

# University of Wisconsin-Green Bay

## Technology Plan 2010

### Table of Contents

Introduction to the Technology Planning Process.....	2
Purpose of the Technology Plan.....	2
Technology Planning Principles.....	3
Current Technology Environment.....	4
Infrastructure	
Instructional Technology	
Information & Transaction Systems	
Policy Development.....	10
Funding for Information Technology.....	11
Lessons from the Campus Survey.....	12
Current Trends & Future Directions in Higher Education.....	13
Academic Support	
Information & Transaction Systems	
Infrastructure	
Objectives through 2010.....	17
Faculty/Staff Investment: helping people make better use of technology	
Technology Investment: maintaining and enhancing usability of systems	
Technology Investment: new initiatives	

## **Introduction to the Technology Planning Process**

The first comprehensive campus-wide technology plan, *Technology for the 21<sup>st</sup> Century: a Framework for Planning* was developed by the Technology Council with input from faculty, staff and students through surveys and open forums. The comprehensive plan was approved by the Chancellor's Resource and Planning Council in April 1998. Subsequently, the Information Services Division developed the *IT 2000 Action Plan* with specific objectives for the period 1998 through 2000 focusing on four strategic directions:

- Replacing and reconfiguring the campus network system
- Replacing the library management system
- Upgrading the database management system for student information
- Automating critical business functions

All the objectives of *IT 2000* were completed by fall 2000 and a new plan, *IT 2005 Action Plan* was developed for 2001-2005 with the following objectives:

- Supporting the use of technology in teaching
- Keeping current on server and desktop hardware, software and operating systems
- Implementing PeopleSoft Student Information and Shared Financial Systems
- Developing plans for web services, distance education, networking and document imaging

With the *IT 2005 Action Plan* nearing completion the Technology Council decided to make technology planning a focus for the 2004/05 academic year with the goal of creating a new plan to guide technology development over the next five years. In anticipation of this planning effort, the Council sponsored web surveys in April 2004 to gather input from faculty, staff and students regarding their satisfaction with current technology and what they perceive as future technology needs. During the fall semester 2004 the Council presented the draft technology plan to the campus community soliciting feedback through meetings with governance groups, open forums and focus groups. The process culminates with the publication of *UWGB Technology Plan 2010*.

## **Purpose of the Technology Plan**

Technology is a critical part of the day-to-day operations of the university and is used to enhance student learning, support the preservation, creation and transmission of knowledge and support campus management functions. The purpose of the technology plan is to guide the ongoing development and evolution of technology in support of the campus mission and strategic directions. Faculty, staff and student input is sought in the development and implementation of the technology plan. Technology planning is a collaborative effort to ensure that resources are used wisely to achieve equitable access to information technology for the good of the whole university community. Beyond equitable access, the technology plan should be aligned with university strategic directions. When new technologies are considered, they must be evaluated relative to how they support the campus mission and strategic directions.

## Technology Planning Principles

Given the limited financial and human resources available to the university the following principles are used when acquiring and implementing hardware, software applications, data bases, academic and administrative systems.

**Adherence to standards.** The campus is committed to adopting common tools that ensure resources are used wisely to achieve equitable access to information technology for all students, faculty and staff. Adherence to these standards benefits the university community in the following ways:

- Reduces the complexity of support and improves service to users;
- Enables a shared knowledge base across campus that facilitates collaboration;
- Allows for sharing electronic documents without the added burden of converting formats, thus, saving time for users;
- Allows users to confidently go from one computer to another knowing how to use the applications;
- Reduces down time for repair and overhead costs;
- Improves the overall reliability and availability of computing applications;
- Reduces the total cost of ownership

Whenever possible the campus should adopt software that is compatible with higher education and/or industry standards. Through the use of standard Application Program Interfaces (APIs) different systems can communicate and share data in the best interest of serving students and enhancing productivity.

**Use of integrated groupware.** By using integrated groupware users can easily move information and data among applications and between departments to improve collaboration, communication, and efficiency.

**Use of a central core database.** A central core database managed by data custodians ensures data integrity, data security and protection of privacy. The core database is also used to feed other systems to improve efficiency and reliability, reduce staff workload and enhance communication within the university community.

