>Internal Resources</p> <ul style="list-style-type: none"> ● Betsy Busby, Communications Coordinator ● Merri Su Ruhmann, Research Coordinator

Appendix B: Approach

The following diagram illustrates the approach that the Committee and support staff have taken to complete the work of gathering campus feedback and building the report and recommendations.



Appendix C: Benchmarks at Peer Universities

SITAC support staff interviewed the following representatives of various higher education IT organizations about IT funding and governance. A condensed summary of key points from these conversations follows.

Interviewee	Position, Area	Institution
Ruth Addis	Executive Director, IT Central Services	University of Michigan, Ann Arbor
Laurie Antolovic'	Deputy CIO and Finance Officer	Indiana University
Jim Bruce	Program Leader; Professor of Electrical Engineering Emeritus and Vice President for Information Systems Emeritus	MOR Associates IT Leaders Program; Massachusetts Institute of Technology
Jim Davis	Associate Vice Chancellor, Information Technology	University of California, Los Angeles
Robyn East	Deputy CIO, Information Technology Services	University of North Carolina, Chapel Hill
Bernard Gulachek	Senior Director, Office of Strategy Management	University of Minnesota, Twin Cities
Alisa Hata	Interim Deputy Chief Operating Officer	University of Washington, Seattle
Barry MacDougall	Director of Finance & Planning, IT Central Services	University of Michigan, Ann Arbor
Dennis Maloney	Retired Chief Technology Officer	University of Colorado, Boulder
Liz Marsh	Technology Program Office	University of California, Berkeley
Brian Rust	Communications, Division of Information Technology	University of Wisconsin, Madison

IT Funding Models

At a very simple, high level, there are three mechanisms for funding information technology in higher education:

- Across-the-board appropriation from the university to IT organizations
- Capitation fees, such as student fees
- Fee for service, such as data storage

The lines between these three are not clearly defined, and many universities use variations of the above mechanisms and a combination of all three.

IT Governance Models

Though interviewees from each institution discussed the uniqueness of their IT organizations, all agreed that successful IT governance requires strong executive sponsorship and faculty participation.

In higher education, IT governance is acknowledged to be crucial to the success of IT at the institution, but all organizations interviewed also acknowledged room for improvement with their implementation of IT governance.

Appendix D: Interview Sessions Overview

Introduction

Interviews were conducted to gather information and perceptions from executive leadership across campus regarding their priorities and critical issues with IT at the University. Many primary interviewees invited IT professionals, faculty, or other members of their portfolios to attend the interview as well.

Interviewees

Forty-one interviews were conducted across campus with the following people.

Primary Interviewee	Position, Area	Additional Participants
Tony Ambler	Chair, Electrical & Computer Engineering, Cockrell School of Engineering	Roland Rocha, Senior IT Manager Mike Filippo, IT Manager
Urton Anderson	Chair, Accounting, Red McCombs School of Business	n/a
Neil Armstrong	Executive Vice President and Vice Provost	n/a
Judy Ashcroft	Dean, Continuing and Innovative Education	n/a
Cam Beasley	Chief Information Security Officer, ITS	n/a
Rob Bruce	Associate Dean, Division of Instructional Innovation and Assessment and Continuing and Innovative Education	n/a
Pat Clubb	Vice President, University Operations (formerly Employee & Campus Services)	n/a
Pat Davis	Senior Associate Dean, College of Pharmacy	n/a
Doug Dempster	Dean, College of Fine Arts	Jim Kerkhoff, Assistant Dean, IT
Randy L. Diehl	Dean, College of Liberal Arts	Daniel Slesnick, Associate Dean
Andrew P. Dillon	Dean, School of Information	Shane Williams, Senior Network Analyst Mary-Lynn Rice Lively, Associate Dean
Gregory L. Fenves	Dean, Cockrell School of Engineering	Gerald E. Speitel, Associate Dean for Academic Affairs
Fred Friedrich	Associate Vice President and Controller, Office of Accounting	n/a
Thomas W. Gilligan	Dean, Red McCombs School of Business	Janet Dukerich, Senior Associate Dean David Burns, IT Director
Juan C. González	Vice President for Student Affairs	Donna Bellinghausen, Assistant Vice President
William Green	Director, Networking, ITS	n/a

Primary Interviewee	Position, Area	Additional Participants
Charles Groat	Interim Dean, Jackson School of Geosciences	Luciano Correa, Research Engineering/Scientist Associate III Sharon Mosher, Chair in Geology Ty Lehman, Senior Systems Analyst Cliff Frohlich, Associate Director, Institute for Geophysics Mark Wiederspan, Senior Systems Analyst Eric Potter, Program Director, Bureau of Economic Geology Scott Rodgers, Project Manager Ron Russell, Manager, Computing Services
Don Hale	Vice President for Public Affairs	n/a
Roderick P. Hart	Dean, College of Communication	Janice Daman, Assistant Dean Charles Soto, IT Director
Fred Heath	Vice Provost, University of Texas Libraries	Sue Phillips, Associate Director
Kevin P. Hegarty	Vice President and Chief Financial Officer	n/a
Margaret Hill	Assistant Dean, School of Nursing	Alan McKendree, Systems Analyst
Manuel J. Justiz	Dean, College of Education	Paul Resta, Professor and Director, Learning Technology Center Ryan Baldwin, IT Director for the Learning Technology Center Marilyn Kameen, Senior Associate Dean
Scott C. Kelley	Executive Vice Chancellor for Business Affairs, UT System	Clair Goldsmith, Senior IT Advisor Marg Knox, Associate Vice Chancellor and CIO
Steve Leslie	Executive Vice President and Provost	n/a
John McCall	Associate Vice President, University Development Office	Juan Garcia, Assistant VP
Steve Monti	Executive Vice Provost	n/a
J Moore	Chair, Computer Sciences, College of Natural Sciences	3 additional participants, names not captured
Patricia Ohlendorf	Vice President for Legal Affairs	n/a
Chris Plonsky	Athletic Director, Intercollegiate Athletics	n/a
Mary Ann Rankin	Dean, College of Natural Sciences	Jeff Brumfield, Associate Dean Patti Spencer, Associate Chair for Operations Robin Gutell, Associate Professor

