The University of Montana-Western
Technology Plan
August 15, 2003

- **Purpose**
- **Introduction**
- **Technology Philosophy**
- **Statement of Intent**
- **Procedures**
- **Information Technology Goals**
- **Appendix**
  - **Appendix 1 Information Technology Resources**
  - **Appendix 2 Definitions**
  - **Appendix 3 Information Technology Objectives & Accomplishments by Academic Year**

Purpose

In order to assure compatible technology systems on campus and avoid unnecessary duplication and waste, Western needs coordination of all technology efforts campus-wide, regardless of budget, department, and intention. This document serves as the first stop for all decision makers on campus if they have a technology component to their efforts. Coordination of these academic or administrative efforts is critical and must involve the Technology Steering Committee (TSC).

Introduction

Western has a robust and comprehensive technology program. However, the acquisition of technology on campus and its planned use has been limited to particular needs or circumstances. As Western continues to acquire computers and other technology, unifying these efforts would be advantageous for all. The goals here include research, increased communication, and prioritization of initiatives in order to allow decision-making with regard to the most appropriate timing for technology adoption and implementation.

This plan is designed to increase communication and provide an opportunity for all members of the campus community to share expertise, vision, and concerns to help unify Western's technological evolution. This plan outlines direction and mandates technology coordination via the TSC.

Technology Philosophy

Western encourages ethical, user-friendly, and equitable technology environments.

Western has a commitment to its students and faculty to enhance their ability to learn and instruct.

Students will enter Western with increasingly sophisticated knowledge and awareness of technology.

In order to be prepared for the work place or further study, students will require increasingly sophisticated knowledge of technology.

Expanded utilization of technology creates the need for increased infrastructure and bandwidth.

The curricular adoption of appropriate technology is necessary to remain competitive in higher education.

There is a logical sequence of adoption for many new technologies.

Any acquisition of technology systems must include a workable, realistic plan for maintenance, training, support, and replacement.

Implementing technology implies a financial commitment by the University, and the benefit of that implementation must be weighed against its cost. There will always be a limited amount of funding and consequently a need for choosing the best use of funds for technology. The larger decisions should be made in keeping with the institution's stated priorities.

Statement of Intent

The purpose of this plan is to encourage appropriate campus-wide use of technology. Each of these decisions with regard to technology involves budgets, departments, and connectivity. In order for the campus to take full advantage of the benefits of selected technologies, there must be consideration of infrastructure, long-term use, support, and replacement with every major decision.

The plan must be seen as a living document, given that the advance of technology impacts the campus and culture in ways that are often predictable but rapid. This Technology Plan will be revisited formally on a yearly basis by the TSC to identify areas of weakness, absence, or change and will be modified accordingly.

This plan defines terms and prescribes the proper procedures for adoption of new technology and the expansion of existing technologies. It is critical that all parties impacted by this plan understand that the intent of this document and the function of the TSC are to encourage best practice technology use in education. The intent of this plan is to provide support for academic use of technologies rather than to govern that use.

The Technology Plan was developed with an awareness of current practice and the evolution of technologies as they impact education and culture in general. The plan will reference other documents that are more detailed and specific (many in appendix). The TSC will be charged with the interpretation and enforcement of the plan. There will be timely discussion and recommendations made on all topics brought before the TSC.

Procedures

The TSC coordinates information technology planning and acquisition on campus. The TSC will prepare annual campus information technology goals that will guide decisions on changes and purchases for the coming fiscal year. Any proposed changes or purchases that affect technology on campus must be coordinated through the TSC.

1. All guidelines, policies, and procedures regarding information technology on campus will be reviewed by the TSC. Proposed changes of guidelines, policies, and procedures should be forwarded to Cathi Love in the Administration & Finance Office.

2. Purchases of standard technology must be reviewed and approved based on supported systems guidelines and purchasing guidelines (see Appendix 1). All requests should be initially submitted to ITS. If appropriate, ITS may forward requests to the TSC for review and approval. Large acquisitions may be categorized as new technology.

3. Acquisition of new technology must be submitted to the TSC via ITS. The TSC will decide in a timely manner to approve, disapprove, or recommend that alternatives be looked at.

   Proposals must be based on supported systems guidelines and purchasing guidelines and must include the following:

   a) Description of the project, including rationale and implementation.

   b) Plan for acquisition, renewal, replacement, and support.

4. All grant applications that include a technology component must be reviewed by ITS (and forwarded to the TSC, if appropriate) prior to submission to determine whether proposed standard or new technology purchases fit within the current campus technology framework.

5. The Student Computer Fee Committee and the Equipment Fee Committee must follow the procedures outlined in this plan. An annual report must be provided to the TSC by the respective budget managers at fiscal year end summarizing purchases made during that year from the Student Computer Fee, Equipment Fee, and Technology Fee accounts.