**Assessment of financial and human resources.** When considering acquisition or implementation of a new technology it is important to evaluate the budget and staffing resources needed in relation to the anticipated benefits. Start-up costs associated with a particular information technology as well as continuing costs should always be incorporated into the planning and budget for technology projects.

## Current Technology Environment

An environmental scan of campus technology reveals a complex array of systems and services that fall into three broad categories: infrastructure, instructional technology, and, information /transaction systems.

**Infrastructure.** UWGB's philosophy of end-to-end networking provides universal access and common technology tools for all faculty, staff and students. This comprehensive support model enables faculty, staff and students to focus on their creative work and collaboration, rather than spending time trying to get the technology to work. Computing and Information Technology (CIT) staff are responsible for managing the network topology, operating systems, and desktop applications. Before deploying any new technology CIT staff engage in extensive market research, technical evaluation, development and testing of software to ensure that all systems integrate and function in a highly reliable manner.

Technology Infrastructure includes:

- Switched and Routed Network Backbone including:
  - Gigabit Ethernet service to most campus buildings
  - 100 megabit switched fast Ethernet service to the desktop
  - Core network data switch with advanced layer 2, 3, and 4 capabilities
  - Multiple virtual local area networks (VLAN's) to optimize network traffic and maintain network security.
  - 2500 active network data jacks in the campus network
  - 2100 active network data jacks in the residence life network
  - HP Openview for network monitoring
  - Servers Alive for network status monitoring and reporting
- Wireless network in MAC Hall winter garden, ES-114, and General Access Lab.
- Server infrastructure including:
  - 8 File, print, backup, and web servers
  - 5 Electronic mail servers
  - 6 Core desktop software support servers
  - 3 Directory servers
  - 4 Network support servers
  - 12 Peoplesoft SIS servers
  - 9 Departmental application servers
  - 3 Firewall servers
  - 5 test and development servers
- Checkpoint Firewall providing:
  - Advanced stateful packet filtering
  - Bandwidth management
  - Wireless and Open access network user authentication
  - Virtual Private Network (VPN) services
  - Rudimentary intrusion detection capabilities
- Security infrastructure including:
  - Desktop, server, and electronic mail anti-virus products

- Anti-spam electronic mail software
- Automatic rollout of anti-virus software updates to desktop PC's and servers

Desktop Support includes:

- Windows or Macintosh computers replaced every three to four years
- Standard image for core software\*
- Anti-virus, intrusion prevention, and basic malware detection/removal
- Automated software update and patching
- Help Desk services
- Training on operating systems and applications

\*core software includes: Office 2003 (Word, Excel, PowerPoint, Access) Outlook email and calendar 2003, Internet Explorer (V6.0) McAfee Virus Scan (V8.0i) MS PhotoDraw, MS Publisher, MS Frontpage, MS Visual Studio .NET, MS Visio 2003, MS Project 2003, SAS, SPSS, MS MediaPlayer, QuickTime, Powerterm, Winzip, WinFTP)

**Instructional Technology.** Information Services provides a broad range of technology services in support of the academic mission, including: classroom technology, computer labs, library content, online learning software, and instructional design assistance.

Classroom technology. UWGB has 67 computer/video projection systems across campus. Of these, 41 are installed in hi-tech classrooms. Most of these classrooms also have: video and sound systems for VHS, CD ROM and DVDs media; slide projectors; and, electronic overhead units for displaying three dimensional objects, book/journal pages, or transparencies. Every effort is made to assign hi-tech classrooms to faculty who use instructional technology in their teaching; however, this is not always possible due to the high demand. The Media Services Department delivers instructional technology to classrooms as needed to mitigate the shortage of hi-tech classrooms.