Primary Interviewee	Position, Area	Additional Participants
Brian E. Roberts	Vice President for Information Technology and Chief Information Officer	n/a
Victoria E. Rodriguez	Vice Provost and Dean, Graduate School	Pat Ellison, Associate Director of Admissions and Assistant Dean of Graduate Studies
Charles A. Roeckle	Deputy to the President	n/a
Lawrence Sager	Dean, School of Law	Mike Harvey, Director of Technology
Juan Sanchez	Vice President for Research	Kurt Bartelmehs, Assistant VP Beth Dishman, Assistant VP
Shelby Stanfield	Associate Vice President, Office of the Registrar	Angela Svoboda, Director, Office of Admissions
Frederick R. Steiner	Dean, School of Architecture	Eric Hepburn, Director of Information Technology Jeff Evelyn, Assistant Dean for Administration Kent Butler, Associate Dean for Research and Operations, Program Director and Associate Professor, Graduate Program in Community and Regional Planning
Caren Troutman	Director, Information Technology and Media Services, LBJ School of Public Affairs	Jeff Patterson, Assistant Dean
Wayne Wedemeyer	Director, Office of Telecommunication Services, ITS	n/a
Barbara W. White	Dean, School of Social Work	Tom Bohman, Research Scientist Noel Bush, Lecturer John Trout, Senior Systems Analyst Robert Cannon, Senior Systems Analyst Jim Schwab, Professor, Director, PhD program Egidio Leitao, Assistant Dean Julie Cunniff, Assistant to the Dean
Paul B. Woodruff	Dean, Undergraduate Studies	David Spight, Assistant Dean for Advising Lara Harlan, Coordinator, Communication & Special Projects

Process

Prior to each interview, the interviewees were sent a list of questions to consider. Interviews were conducted by Liz Aebersold, SITAC Project Manager, and Brad Englert, *Ex Officio* SITAC member.

The list of questions to consider was:

- What are your highest priorities over the next one to three years? What’s really important to you right now?
- What are the strengths of information technology support at UT? What works really well? Where does information technology support fall short?
- Imagine an ideal world at UT relative to information technology supporting achievement of your highest priorities. What does it look like?

Appendix E: Focus Group Sessions Overview

Introduction

Focus group sessions were conducted to gather information and perceptions from across campus regarding areas for improvement and critical issues with IT at the University. Participants were also asked to identify their needs and expectations regarding technology. Faculty, students, and staff participated in the focus group sessions.

Groups

Seventeen focus groups were conducted across campus with the following constituencies:

- Undergraduates (1 session)
- Graduate Students (1 session)
- Faculty (6 sessions)
- Teaching and Learning Staff (1 session)
- ITS Senior Staff (1 session)
- Technical Support Staff (2 sessions)
- Tech Deans (2 sessions)
- Administrative Developers (2 sessions)
- Business Administration Staff (1 session)

Participants

For the faculty focus groups, the Committee requested that at least one faculty member from each department be invited to a focus group. Tenured or tenure-track faculty constituted the bulk of the invitations. Invitations were sent to more than 300 faculty members: some suggested by members of SITAC or deans, others being members of the Provost's Information Technology Advisory Committee (ITAC), and the remaining selected at random from their department's Web sites. At least two, and up to five, faculty members were invited from each department. Sixty-one faculty members responded that they would attend a focus group session.

Student focus group sessions were conducted with student government representatives. Staff focus group sessions were conducted with representatives from each staff category listed above. For some sessions, such as the ITS Senior Staff and the Tech Deans, invitations were sent to all members of the group. For other sessions, such as technical support staff, invitations were sent to representatives of that group from across campus.

Process

Each focus group session was facilitated by Merri Su Ruhmann, SITAC Research Coordinator and assisted by Betsy Busby, SITAC Communications Coordinator.

The sessions followed this general format:

- Introductory statement about SITAC and deliverables
- Round-table introductions with name, department, and starting question, either “What is IT in your world” or “What is one IT issue on your mind” (the graduate student session did not include this item due to large number of participants and limited time)
- Open-ended questions with answers and discussion were transcribed
- Final thoughts from the group

Open-ended questions included:

- What are your highest priorities for your unit and the University over the next one to three years? What’s really important to you right now?
- What are the strengths of information technology support at UT? What works really well? Where does information technology support fall short?
- Imagine an ideal world at UT relative to information technology supporting achievement of your highest priorities at UT. What does it look like?

Appendix F: IT Inventory Assessment Overview

The University of Texas at Austin has a highly distributed IT environment. This has resulted in numerous software licenses being procured at a local level, preventing the University from capitalizing on economies of scale when purchases are made.