6. The TSC will meet on a standard weekly basis. Submit agenda items to Cathi Love in Administration & Finance. There may be a minimum of two weeks to accommodate requests to be placed on the agenda.

Information Technology Goals

Provide an environment that enhances access to both on and off campus resources for faculty, students, and staff.

Enhance the academic programs of the campus by providing appropriate technology for teaching and learning.

Improve quality and assist in reducing the cost of campus administration and business operations.

Protect and enhance the campus information technology infrastructure through security services, appropriate planning, and policies.

See Appendix 3 for Current Academic Year Technology Objectives as they relate to these Information Technology Goals.

Minutes of Technology Steering Committee meetings are available at Western's website: http://www.umwestern.edu/Administration/committees/index.htm

APPENDIX 1

Information Technology Resources

Western's Web Policy:

http://hal.umwestern.edu/administration/its/page5.htm

ITS Supported Systems:

http://hal.umwestern.edu/administration/its/pge4.htm

Campus Accounts and System Access:

http://hal.umwestern.edu/administration/its/page2.htm

Acceptable Use Policy:

http://hal.umwestern.edu/campusinfo/policymanual/policies/500.1_Acceptable_Use_Policy_ITS.pdf

IT Purchasing:

http://www.umwestern.edu/administration/business/purchpolicy1.pdf

APPENDIX 2

Technology Plan Definitions

Items to be brought to the TSC for consideration include any new types of technology, and any technology that has the potential for impacting large segments of campus or that will require significant support.

- **Technology** - Those electronic items and their component parts and software used to assist with productivity, including communication presentation, data entry, manipulation, capture, and storage, and their overall connectivity.

- **Standard Technology** - Laptops, projectors, scanners, network printers, Intel, or Apple desktops.

- **New Technology** - Different or existing technologies that have a broad impact on the current infrastructure.

- **The Local Area Network** (LAN) - Wiring, switches, hubs, servers, and the applications that support them. The LAN and its wide area network connections are the fundamental starting place for 90% of the discussions about technology on campus.

- **Voice Telecommunications System** – The central telephone system for the campus.

- **Internet Protocol (IP) Video and Teleconferencing** – Technology that includes receiving or transmitting video and/or audio.

- **Individual Central Processing Units (CPU's) -** Two types of devices tied to the LAN: campus-owned computers that are closely coupled to services provided on campus and other devices that do not have full access to campus services. Any device connected to the campus infrastructure is of interest to the TSC as it has the potential to impact services on the network. These break down into the following categories of use and user:

    - Student access site computers
    - Student access laboratory computers
    - Personal-owned computers connected to the LAN
    - Faculty office computers
    - Faculty access lab/class lectern stations
    - Administrative computers
    - Laptops (guests or students with wireless connections)
    - Additional devices (PDA's)

- **Networked Peripherals** - Group-use printers, copiers, and scanners. These are fundamental to the day-in-and-out operation of any institution, and it is important that these be purchased and maintained in keeping with these guidelines.

- **Peripherals** - Printers and scanners. These fall outside the main focus of the Technology Plan individually, but impact the resources of the campus as a group, since consumables are best purchased in bulk and the maintenance/replacement/ retirement considerations should be in keeping with overall campus policies.

- **Presentation Equipment** - Video projectors, touch-sensitive boards, presentation-specific monitors, and stations. These are important and often expensive components to the higher education landscape and must be part of the larger plan in terms of purchasing uniformity, service, and replacement schedules.

- **Non-Digital Presentation Equipment** -Slide & film projectors, VCR's, and overheads. These are not addressed by this document.

- **Miscellaneous Equipment** - Digital capture devices including still and video, as well as audio/video and broadband players. This includes technologies for exploration of the web.

APPENDIX 3

Information Technology Objectives & Accomplishments By Academic Year

ITS Objectives for 2001-2002:

1. Provide an environment that enhances access to both on and off campus resources for faculty, students, and staff.
2. Enhance the academic programs of the campus by providing appropriate technology for teaching and learning.
3. Improve quality and assist in reducing the cost of campus administration and business operations.
4. Protect and enhance the campus information technology infrastructure through security services, appropriate planning, and policies.