Student Computer Labs. In the mid 1990's UW System established a goal for campuses to provide one computer for every 25 students in a general access computing lab that would be open to all students a minimum of 80 hours per week. UWGB has exceeded this goal and currently provides one computer for every 21 students through two general access computing labs. There are 202 student workstations in the IS computer lab, which is open 100 hours per week, and 54 workstations in the Library, which is open 87.5 hours per week. The IS general access computing lab also has four student project rooms each equipped with 2 PCs, a scanner, and video editing equipment and software. The Library has four student project rooms equipped with a standard student lab PC. The campus also maintains 15 specialized instructional computer labs that are tied to academic disciplines and open to students enrolled in those disciplines 20 to 40 hours per week. The Computer Science program has its own lab with key card access for students majoring in Computer Science. The Technology Council provides oversight on the creation and decommissioning of specialized labs. Workstations in these labs are funded by the Lab/Classroom Modernization Fund.

Library technology. The Library provides extensive instructional technology support with more than 100 electronic databases, 3,500 e-journals, 10,000 e-books and 15,000 cataloged web pages. The library delivers this content to the desktop along with services such as e-reserves, e-reference, e-interlibrary loan and digitized archive collections. Through consortiums with UW libraries, private academic libraries and public libraries, UWGB students, faculty and staff have access to the collective resources of Wisconsin and beyond. Librarians organize digital resources on the web to assist students, faculty and staff with their research and also provide individual research assistance in person, over the phone, through e-mail, and online chat sessions.

Faculty support. The Learning Technology Center (LTC) exists to help faculty and staff integrate technology in the teaching and learning process. To this end, it acts as a clearing house for instructional technology information and training opportunities, showcases new technologies, and assists faculty and staff in developing technology expertise. LTC staff provide pedagogical and technical advice on technologies such as digital imaging, web page development, presentation software, electronic discussions, scanning, courseware and multimedia software. The LTC offers primary support for the Desire2Learn course management system, which is used by more than 50% of the faculty and students.

**Information and transaction systems.** The university has implemented a dozen information and transaction systems since 1998 transforming the way the campus engages in educational and business processes. Listed below are the major systems implemented along with a brief explanation of their purpose and use.

- Web site development & redesign 1998, 2002, 2004
- Blackboard transaction system 1998
- Shared Financial System 1999
- Library Voyager System 1999, 2000
- Library E-Reserves 2001
- Library Universal Borrower 2002
- TMA – Facilities Maintenance 2002
- SimplexGrinnel – Fire & Security 2002
- Student Information System 2002, 2003
- Residential Management System 2003
- Event Management Systems 2003
- Ad Astra classroom scheduling 2003
- Kronos TimeKeeping 2003
- QuickBooks – Receivable & Billing 2003
- ImageNow document imaging 2003
- Desire2Learn course management 2004
- On-Line Campus Keys Program 2004
- FleetAnywhere – Fleet Management 2005
- Lawson – Human Resources Pending

The campus web site has become a key information and transaction system with more than two million unique visitors and a half million repeat visitors each year accessing more than 140 million files. The first comprehensive analysis of the campus web site occurred in 1997 and a major redesign was completed in 1998. The explosion of content coupled with the migration of applications (Library, email, SIS) from a client-server environment to a fully web-enabled environment necessitated a major redesign of the campus web in 2002. The new front page incorporated news items, promotions of campus events, role-based searching, subject searching, and a new search engine. The much improved design and navigation earned UWGB a “Web Site of the Week” award by EDUCAUSE in the summer of 2003. The campus web site was modified again in 2004 to accommodate new web-based transaction systems, to improve visibility for adult learning programs, and to promote the campus strategic initiative of “Connecting Learning to Life.” A Web Advisory Committee composed of constituent groups assists with ongoing evaluation of the web site to ensure that it adapts to changing content and web services over time.

The Blackboard transaction system serves the campus community as the Passport ID system. Managed by the University Union, the Blackboard system provides financial, card door access and campus identification. The Passport ID card is used campus wide to purchase meals, merchandise in the Phoenix Bookstore, produce copies in the Library, print from any campus computer lab and provides door access to several campus buildings.

The Shared Financial System (PeopleSoft SFS) is a client-based financial management system, which includes modules for General Ledger, Purchasing, Accounts Payable and Asset Management. The centralized database is hosted on the Madison campus while the SFS client software resides on campus workstations. Access to the transaction system and the WISDM data mart allows campus staff to directly monitor their budgets.