As part of the Committee’s research gathering phase, the IT Inventory Assessment was conducted to gain a better understanding of where colleges, schools, and units (CSUs) at the University spend money on software licenses and subscriptions. With this information, the new IT governance structure can begin to identify areas in which the University can benefit from more centralized purchasing and procurement. By tracking software licenses across campus, it is possible to find areas for potential savings for the University and improve purchasing power for CSUs.

This effort supports the recommendations in *Initiative 2: Build the New ITS Funding Model* and *Initiative 3: Establish Flexible Provisioning of IT Services*.

Appendix G: Define IT Governance Supplemental Material

As a highly decentralized organization that values local autonomy, the University has struggled in recent years to find a workable and sustainable process for campus-wide IT decision-making. Both historically and culturally, the constellation of existing IT committees has not been able to produce timely decisions, establish cost-effective priorities, or create an IT vision that aligns with the University's mission and goals. While these committees have done important work at the University, they have lacked a well-defined governance structure and official sanctioning by University leadership to legitimize their efforts.

As of summer 2009, the following IT governance-related groups are known to exist at the University:

- Administrative IT Governing Council
- Administrative IT Leaders
- Blackboard Task Force
- Business Services Council
- Classroom Technology Committee
- Faculty Council IT Committee
- Human Resource Management System (HRMS) Executive Committee
- Information Technology Advisory Committee (ITAC)
- Information Quest (IQ) Governance Group
- Tech Deans

Appendix H: Enhance Administrative Systems Supplemental Material

In order to better understand the current and upcoming work on administrative systems, SITAC gathered the following plans from administrative systems owners across campus.

Unit	Project(s)
Student Information Systems	<ul style="list-style-type: none"> • Student Information System infrastructure and functionality improvements
Financial Services	<ul style="list-style-type: none"> • eLearning for the ERP • UT Austin Enterprise Resource Planning (ERP) framework • askUS! ERP knowledge database fill deployment • Financial Resource Management Systems (FRMS) framework • Refactoring and population of the Handbook of Operating Procedures • Inventory system upgrade and expansion • Organizational hierarchy system • Web-enabling accounting and related systems
Human Resources	<ul style="list-style-type: none"> • Human Resource Information Systems for the Human Resource Management System (HRMS) project • HRMS Phases 2, 2.5, 2.6 and planning for Phase 3
Information Quest	<ul style="list-style-type: none"> • HRMS information using Information Quest (IQ) tools. • IQ Cognos equipment refresh • IQ database equipment refresh • IQ near real-time data warehouse • Research Information Management using IQ tools • Space Management Information using IQ tools. • Tuition affordability from a student's perspective. • Business intelligence initiative (IQ) for UT System Administration • Utilities (gas, water, electricity) management using IQ tools • Business intelligence initiative (IQ) for UT Tyler • Business intelligence initiative (IQ) for UT Permian Basin
Facilities Asset Management & Information System	<ul style="list-style-type: none"> • Emergency notification system • Facilities Work Management systems • Fleet management • University copying and printing • Parking management system: T2-Flex, PTNet, and McGann • Space information management initiative • Utilities information system
University Development ITS Support (Systems & Applications)	<ul style="list-style-type: none"> • Transform Advancement information management capabilities • Expand and enhance administrative computing infrastructure • Identity management, authentication, and authorization service enhancements • utexas.edu web presence upgrade and redesign • Enterprise workflow enhancements to the DEFINE internals infrastructure and continued research and development into Quali

Appendix I: IT@UT – An Historical Overview

This document presents a brief timeline of the history of information technology (IT) at The University of Texas at Austin. While by no means exhaustive, the timeline provides a decade-by-decade view of the events, decisions, trends, and new technologies that make up the unique story of IT on our campus.

To provide context and perspective, the timeline is divided into four broad categories:

- IT on Campus
- Research, Teaching, and Learning
- Campus Life
- Technology News

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Early Milestones: 1959 - 1969

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1959	<ul style="list-style-type: none"> UT Computation Center (UTCC) planned and built. 			
1965			<ul style="list-style-type: none"> User access to computers is by punch cards, paper tape, or teletype (TTY). Academic Computation Center formed. 	
1966	<ul style="list-style-type: none"> Control Data Corporation (CDC) Model 6600 'supercomputer' installed. CDC machine uses discrete RTL logic and fills a room. 	<ul style="list-style-type: none"> Continuing Education uses punch cards to track students in correspondence courses, their lessons and instructors payments (COBOL). 		
1969	<ul style="list-style-type: none"> UTCC User's Manual published. One 3-inch binder held all necessary information. 			

1970 - 1979

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1970				
1971	<ul style="list-style-type: none"> CDC Model 6400 'supercomputer' installed. Work begins to create 'dual' operating system (OS). DEFCCM (DEFine Control Card Macro), a control command macro processor (aka a command scripting language) is written for the UTCC. 	<ul style="list-style-type: none"> CDC machines used by Computer Sciences PhD candidates for research into operating systems. UTCC system programmers help by inserting 'probes' into the OS for data gathering. 		
1972			<ul style="list-style-type: none"> Student registration is retained in electronic format for the first time (in *NRRECS.) 	
1973	<ul style="list-style-type: none"> Control Data Corporation (CDC) 6400/6600 system running locally written operating system (OS). 		<ul style="list-style-type: none"> Single player STARTRK game available on CDC. 	