2001-2002 Goals By Objective(s) Addressed

Goals 2,3: Rewire Main Hall (complete, data implemented, telephone to be implemented 2002-2003)

Goals 1,2,3: Revamp Load Distribution on the Server Farm (working)

Goals 2,3: Implement Banner 5.0 (done)

Goal 3: Complete Phase I on Telephone Switch Upgrade (done)

Goal 1: Evaluate and implement new Email Server Application (evaluated, not implemented)

Goals 1,3: Enhance Interactivity of Campus WEB (done)

Goal 3: Replace Node WMC (done)

Goal 3: Phase out Student Long Distance (done)

Goals 2,4: Implement phone and data infrastructure in RETC (done)

ITS Objectives for 2002-2003:

1. Provide an environment that enhances access to both on and off campus resources for faculty, students, and staff.
2. Enhance the academic programs of the campus by providing appropriate technology for teaching and learning.
3. Improve quality and assist in reducing the cost of campus administration and business operations.
4. Protect and enhance the campus information technology infrastructure through security services, appropriate planning, and policies.

2002-2003 Goals by Objective(s)Addressed

Objective 1: Implement IMAP Email Server for campus Email.
Objectives 2,3: Complete fiber-optic ATM connection to campus
Objective 4: Implement secure connectivity between Banner Student and Oracle Application Server
Objective 4: Implement secure connectivity between HTML clients and Oracle Application Server.
Objectives 2,4: Convert all student labs to work via NAT server.
Objectives 2,4: Complete integration of centralized campus-wide anti-virus system.
Objective 3: Convert telephone connectivity in Old Main to new infrastructure.
Objective 3: Continue to generate advertising CD's as needed.
Objective 3: Implement new quota system.
Objectives 3,4: Recruit Desktop Support Analyst

ITS Objectives for 2003-04:

1. Provide an environment that enhances access to both on and off campus resources for faculty, students, and staff.
   - Long Range Plan for METNET (completed plan)
   - Rewire Mathews Hall for phone, data, and fire alarms (completed)

2. Enhance the academic programs of the campus by providing appropriate technology for teaching and learning.

   - WebCT Implementation (completed)
   - Set up wireless network in SUB (completed)
   - Purchase 3 classroom media carts (completed)

3. Improve quality and assist in reducing the cost of campus administration and business operations.

   - Solutions to Printer/Copier Issues (ongoing)
   - Coordination of Grant/Budget Issues (completed)

4. Protect and enhance the campus information technology infrastructure through security services, appropriate planning, and policies.

   - Disk Quota Policy (completed)
   - Network Security Issues (completed)
   - Acceptable Use Issues (completed)

ITS Objectives for 2004-05:

- Provide an environment that enhances access to both on and off campus resources for faculty, students, and staff.
  - o Upgraded METNET compressed video system to H.323
  - o Increase off campus WAN connections to 12 Mbps
- Enhance the academic programs of the campus by providing appropriate technology for teaching and learning.
- Implement wireless lab (completed)
- Improve quality and assist in reducing the cost of campus administration and business operations.
  - o Solutions to Printer/Copier Issues (ongoing)
  - o Web-based credit card payments
  - o Banner Web for Prospects
- Protect and enhance the campus information technology infrastructure through security services, appropriate planning, and policies.
- Internal numbering scheme for IP addresses

ITS Objectives for 2005-2006:

- Test Internet Native Banner on Banner 7.0
- Implement enhanced core network
- Implement enhanced network monitoring
- Investigate and implement Banner Web for Admissions
- Credit card payment
- Wireless Access
- Enhanced support of Guide Dawgs

ITS Objectives for 2006-2007:

- Initiate wireless access on campus by implementing access in Main Hall (in Test)
- Evaluate running Oracle Server on Linux in preparation for replacement of node Arden (Complete)
- Work with Marketing to transition the Web to new look/architecture (No progress)
- Convert supported Email client to Outlook (Working, see Goal Progress)
- Evaluate upgrade of WebCT to 6.0. (See Goal Progress)
- Increase office organization & efficiency via streamlining processes and reevaluation and re-implementing the BANNER Financial Aid module. (Financial Aid complete, rest ongoing)
- Continue to automate process with a goal of looking at SAP and Alaska Loan Certifications this year. (SAP complete)
- Continue to initiate electronic notification and payment processes. Improve collection of student accounts. (Working)
- Explore and implement improvement of internet capacity in the Residence Halls for students (complete)

2006-2007 Goal Progress:

The department missed completing a few goals for this year. Among them are the enhanced wireless access on campus, transitioning the Web, and converting the Email Client to Outlook.

Dorm Internet access became a crisis during Fall semester. This super seceded the wireless access project. Joe moved the dorms away from Packet Address Translation (PAT) to Network Address Translation (NAT), and implemented packet-shaping hardware and a new firewall. This was completed in December and work on the wireless system resumed at that point. The wireless access project is currently in test.

Very few advances were made on the campus Web this year. The primary reason for this is our inability to get 'permission' from Marketing to make global changes that were initially suggested by Kent. It seems like there's an agenda out there to halt all progress until all things are set up in a fashion that is acceptable to Marketing. I feel like the only way to make any progress on the Web is to divide the responsibilities for support between ITS and Marketing. I would suggest that Marketing maintain the Extranet (Advertising) and ITS support the intranet with the information providers in the departments.