The Library Voyager System is a web-based system administered by Cofrin library staff on a shared platform located in Madison. This system provides an online catalog, check-out services, acquisitions, interlibrary loan and a media services module. The Voyager system integrates print collections with online full text resources, electronic reserves and external databases. The more recent addition of Universal Borrower allows students and faculty to remotely check-out materials from other campuses and have them delivered here for their use.

TMA – Facilities Maintenance is a full featured software product used by the campus facilities management personnel. The TMA system provides inventory tracking for the campus operations staff, scheduling of equipment, preventive maintenance for physical plant staff, and management of campus work orders for Maintenance, Operations, the University Union and Residence Life. TMA also provides cost and billing analysis for all Facilities Management areas.

SimplexGrinnel Security and Fire system is installed throughout campus. The Simplex security software is managed by the Public Safety staff. Simplex software and hardware provide security to campus buildings, classrooms and elevators with card access and automatic door locking.

The Student Information System (PeopleSoft SIS) represents the central core database for our students, faculty and staff. This web-based system is housed on campus and includes the following modules: Admissions, Advising, Financial Aid, Records/Registration, Student Financials, and Grade Book. Faculty use this system for viewing class rosters, advising students, managing grades, and submitting final grades. Students have access to their class schedule, transcript, degree progress, financial aid awards and their integrated student financial account. UW-Green Bay is one of 10 UW institutions using PeopleSoft SIS.

The Residential Management System (RMS) is a client-based system for managing housing applications and room assignments for the residence halls. Student housing charges are produced and managed in the RMS system and then exported to the PeopleSoft SIS integrated student financial account. The RMS system is jointly managed by Residence Life and CIT and has recently been updated to a web-based version, which will allow for more self-service applications for students.

The Event Management System (EMS) manages campus facilities usage, room reservations and presents a web-based Campus Calendar of Events. Managed by central reservations in the University Union, the EMS system includes both client and web based systems. The web-based system functions as the Campus Calendar of Events and provides self-service to selected campus users for reserving campus space. In addition, the EMS system tracks room usage, rental charges and provides a reporting system to track current facility usage and project future space needs.

The Ad Astra System is integrated with the SIS system and is used to assign classrooms based on criteria established by the Registrar Office. Main criteria for assigning classes are: size of class and technology needed. Plans are underway to improve the sophistication of the database to allow faculty to specify type of technology and even room configuration to better serve the instructors' teaching style.

Kronos TimeKeeping system is a web-based application managed by the UW Processing Center in Madison. The application is used by all UW campuses as a means of electronically managing student employees' time. In 2003, the web version of Kronos became available to all UW campuses. UW-Green Bay was an early adopter of the Kronos system as we had been using the client version in the University Union since 2000. We have successfully implemented the web version of Kronos campus wide, with approximately 90% of the campus student employees using this automated time keeping system.

QuickBooks Accounts Receivable and Billing application is used campus wide to administer and process all campus related invoicing. The Controller's Office functionally

manages the QuickBooks system, produces and mails all campus invoices. Campus departments and student organizations use QuickBooks to enter the charges and billing information.

ImageNow is a document imaging system that was acquired by the Financial Aid Office with the goal of becoming a paperless office. ImageNow is the campus standard for document imaging systems and today the system is also being used for student records, purchasing and accounts receivable.

Desire2Learn (D2L) course management system supports fully web-based courses as well as providing an opportunity for faculty to enhance their face-to-face classes with interactive online learning opportunities. Faculty can post content, receive student projects, facilitate discussion groups, and manage grades using D2L. The database is managed by the Learn@UW Utility in Madison.

On-Line Campus Key Request application was an initiative focused on streamlining and building efficiencies into the campus key request practices. The overall design of the system provides a web-based request form that is supported by an intricate database. The campus community gains access to the Key Request form through the Public Safety website and all necessary key request approvals are automatically routed via Outlook email messages. The database is managed by the Public Safety staff and key production and chargebacks are handled by the Facilities Management staff.

FleetAnywhere system is the result of a statewide initiative that will require all State agencies to participate in a fleet management database maintained by the Department of Administration. Business requirements based on all major functional areas of fleet management and necessary training materials are being developed. A project plan for testing and implementation will be addressed prior to calendar year-end.