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1974		<ul style="list-style-type: none"> Commercially available SYSTEM 2000 (aka S2K) database management system from MRI Systems, Inc. replaces locally written RFMS (Remote File Management System). MRI grants the UTCC free use of S2K in recognition of “the significant and valuable research conducted by the University of Texas at Austin which contributed to the development of SYSTEM 2000.” 		
1975				
1976				
1977			<ul style="list-style-type: none"> Gaming appears on campus with the multi-player real-time DECwar game available on DEC-10 in the UTCC. 	
1978	<ul style="list-style-type: none"> Overall CDC system disk storage increased from 600MB to 2.8GB. 		<ul style="list-style-type: none"> Hybrid Computing Lab (HCL) becomes Advanced Graphics Lab (AGL). 	
1979			<ul style="list-style-type: none"> Terminals in academic departments are connected to academic computation center. Students begin to use central computer accounts to edit text documents. Online accounts were for departments, not individuals. User login was their phone number with a departmental prefix. 	

1980 - 1989

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1980	<ul style="list-style-type: none"> ▪ CDC 9-track tape drives installed that could read/write 6250 CPI at 150 inches/second. 	<ul style="list-style-type: none"> ▪ Continuing Education starts using Natural/Adabas application to track all student registrations. Application is also used later by continuing education programs including Law, Pharmacy, and Engineering. 	<ul style="list-style-type: none"> ▪ Xerox 9700 is first high-speed (120 pages per minute) laser printer on campus. It supports administrative computing. ▪ First online application written in NATURAL and using ADABAS launches. It supports drawing tickets for football games. 	
1981				<ul style="list-style-type: none"> ▪ First IBM PC launched. ▪ Japan challenges US chip makers by producing inexpensive 64-kbits chips.
1982	<ul style="list-style-type: none"> ▪ General Libraries and Data Processing launch online library circulation system. 			<ul style="list-style-type: none"> ▪ Time magazine names “the computer” Man of the Year.
1983	<ul style="list-style-type: none"> ▪ Mainframe and minicomputers in use in some departments. ▪ First e-mail program written for CDCs. 		<ul style="list-style-type: none"> ▪ Departmental access to some financial information available with predecessors of *DEFINE system. 	<ul style="list-style-type: none"> ▪ 500 hosts are on the ARPAnet – predecessor of the Internet.
1984	<ul style="list-style-type: none"> ▪ IBM-funded Project Quest provides grants for microcomputers across campus. ▪ Texas Union Microcomputer Center sells computers to students at a discount, including the new Macintosh. 	<ul style="list-style-type: none"> ▪ ACITS opens UT’s flagship 200-seat Student Microcomputer Facility (SMF) in the Flawn Academic Center. 	<ul style="list-style-type: none"> ▪ University payroll system written entirely in NATURAL by staff goes into production. 	<ul style="list-style-type: none"> ▪ Apple announces the Macintosh. ▪ The term “cyberspace” is first used in William Gibson’s novel <i>Necromancer</i>.
1985	<ul style="list-style-type: none"> ▪ Computation Center offers first open-access microcomputer lab. ▪ First Unix workstation on campus. 			<ul style="list-style-type: none"> ▪ 2,000 hosts on the Internet by the end of the year.
1986	<ul style="list-style-type: none"> ▪ Individually Funded (IF) accounts let student, faculty and staff get computer accounts and network access outside of classes. This includes laser printing. 	<ul style="list-style-type: none"> ▪ The Office of Survey Research (OSR) creates interviewing stations to conduct online data collection and equips them with 22 computer-assisted telephones. 		

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1987	<ul style="list-style-type: none"> ▪ Campus broadband network installed (cable TV/coaxial). ▪ Departments begin to move from minicomputers to workstations to microcomputer networks. 			<ul style="list-style-type: none"> ▪ Over 10,000 hosts by the end of this year. ▪ The Morris worm—the first worm to hit the Internet—cripples many Unix systems. DARPA forms the Computer Emergency Response Team (CERT) to handle future emergencies. ▪ UT Austin staff develop a copyrighted password-checking tool called “npasswd,” which becomes the standard password-checking tool for many years. It is used by NASA Jet Propulsion Laboratory.
1988	<ul style="list-style-type: none"> ▪ General Libraries online catalog system, UTCAT, launches as a NATURAL application, using ADABAS as its database. 	<ul style="list-style-type: none"> ▪ Continuing Education processes GED tests on PC, using optical scanners. 		
1989	<ul style="list-style-type: none"> ▪ Law School and other depts. begin to offer unified microcomputer systems that include servers and networks. 			<ul style="list-style-type: none"> ▪ Australia, Germany, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, and the United Kingdom join the Internet.

1990 - 1999

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1990		<ul style="list-style-type: none"> ▪ Depts. begin to use Internet for academics and research. ▪ Continuing Education offers Telelearning courses to students at remote site via telephone bridge. 	<ul style="list-style-type: none"> ▪ TEX touchtone registration available to students for the first time with Spring Registration. ▪ DEFINE redeveloped in the form it exists today. 	<ul style="list-style-type: none"> ▪ ARPANet formally shuts down. “The net” went from 4 to over 300,000 hosts in 20 years. ▪ Search tools such as ARCHIE, Gopher and WAIS appear for the first time.