Converting the entire campus to Outlook as an Email client has proven to be a problem.. This product is a support problem at least in conjunction with our Email server, because it stores configuration files on the local hard drive. The last upgrade in the IMail server provides a Web client interface that is effective for most Email users. Recognizing that there are some user processes that require a more robust client (calendaring & email merge), we feel that the IMail client meets the requirements of most users. Outlook can be installed where required. Other clients can be used as long as the user realizes that we cannot support them.

Evaluating the upgrade of WebCT to the Oracle-based (Version 6) is a moot point, as we have committed to three more years with the product, and Version 4 will eventually be de-supported. The challenge of setting up Banner on Linux this year precludes attempting a major upgrade until next year.

The re-implementation of Financial Aid, which included automating SAP processing, went well this year. The only major item for this project that is yet to be implemented is the Financial Aid portion of Banner Student Self-Service.

The electronic notification process has made some progress. The policy to utilize Email as the primary method of communication with students has been written and approved. The various tools to implement this have been tested, so all that remains is to implement the process within the various administrative offices. This sill be done this summer.

As noted previously, improved Internet access has been implemented in the dorms. The campus portion of the increased bandwidth purchased via UM-Missoula will cost the campus approximately $10,000/year. Gaming and file sharing ports continue to be blocked.

ITS Objectives for 2007-2008:

- Complete move of Banner to Linux platform
- Complete wireless networking implementation
- Implement new version of Voice Mail System
- Work with Admissions to facilitate any initiatives
- Move WebCT to new hardware/software platform
- Assist with the implementation of Email as a communication tool from administrative offices to students
- Revamp Web management structure
- Facilitate replacement of systems in small Intel Labs in STC

ITS Objectives for 2008-2009:

- Modify the structure within ITS to facilitate business process improvement.
    - E-Learning/Internet only students
    - Epayment
    - Work with Business Services on A/R review-
- Transition external phone and data network connectivity to Bresden.
- Assist with the move of Office Simm to the basement of the IT building.
- Complete the Carbon Inventory for the campus and put it into a maintainable mode.
- Assist with the evaluation/purchase of a new courseware system.
- Continue with the installation of multimedia systems into classrooms.
- Continue to work on revamp Web management structure.
- Facilitate replacement of Wireless Labs in STC.
- Start initial review and testing of 8.0 Banner

2008-2009 Goal Progress:

- The department has not yet been revamped for my new duties for 09/10, but Sue is making some progress in working with Business Services on process reviews.
- Data Service has been migrated to Bresden, but there are some problems with regards to telephone. This is an ISTD problem. We have transitioned the compressed video system to the data network, and will remove the T1 it was connected to after we have a conference or two on it.
- Office Simm will not be moved to IT Woods until winter break. The systems have been purchased for the facility.
- The Carbon Inventory was completed for the campus. Commute information was missing from our report. A survey was completed to gather information for this, but the response was minimal.
- The Courseware/Learning Management System evaluation has been pointed in the direction of Blackboard. We'll be on WebCT for another year, as the implementation of Blackboard needs to dovetail with Missoula, and this will take another year.
- We have come up with a different package for classroom multimedia/AV systems which incorporates SmartBoards. Four systems have been purchased, as well as

equipment to replace failed systems (projectors, podium computers, etc.) These systems will be installed this summer and fall. Otis Anderson is the point person for this.

- We managed to get permission to upgrade the look and feel on the campus Web this year, and Brendan accomplished this in short order. The news site on the marketing system was put into production. Marketing has decided that the calendar they specified lacks some functionality, so a new product will need to be found and evaluated. The new Admissions site was implemented.
- Instead of just replacing the wireless labs, it was decided to just upgrade one wireless lab and purchase some loaner laptops for the students to be controlled by the STC. 8 Podium machines for the classrooms were also purchased.
- Chad has started the process of getting ready for Banner 8. The form server (Native) and the Self-Service system (Dawgs) have been upgraded. The next step will be putting the database onto the spare development system.
- A server has been set up for Math Testing. This is a virtual server running under RedHat Linux ES 5.0. Virtualization may allow us to consolidate some of our servers onto single hardware platforms.

ITS Objectives for 2009-2010:

- Banner
  - Complete the implementation of Banner 8
  - Implement E-billing
  - Automate Internet–only student processing
  - Turn on Financial Aid Self-service
- Node Replacements
  - Primary File Server/Domain Controller (BigDawg)
  - Email Server (HotDawg)
  - Marketing Web Server (WebServer-Virtual)
- Physical Plant Review
- Carbon Neutrality Plan
- Bookstore Shopping Cart Application
- Business Services Process Review