Lawson Human Resources Information System (HRIS) planning and implementation began in 1998. UW-System charged the Best Business Practices sub-committee with researching a multi-campus university system for Appointments, Payroll and Staff Benefits (APBS). A contract was signed with the Lawson Software company in 2001. Since that time, the APBS Core Team has been instrumental in working through the implementation, scope and planning, involving all UW campuses. The Lawson HRIS system will increase functionality and efficiency, streamline processing tasks and improve data accuracy and reporting.

## **Policy Development**

The Technology Council is responsible for the development and oversight of policies relative to the use of technology by faculty, staff and students. Some policies are developed to ensure the equitable use of technology across campus, and others are developed at the direction of Federal or State agencies. Policies developed by the Technology Council are made available to the campus community for review during the development phase and are reviewed by campus governance groups prior to final approval by the Chancellor's cabinet. The Technology Council reviews policies from time to time to determine if the policy is still fulfilling its purpose and meeting the needs of the campus. The following policies have been adopted by the Technology Council since 1998 and are published on the web.

- Acceptable Use Policy for Technology & the Internet
- Computer Workstation Replacement
- E-mail Policy & Guidelines, Distribution List
- Information Security Program
- Web Site Policies & Procedures

## Funding for Information Technology

There are several sources of funding for technology: general program revenue, program revenue, charge-backs, student fees, grants and grant overhead, contracts, and gifts. General program revenue (GPR) is by far the largest source of funding for the campus and is used to fund the campus infrastructure including network backbone, firewall, servers, faculty/staff desktops and instructor workstations in classrooms. Campus-wide applications such as email, office applications, SIS, and library systems are included as part of basic IT services. The campus administration allocates funds to the Information Services Division to support these basic IT services for GPR-based units. Program revenue units must pay for their hardware, software and network services through a charge-back from CIT. The annual charge-back per workstation covers costs of software licenses, central server space, security protection, Help Desk services, and training. CIT orders replacement workstations for PR units every three years and charges the units at the time of purchase. Peripheral equipment, such as printers, scanners, editing equipment, is purchased with unit funds and ordered through CIT.

The campus receives ear-marked funds from UW System to support special technology initiatives. These funds were acquired through special legislation and must be monitored for appropriate use.

- General Access Funds for student general access computing lab
- Lab/Classroom Modernization Funds for equipment used by students in classroom/lab settings, about 50% is allocated annually for special instructional computer labs.
- Student Technology Fee is about 2% of tuition and must be used for student technology that benefits all students

Grants, grant overhead dollars, contracts and gifts have all been used by individuals and departments to purchase hardware and software. This source of funding is not ideal because most grants and gifts are one-time revenue sources and computer technology needs to be replaced periodically.

## Lessons from the Campus Survey

In spring 2004 the Technology Council sponsored a web-based survey of the faculty, staff and students to determine their degree of satisfaction with current technology, to listen to their suggestions about how to make technology better, and to solicit their views about future technology. There were 326 responses to the faculty/staff survey (about evenly divided among faculty, academic staff and classified staff) and 814 responses to the student survey (one-third from seniors and the rest nearly evenly divided among freshman, sophomores and juniors). The Council concluded that response ratings of 2.4 or better (on a 3 point scale) were indicative of general satisfaction and response rates less than 2.4 indicated areas of weakness that should be addressed.

The data show there is general satisfaction with desktop applications, CIT Help Desk, the LTC and Desire to Learn, all of which received a 2.4 rating or higher. While librarians received a high rating for their helpfulness, the library systems were rated 2.2—below our cut off point for satisfaction. The SIS system fared worse with ratings in the 1.8 to 2.1 range. The systems with the lowest ratings have received immediate attention for improvement. In classroom technology, good ratings were received for D2L, projection systems and VCRs, while lighting systems and whiteboards need attention.