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1991		<ul style="list-style-type: none"> ▪ Continuing Education processes GED for Texas (Natural/Adabase environment), using optical scanners. 	<ul style="list-style-type: none"> ▪ Internet begins to be used as information store by non-researchers. 	<ul style="list-style-type: none"> ▪ The Gore Bill to create the National Research and Education Network, or NREN initiative, passes in Congress. ▪ Total traffic on the NSFNET backbone exceeds 1 trillion bytes, or 10 billion packets per month! ▪ Over 100 countries are connected with over 600,000 hosts and close to 5,000 separate networks.
1992	<ul style="list-style-type: none"> ▪ Amdahl 5995M-4550 mainframe (175 MIPS) purchased to support the General Libraries and administrative computing. It is housed in a second, “lights out” data center. 	<ul style="list-style-type: none"> ▪ General Libraries teaches first class using the Web. 	<ul style="list-style-type: none"> ▪ Telesys service launched. Remote dial-up makes the Internet available to faculty, students, and staff from home. 	<ul style="list-style-type: none"> ▪ Privatization of NSFnet. ▪ There are 26 Web servers worldwide. ▪ For the first time, audio and video are carried on the MBONE.
1993	<ul style="list-style-type: none"> ▪ October 21 – a WWW line-mode browser is installed on Academic Computing Unix systems. A note read, "This is a test to see if WWW is something we want to use." ▪ Fiber network installed replacing coaxial broadband system. 	<ul style="list-style-type: none"> ▪ Publication of Thrinaxodon: Digital Atlas of the Skull. CD-ROM (1st edition, MS-DOS, 623 megabytes) UT Press. 	<ul style="list-style-type: none"> ▪ ITAC Student fee begun to help fund growth of services like UMBS, Telesys, and micro labs. ▪ November 25 - first Web version of The Daily Texan. 	<ul style="list-style-type: none"> ▪ The Pentium microprocessor is released. ▪ The first successful software for Web browsing, Mosaic, is released.

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1994	<ul style="list-style-type: none"> ▪ ACITS becomes the first unit on record at UT Austin to install a Web server; a second is installed 2 days later. In June 1993, about 125 Web servers are worldwide. Two of those are at UT Austin. 	<ul style="list-style-type: none"> ▪ Computer Science Department and Grad. School of Library and Information Science announce their Web sites. ▪ The multidisciplinary Multimedia Instruction Committee is commissioned to study the impact of IT on instruction and learning including classroom, multimedia and distance learning. ▪ World Lecture Hall is launched. It publishes links to pages created by faculty worldwide who are using the Web to deliver course materials in any language. Evaluated as "an excellent resource for college and university educators to see how their colleagues are using the Internet for instruction." ▪ First interactive multimedia instructional CDROM is developed for use in a large introductory science course (coinciding with the addition of CDROM drives in the SMF Lab.) 	<ul style="list-style-type: none"> ▪ General Libraries' first Internet Handouts are available. ▪ Academic Computing and General Libraries staff conduct first WWW workshop in FAC 227. ▪ ~ftp/student area created for student organizations to publish to the Web. ▪ The Admissions Office launches a document imaging system. This is the first time on a large scale that paper documents were scanned to create digital images, which were then indexed and stored in a central repository for ready access electronically. 	<ul style="list-style-type: none"> ▪ Netscape Communications Corporation, Yahoo and other Web-based companies are founded. ▪ UT Austin WWW server receives honorable mention in Best of the Web contest. The server is 1 month, 4 days old.
1995	<ul style="list-style-type: none"> ▪ TeamWeb is formed by Academic Computing, General Libraries, and Administrative Computing. ▪ Nov. 29 – Three colleges announce Web sites: <ul style="list-style-type: none"> - Engineering - Fine Arts - Natural Sciences ▪ Dec. 19 – The library catalog is available on the Web via UtnetCAT. ▪ Connections to the UT Austin home page: 2,545,341. 	<ul style="list-style-type: none"> ▪ College of Natural Sciences establishes a multimedia lab to provide training and technical support for faculty and students in developing instructional technologies for teaching and research. ▪ First MA thesis submitted on CDROM at UT. 	<ul style="list-style-type: none"> ▪ Administrative Computing Services formed. ▪ "Information Analyst" job title introduced. ▪ The Ex-Students' Association joins TeamWeb. ▪ First Faculty and Staff Web Week held. About 550 attend. ▪ July 21 – Frank Erwin Center marquee displays URL to its Web page. First time a URL is displayed so publicly on campus. ▪ October 27 – First time prospective students can apply for admission to UT Austin via the Web. 	<ul style="list-style-type: none"> ▪ CNN's Science and Technology Week features Web Central in a story about the Web. ▪ The Chronicle of Higher Education publishes "Professors Put Course Materials on the Internet." The article includes several paragraphs on UT Austin's World Lecture Hall. ▪ Movie <i>The Net</i> is released starring Sandra Bullock

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1996	<ul style="list-style-type: none"> ▪ Registrar’s Office launches the SPEEDE Electronic Data Interchange service for exchanging transcripts, test scores, and other academic records among registered institutions nationwide via the Internet. This is the first time such a service is offered. 	<ul style="list-style-type: none"> ▪ Education Coordinating Board gives UT Austin 102 awards totaling \$13.69 million for research programs administered through the Advanced Research Program and the Advanced Technology Program. ▪ TeamWeb Faculty Consulting begins operation. ▪ Provost Mark Yudof brings together three units to form the new Center for Instructional Technologies (CIT) to champion the development of innovative instructional technologies on campus: College of Natural Sciences multimedia lab, Office of Distance Education, and Project QUEST. ▪ CIT implements the First Annual Innovative Instructional Technology Awards Program with cash support from the Office of the Provost. IITAP is designed to encourage and reward faculty efforts to develop new multimedia course content for UT Austin courses using emerging technologies ▪ First PhD dissertation submitted on CDROM in the nation (by Leslie Jarmon) Article written in Chronicle of Higher Education. 	<ul style="list-style-type: none"> ▪ Resnet installed in campus residence halls. ▪ The Center for Teaching Effectiveness joins TeamWeb. ▪ March 19 – University Co-Op launches its first Web site. ▪ August 16 – First secure form on Web Central created for Ex-Students’ Association so alumni can make donations with their credit cards. 	<ul style="list-style-type: none"> ▪ The Austin American-Statesman mentions the Financial Services Web in a question-and-answer series on financial aid. ▪ August – Texas Monthly names the University Web a top educational site in an article on the top 100 Web sites in Texas.