In response to a question about the importance of various future technologies faculty/staff rated the following as most important:

- Laptop hookup
- Campus portal
- E-commerce
- Wireless network

In response to a question about the importance of various future technologies students rated the following as most important:

- Pay parking fees online
- Pay tuition/fees online
- Wireless Laptop hookups
- Wired laptop hookups

## Current Trends & Future Directions in Higher Education

### Academic Support

e-learning/Distributed Teaching and Learning. Student and faculty interest in online learning opportunities has continued to grow over the past five years. Across the UW System usage of online learning systems has grown from 16,000 enrollments in 1999 to over 300,000 enrollments in 2004. On the Green Bay campus about 50% of faculty and students are using online learning tools. The campus is well positioned to support the expansion of online learning through the Learning Technology Center staff and the Desire2Learn course management system. Published research indicates that fully online learning is as good as traditional classroom learning, and, blended learning (a combination of face-to-face and online) is superior to either just online or just traditional face-to-face instruction. Listed below are some areas that should be addressed in the technology plan:

- faculty development
- course management systems
- repositories
- intellectual property
- video over IP
- Streaming audio/video

Instructional Technology. Technologies that support learning inside and outside the classroom continue to evolve. The following tools and issues are part of this evolution:.

- Portfolios
- “smart” classrooms
- Course management systems
- e-grading
- intellectual property, copyright, plagiarism
- digitizing content (text, music, video, images)
- web page development
- differences in learning styles (gaming, video, text messaging, etc.)
- online student work groups and discussion groups
- interactive, experiential learning online
- simulation technology, 3-d modeling
- tele-immersion technology

Research Computing Faculty are becoming more dependent on computer technology for their creative work. The Technology Plan should consider support for:

- keeping up with the literature
- communicating with colleagues across distance and time
- collaborating with colleagues (sharing files, critiques, discussion groups)
- advanced data modeling and computer applications

- accessing and interacting with live data systems at a distance
- transferring large data stores across the internet
- digital imaging
- online surveys
- additional workstations to run equipment and support specialized applications

Student Computing Today's students have used computers since kindergarten and tend to adapt quickly to new technologies. The Technology Plan should address the changing needs of students, including:

- Wireless network
- Laptop connections
- Kiosks
- Technology training
- Smartphones & other mobile devices
- Simulation and interactive instructional technology
- Online student services, including e-payments

## **Information & Transaction Systems**

Enterprise-Level Portals Many campuses have implemented portals as a way to integrate various information/administrative systems and to make it easier for students, faculty and staff to locate their personal information. Portals can integrate business functions, teaching and scholarship, public relations and promotions. Portals can also provide easy access to institutional repositories. Portals can facilitate:

- Managed signature entry point (single sign-on)
- Institutional branding and marketing
- Opportunity to customize
- Role-based security management
- Improved searching of the campus web and/or databases
- Organization of information content and resources
- Integration of various enterprise systems
- Push technology – push information out to campus users
- Personal information management tools
- Institutional repository

Information & Administrative Systems. The campus has more than a dozen enterprise systems and many additional departmental information/administrative systems. As much as possible these systems should be able to share name and address data to maintain accurate information about the UWGB community of users. Ideally, information about an individual should be stored in the central campus database (PeopleSoft Campus Community) with other campus systems using the data and updating it as appropriate. The central campus database will be updated with personnel information from the HRIS system managed by UW System. Local address information

and system privileges will be maintained in the central campus database. New information/administrative systems that could be considered are:

- library systems (e-reserves, e-books, e-journals, e-reference)
- electronic records management
- digital collections & assets
- archiving digital content
- online publishing
- preservation of the scholarly record
- asset management
- content management systems

Web Services/Web-based systems The campus web-site has evolved extensively over the past five years and will continue to change. A significant challenge will be integrating different applications with secure exchange of data over the Internet. The Technology Plan should address:

- Web services
- Content management systems
- ASP scripting
- Web development software (eg, Dreamweaver)
- E-commerce
- Middleware technology (portals, directory services, security)
- Portal technology
- Integration among different systems
- Messaging between systems
- Workflow notification

## **Infrastructure**

Infrastructure Management. IT infrastructure refers to the entire technology architecture that support student, faculty and staff computing activities on campus and from a distance. The IT infrastructure must also accommodate public access to the campus web site and its various information systems, where appropriate. Issues that must be addressed over the next five years include:

- Campus backbone: growth, capacity planning, hardware replacement, Quality of Service (QOS); layer 2 and 3 (switch and routing) networking at the edge, power over Ethernet (PEO) support, gigabit Ethernet to the desktop, 10 gigabit Ethernet in the backbone.
- Campus Fiber Plant: The current multimode fiber optic cable (installed in 1988) cannot carry data at speeds above one gigabit at distances greater than 250 meters. The fiber plant needs to be upgraded with single mode fiber optic cable that can transmit higher data rates at greater distances. The higher capacity will be required to provide network speeds needed to support current and new applications across the campus network.

- Internet: commercial internet, I2 (research apps and video) IPv6, redundant Internet gigapop access routes
- Network services: I1, I2, video-over-IP, voice-over-IP
- Campus and ResNet Data Switch Replacement: The current 3Com network switches installed in 1998 and 1999 will not be supported by the vendor beyond October, 2005 and must be replaced in the summer of 2005.
- Wireless data network services across campus and Residence Life areas

Security and Identity Management Making information available over the network increases access and efficiency, but also adds the risk of unauthorized access to or inappropriate use of information. The Technology Plan should address the following issues:

- Authentication/authorization policies and architecture
- Intrusion protection; firewalls, anti-virus, anti-spam
- Privacy protection: personal identifiable information
- Regulatory issues: FERPA, HIPAA, GLB, Patriot Act, DMCA
- Personnel changes relative to authorization
- Single sign-on
- Manage trust relationships
- Illegal file sharing and downloading
- Digital signature technology

## Objectives through 2010

Technology is a critical part of the day-to-day operations of the university and is used to enhance student learning, support the preservation, creation and transmission of knowledge and support campus management functions. The technology objectives must be designed to serve student learning and student development. Thus, the technology objectives must support the people who are hired to teach and provide academic and business services for the students. If we address the technology needs of the students, faculty and staff the campus will be better positioned to address the larger campus initiatives, such as connecting learning to life and community engagement.

The objectives for the campus IT plan were developed from information gathered between April and October, 2004 from the faculty, staff and students through web surveys, open forums and constituent group meetings. The objectives have been organized under three broad themes:

- Faculty/Staff Investment: helping people make better use of technology
- Technology Investment: maintaining and enhancing usability of current systems
- Technology Investment: new initiatives

The first theme focuses on people--assisting them to use our current technology more effectively. The second theme focuses on keeping up-to-date on hardware and software. The third theme challenges the campus to stretch a bit and explore new technologies.

The 40 objectives outlined in this strategic plan will guide technology development over the next five years. Some of these objectives are more critical than others. For example, some of the objectives are necessary to maintaining services for the students, while other objectives are more discretionary. In order for the campus to be successful in achieving these strategic objectives the Technology Council will develop an "action plan" for implementing the most critical objectives during 2005-2007. The Technology Council is responsible for annually assessing progress on the strategic plan.

### **1. Faculty/Staff Investment: helping people make better use of current technology.**

Throughout the process of gathering information the Technology Council heard faculty and staff say that they felt it was more important to use our current technology more effectively than to add more technology. As a result, this strategic plan has identified helping faculty and staff make better use of technology as the number one goal area. The objectives are organized by the learning environment and the work environment. Each of these objectives will require a multi-step approach with collaboration among all areas of the campus.

### Learning Environment

- 1.1 Provide faculty development opportunities on implementing technology in the classroom/curriculum that is adaptive to student learning styles (e.g. video, online discussion, group collaboration, text messaging, simulations and games, etc.)
- 1.2 Improve availability of hi-tech classrooms.
- 1.3 Improve reliability and usability of classroom technology.
- 1.4 Assist faculty in using technology tools to detect plagiarism.
- 1.5 Assist faculty with incorporating copyrighted material into course content.
- 1.6 Provide assistance for faculty who wish to expand use of electronic portfolios in the curriculum.
- 1.7 Support faculty experimentation with instructional software inside and outside the classroom environment.