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1997	<ul style="list-style-type: none"> ▪ Year 2000 separate testing environment created on mainframe. 	<ul style="list-style-type: none"> ▪ Intel Corp. awards \$6 million to UT Austin for equipment to do high-level computation previously requiring super-computers or mainframes. ▪ FAST Tex launched by Center for Instructional Technologies. Program teams students who have strong technical skills with faculty to develop innovative instructional technologies for the classroom. ▪ UT professor licenses revolutionary packaging technique for microchips. ▪ UT College of Education Learning Technology Center leads the way in connecting Native American schools to Internet. ▪ Grad. School of Library and Information Science receives grant to study the computing and telecom needs of rural judicial districts in Texas. ▪ Continuing Education provides information about correspondence course students online for public schools. ▪ First high-resolution X-ray CT scanner acquired for use in scientific research in an academic institution in the USA. 	<ul style="list-style-type: none"> ▪ Student IT Acceptable Use Policy formally adopted. ▪ UTCD '98 gets "high tech and personal" with accepted freshman applicants. ▪ Summer engineering program offered for middle-school girls and teachers. ▪ College of Education hosts major international instructional technology Conference -"Global Learning in the 21st century." ▪ Professors and students of the College of Education are major organizers and participants of the upcoming conference "Global Learning in the 21st century." ▪ First UT Austin Interactive (UTCD 97) introduces prospective students to academic opportunities at UT and gives them a wide range of practical information in making the transition to campus life 	<ul style="list-style-type: none"> ▪ Dr. Ken Kennedy, co-chair of President Clinton's High Tech Advisory Committee, discusses "Federal Investment in Information Technology: A Strategy for the Future" at event in UT Austin Main Bldg. ▪ Establishment of the UT TeleCampus

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
1998	<ul style="list-style-type: none"> ▪ Telecommunications Infrastructure Fund (TIF) helps fund growth of campus network. ▪ Information Security Office created to address security issues. ▪ Amdahl Millennium GS-785 mainframe (500 MIPS) purchased and installed to support the General Libraries and administrative computing. It is the first CMOS-based mainframe on campus, taking only 6% of the floor space and 6% of the power required by its ECL-based predecessor. ▪ Year 2000 Project Team formed to coordinate planning across campus. 	<ul style="list-style-type: none"> ▪ Online lesson submission offered by Continuing Education for the first time. ▪ CIT provides campus-wide support for WebCT, a course management system. ▪ Division of Instructional Innovation and Assessment (DIIA) is formed to integrate pedagogy, instructional technology, and assessment to promote effective and innovative instructional and evaluation practices. DIIA is made up of three centers: Center for Teaching Effectiveness, Center for Instructional Technologies and Measurement and Evaluation Center. 	<ul style="list-style-type: none"> ▪ September 1 – First Microsoft site license at UT Austin. ▪ Campus Computer Store opens in the Varsity Building. ▪ The Admissions Office launches ApplyTexas, the system by which students from across the State of Texas apply for admission to 34 general academic teaching institutions via the Web. This is the first time a student can fill out a single electronic form and have it sent to multiple schools. 	<ul style="list-style-type: none"> ▪ June 17 – National Web usage research company ranks UT Austin fourth in Web visits for universities.
1999	<ul style="list-style-type: none"> ▪ Formal Web Office created with funding and approval from Office of the Provost. 	<ul style="list-style-type: none"> ▪ Technology Classroom Committee formed. 		

2000 - 2009

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
2000	<ul style="list-style-type: none"> ▪ August – UT Direct portal launched along with Blackboard and Webmail. 	<ul style="list-style-type: none"> ▪ The College of Liberal Arts and the College of Natural Science form a partnership, pooling funds and staff to create economies of scale, and build a purchasing and production system that mass-produces technology classroom installations at extremely low cost. ▪ Continuing Education pilots one college level distance education course on the Web with instructor/student interaction component. 	<ul style="list-style-type: none"> ▪ Broadband available for people at home. 	<ul style="list-style-type: none"> ▪ Google and other service providers take the lead – more and more universities follow the marketplace rather than innovate. ▪ State of Texas (DIR) starts to require reports of IT security incidents.