### Work Environment

- 1.8 Provide opportunities for thinking about technology at a “meta-level.” Beyond navigating a system, how might we use technology to transform what we do?
- 1.9 Establish two “work groups” per year to discuss best practices with technology.
- 1.10 Provide opportunities for keeping up with the literature and technology practices in the field.
- 1.11 Provide opportunities for communicating and collaborating with colleagues across distance and time through file sharing, critiques, discussion groups, etc.

## **2. Technology Investment: maintaining and enhancing usability of current systems**

Keeping our technology up-to-date is also a high priority of the faculty, staff and students. This section of the strategic plan lists objectives that focus on technical upgrades and enhancements that either save people time, improve access or improve usability. The objectives are divided into three groups: learning environment, work environment and infrastructure. Many of the objectives fall within the Infrastructure group and most of these will be carried out by the Information Services staff.

### Learning Environment

- 2.1 Reduce data entry time for faculty by supporting electronic grading and transfer of grades between systems.
- 2.2 Increase electronic resources available to faculty for research.

### Work Environment

- 2.3 Improve functionality, usability, and access to information through web interfaces.
- 2.4 Coordinate strategies and infrastructure to manage, support and interface with centrally hosted administrative systems, including: deployment, training and troubleshooting

### Infrastructure

- 2.5 Maintain 2-3 year upgrade cycle for desktop software.
- 2.6 Maintain 3-4 year replacement cycle for desktop hardware.
- 2.7 Maintain classroom equipment, including repair or replacement of failing and outdated equipment, as well as evaluating new classroom technology.
- 2.8 Upgrade campus fiber optic cable plan with single mode fiber optic cabling that is capable of carrying higher bandwidth network services.
- 2.9 Upgrade campus backbone and ResNet on a 5 year cycle to support.
- 2.10 Maintain currency on all campus core and administrative software applications.
- 2.11 Maintain campus network server hardware and software.
- 2.12 Implement security protocols and policies.
- 2.13 Discourage illegal file sharing and downloading of copyrighted material.
- 2.14 Build infrastructure to integrate commonly used, centrally hosted applications on the core software image.
- 2.15 Expand wireless data networking technology

### **3. Technology Investment: New Initiatives**

It is important that the exploration of new initiatives include business case studies that show the value of the new initiatives relative to the campus mission and the cost. The value analysis should include such items as improving learning, improving access, reducing workload, improving business processes, improving efficiency, or improving effectiveness. The cost analysis should include the staff resources needed to implement and provide ongoing support, hardware and software costs, and potential savings that could be realized as a result of the initiative.

#### Learning Environment

- 3.1 Explore expansion of curriculum offerings through Distance Learning technology.
- 3.2 Explore repositories for faculty developed materials and sharable content.
- 3.3** Explore delivering video over the Internet, so that every classroom has the potential to be a distance learning classroom, and every network connection could be a conference center.
- 3.4 Explore digitizing content (text, music, video, images) to increase access to curricular materials for students and faculty.
- 3.5 Explore the use of new technologies in instruction, such as: simulation technology, 3-d modeling, tele-immersion technology, advanced data modeling and computer applications.
- 3.6 Research models for web surveys that can be used by students in a variety of courses.
- 3.7 Explore the degree of interest among the academic programs to pursue a laptop program for students/faculty.

#### Work & Service Environment

- 3.8 Develop a virtual student service center incorporating all student services in an online format.
- 3.9 Develop e-commerce applications to improve service to constituents and to increase opportunities for revenue growth.
- 3.10 Develop a recommendation regarding an Enterprise-Level Portal for the campus.
- 3.11 Explore the use of technology to improve communication with all constituents including the public.

- 3.12 Develop best practices for electronic records management, relative to retention of email, web documents and file-share documents.
- 3.13 Explore developing an e-journal to publish faculty/staff/student papers online.
- 3.14 Explore developing an electronic archive for preserving the scholarly record of UWGB faculty
- 3.15** Explore content management systems and work flow systems to improve overall efficiency of moving “paperwork” across campus.
- 3.16** Explore use of digital signature technology to support workflow and web-based transactions.
- 3.17** Explore the idea of a “digital freshman face book” to assist freshman in getting to know their classmates.