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
2001	<ul style="list-style-type: none"> ▪ Information Technology Services (ITS) formed from three units: <ul style="list-style-type: none"> - Academic computing - Administrative computing - Telecommunications ▪ Dan Updegrove named first VP-IT on campus. ▪ Wireless starting to be deployed. ▪ UT chooses premier search engine of the time, AltaVista. ▪ UT Austin leads the way in developing tools internally to quickly manage and respond to future IT. 	<ul style="list-style-type: none"> ▪ Responsibility for technology in General Purpose Classrooms transferred from ITS to the colleges. ▪ Continuing Education provides distance education courses on CD with online Web component and instructor/student interaction component. ▪ DIIA leads the TIF e-Learning grant investigation and coordinates with participating colleges in researching and developing online learning strategies, techniques and tools. 	<ul style="list-style-type: none"> ▪ New VP for Public Affairs hires Web staff and assumes ownership of content on UT Austin’s online “front door”. 	<ul style="list-style-type: none"> ▪ Massive organized worms start to appear (Code Red, Nimda). Thousands of systems affected on campus creating massive downtime. ▪ Following the terrorist attack on September 11, CNN posts a link to maps of Afghanistan contained in the university’s map collection. Requests are so numerous and rapid it impacts the functioning of the campus network.
2002		<ul style="list-style-type: none"> ▪ LEARN (Lonestar Education and Research Network) is formed. ▪ DIIA’s eGradebook developed and implemented to integrate with classroom test scanning and provide a solution to using SSNs to display grades. ▪ DIIA investigates and publishes best practices on the use of wikis in the classroom. ▪ DIIA CIT develops a Java Slice Viewer (UTCT InspecTOR Java Applet) for the Digital Morphology Web site that allows interactive use of high-resolution X-ray CT (computed tomography) images. 		

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
2003	<ul style="list-style-type: none"> ▪ Fujitsu Millennium GS-2087A mainframe (636 MIPS) purchased as backup to the primary mainframe that supports General Libraries and administrative computing. It is installed in a separate data center. ▪ UT Austin gets fed up with spam and buys infrastructure to filter it (NOTE: 16 million messages per day – 97% are spam). ▪ First large data theft occurs (UT Direct). 	<ul style="list-style-type: none"> ▪ DIIA develops first campus-wide Online Course Assessment system that allows instructors to solicit anonymous feedback from students. ▪ DIIA works with Texas Advanced Computing Center (TACC) on the use and distribution of Grid Computing on campus ▪ DIIA launches a four-year investigation of streaming media tools and protocols for classroom use. ▪ DIIA develops and implements a computerized, self-contained quiz tool to test students’ knowledge of nuclear magnetic resonance (NMR) spectroscopy using the new standard of XML and Java Architecture for XML Binding (JAXB). ▪ DIIA organizes and hosts IT Showcase—the first campus-wide systemic sharing of instructional technology innovations and new tools and techniques for use in teaching and learning projects. 	<ul style="list-style-type: none"> ▪ On ten-year anniversary of the campus Web, School of Information (formally GSLIS) recognizes early TeamWeb members and others as campus Web Pioneers. 	<ul style="list-style-type: none"> ▪ University’s Web cited as most accessible University Web site in a study from the University of Washington. ▪ The Information Security Office is formalized and reports to new VP-IT. ▪ SQL Slammer hits with a huge distributed Denial of Service attack that waylays the campus network. UT Austin staff detects and diagnoses the problem and in less than 2 hours the bulk of the problem on campus is taken care of. Many campuses/businesses suffer or are completely offline for 3-8 days.

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
2004	<ul style="list-style-type: none"> ▪ IBM z890 mainframe (1365 MIPS) purchased and installed to support University Libraries and administrative computing. ▪ ITS eliminates 25 positions as part of the campus-wide Reduction in Workforce. 	<ul style="list-style-type: none"> ▪ Joined National Lambda Rail (NLR) for research computing. ▪ Continuing Education provides courses exclusively online for the first time. ▪ DIIA develops and implements electronic Course-Instructor Survey system. ▪ DIIA develops EUREKA! – allows researchers and students to match up. ▪ DIIA evaluate Turnitin and SafeAssign as a plagiarism detection tool. ▪ DIIA conducts research to determine a centrally supported Classroom Response Systems. Ongoing assessment continues. ▪ DIIA investigates interactive learning space that supports collaborative learning and new media-based instructional practices. 	<ul style="list-style-type: none"> ▪ Launch of UTOPIA, the university’s digital knowledge gateway project, to bring University’s treasures to the citizens of Texas via the Web. ▪ SSN Remediation (SSN Oversight Team) begins. ▪ Telesys revenues dropping, ITS depends on telephone reserves for financing. ▪ The Library moves out of FAC and former library spaces become student study spaces. ITS and the Campus Computer Store move in. 	<ul style="list-style-type: none"> ▪ The rise of social networking (Facebook et al).
2005	<ul style="list-style-type: none"> ▪ The ISO creates first known sensitive data identification tool to help locate legacy SSN/CCN data on university systems. SENF is standardized by many EDUs all over the world. 	<ul style="list-style-type: none"> ▪ DIIA begins work with instructors and students in Second Life and reviewing other virtual world environments. 	<ul style="list-style-type: none"> ▪ UT Direct 2.1 implemented with new look, updated API and less code overall. ▪ Formal information security policies and guidelines approved for campus. 	<ul style="list-style-type: none"> ▪The university wins the ACUTA Institutional Excellence Award.

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
2006	<ul style="list-style-type: none"> ▪ The University launches mobile.utexas.edu, a Gopher-like menu of UT Austin resources for mobile devices and cellular phones. ▪ Second large data theft occurs on campus (McCombs). ▪ Dan Updegrave steps down as first VP-IT on campus. ▪ Brian Roberts appointed VP-IT after national search. ▪ ITS per FTE allocation begins to fund core services. ▪ University Libraries launches new online catalog system from Innovative Interfaces Inc., replacing UTCAT and Utnetcat. 	<ul style="list-style-type: none"> ▪ DIIA investigates and publishes best practices of using blogs in the classroom for the campus. ▪ DIIA investigates and publishes best practices of using podcasts in the classroom for the campus. ▪ DIIA evaluates the efficacy and potential of digital media technologies in supporting student learning across multiple disciplines. ▪ DIIA launches Digital Media Services program to partner with faculty in preparing students to be 21st century professionals ▪ DIIA completes the multi-year Webcasting Impact Study. Results suggest that webcasting offers learning and psychological benefits to students, but findings are inconclusive. Recommendation: continue investigating the effects of webcasting and informing future practices in integrating webcasting into UT Austin courses. 	<ul style="list-style-type: none"> ▪ January 5 – Web Central sets traffic record with over 415,000 sessions and 12 million hits the day after the Longhorns win National Championship by defeating USC in the Rose Bowl. ▪ The ISO promotes first Destruct-o-thon for media destruction. Due to the response, this becomes a free service year-round handling thousands of drives each year. ▪ UT Austin participates in Cyber Security Awareness Month for the first time. 	<ul style="list-style-type: none"> ▪ Ability to listen to SmartVoice messages through e-mail.
2007	<ul style="list-style-type: none"> ▪ First campus-wide IT risk assessment performed. ▪ ITS offers MySQL Database Services to campus. ▪ restricted.utexas.edu required for use of the campus wireless system. ▪ ITS ceases markup on long distance and stops charging for caller ID. 	<ul style="list-style-type: none"> ▪ DIIA develops an online tool to interactively record, store and serve digital media with a custom-built interface, adopted for use by College of Education and Texas Language Technology Center. ▪ DIIA introduces and supports the Pachyderm Authoring System, a new multimedia authoring tool, for teaching and learning. ▪ DIIA investigates YouTube as a potential enterprise-wide distribution channel for instructional content. 	<ul style="list-style-type: none"> ▪ Web Central home page updated to integrate with the new OnCampus Calendar. ▪ Wireless predominates (3G/WiFi/24/7). ▪ August 23 – 1,000,000th download from BevoWare. ▪ August 31 – the university’s dial-up service, Telesys, is retired. ▪ ITS offers new campus-wide printing service. ▪ December 5 – Blackboard’s busiest day with 73,585 logins, a 26% increase over the old record of 57,999 on October 3, 2006. 	<ul style="list-style-type: none"> ▪ Motives are changing for malware developers. It is now easier and more lucrative simply to steal money and information from users. ▪ iPhone released. ▪ April 30 – Manufacturer support for Eudora e-mail ends. ▪ October 26 – Launch of Mac OS X 10.5 (Leopard).

Year	IT on Campus	Research, Teaching, and Learning	Campus Life	Technology News
2008	<ul style="list-style-type: none"> ▪ February – The ISO and ITS launch Application Registry to catalog software and Web-based applications written by UT staff. ▪ August 5 – 936,000 new EIDs have been created since 2006. This is a 28% increase in the EID population in only 2 years. ▪ Encryption services for laptops, e-mail, and central storage offered. ▪ June – UTForge launched to allow software developers on campus to store and share source code they write. ▪ ITS offers Exchange e-mail at no cost to faculty and staff. ▪ SANS Training offered to campus technical staff. ▪ 3,000 wireless access points by the end of the year. 	<ul style="list-style-type: none"> ▪ Continuing Education begins providing distance education courses to college-level students in Blackboard. ▪ Continuing Education provides credit-by-exam online grading service to public schools. ▪ SafeAssign chosen and implemented as plagiarism detection tool for campus. ▪ First eBook initiative begins. ▪ DIIA begins immersive media research on techniques that work best for making immersive imagery, 3D imaging and mobile computing media accessible and flexible for incorporating into teaching. ▪ DIIA investigates the potential of neogeography tools that can merge the power of spatial analysis with various geo-tagged multimedia for teaching and learning. 	<ul style="list-style-type: none"> ▪ UTOPIA retired. ▪ The University launches a pilot project for blogs and wikis. ▪ AT&T becomes first mobile carrier to sign up with NextG, the vendor selected by the university to build and operate a Distributed Antenna System (DAS) throughout the Forty Acres. ▪ Usenet news reading and posting services retired. ▪ September – Green IT@UT initiative launched 	<ul style="list-style-type: none"> ▪ Apple releases iPhone 2.0 software that allows university users to access: <ul style="list-style-type: none"> - restricted.utexas.edu connectivity - Austin Exchange Messaging Service support - Ability to receive digitally signed e-mails
2009		<ul style="list-style-type: none"> ▪ Continuing Education develops management software for Osher Lifelong Learning Institute; deployment pending. ▪ Approximately 400 general-purpose and departmental classrooms are now equipped with standard consoles or similar systems. Over 50 labs and conference rooms use systems similar to the standard classroom model. ▪ DIIA organizes the first Horizon Report Executive Briefing to look at the metatrends in technology that promise significant instructional impact in education. 		

Sources

The following people and Web sites provided information used in compiling this timeline:

Source	Name
People:	William Bard Senior Lecturer, MS Department of Electrical & Computer Engineering, Cockrell School of Engineering
	Cameron Beasley UT Information Security Officer, BSCHE Information Security Office
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	James Stolpa Senior Systems Analyst, BBA Information Technology Services
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	Joe TenBarge Assistant Dean, BA College of Liberal Arts
Web sites:	Computer History Museum http://www.computerhistory.org/
	TeamWeb History http://www.utexas.edu/teamweb/history.html