

# MSU Information Technology Environment

Revised 24 February 2009

## PURPOSE

The purpose of this set of tables is to provide a reasonably comprehensive overview of the MSU information technology landscape. The leftmost columns name a functional need, the middle column describes the current state of play; the rightmost column identifies the responsible offices. The order of row content does not imply any particular meaning.

Not all elements noted in these tables are under direct LCT management, nor are they solely centrally supported. Many are the primary responsibility of other units, including local academic or administrative units. LCT may play a role in operating or coordinating them. They are included here to provide as thorough an overview as possible of the MSU IT landscape.

Following the tables are some notes regarding “overarching planning principles and assumptions” that guide LCT’s approach to serving the University and provide a description of the planning context of the LCT items in the tables.

This document will be updated from time to time; please check the revision date at the top of the document.

## VISION STATEMENTS

### **Academic Technology Environment Vision** (WORKING DRAFT initiated Sep 2006)

MSU’s academic technology environment should...

- Support active learning and scholarship by students and faculty...
  - Through instruction, study, research, creativity, outreach and engagement,
  - At all levels of scholarship,
  - Anywhere and any time
- Provide support for a variety of instructional techniques
- Make information readily accessible and useful for study and work
- Provide trust (security, compliance, consistency and integrity)
- Be available, robust and support business continuity

**Enterprise Business Systems and Services Vision**  
(WORKING DRAFT initiated 2005)

MSU's enterprise business information systems should...

- Make data and information accessible and useful for work
- Provide trust (security, compliance, consistency and integrity)
- Be available, robust and support business continuity
- Have a coherent and consistent overall design and framework
- Streamline and automate business processes

**Libraries, Computing and Technology units and abbreviations used**

Libraries MAU

Libraries      MSU Libraries

Computing and Technology MAU

AIS              Administrative Information Services  
Archives        University Archives and Historical Collections  
ATS              Academic Technology Services  
BCS              Broadcasting Services  
EIS              Enterprise Information Stewardship  
vuDAT          Virtual University Design and Technology

Enterprise Business Systems Projects MAU

EBSP            Enterprise Business Information Projects

Office of the Vice Provost      VPLCT

**1. DIRECT ACADEMIC SUPPORT  
(Instruction; Research)**

<b>Function</b>	<b>Current or planned state</b>	<b>Responsible office(s)</b>
1.1. Access to and assessment of knowledge resources	<p>Library collection/access resources and facilities; ever-increasing role and proportion of electronic resources; challenge of balance across (a) paper and electronic, (b) serials and monographs, (c) academic disciplines.</p> <p>Online catalog system.</p> <p>CIC shared online library project and Google contract.</p> <p>CIC interlibrary loan; Michigan statewide catalog.</p> <p>In-person, e-mail, phone and online reference assistance to local and remote users.</p> <p>Implemented artStor and digitization of MSU's own Visual Reference Library art history slide collection (MDID system; exploring expansion of MDID to support other faculty image collections online).</p>	<p>Libraries Dept. of Art and Art History Local unit resources</p>
1.2. Student and faculty workspaces for learning	<p>Library student group high-tech workspaces.</p> <p>General Library space management.</p> <p>Microcomputer labs.</p>	<p>Libraries ATS Local unit resources</p>
1.3. Utility and attractiveness of Library as place to study, pursue scholarship and engage with others in the academic community	<p>Cyber Cafe.</p> <p>Continually updating computer workstations in the libraries.</p> <p>Wireless connectivity throughout libraries.</p> <p>Installed compact shelving to condense collections and create/maintain space for people.</p>	<p>Libraries</p>
1.4. Copyright management	<p>Provide assistance to faculty, students and staff with copyright understanding, obtaining copyright clearances.</p>	<p>Libraries MSU Technologies (and Office of Intellectual Property) University Printing (University Relations)</p>

1.5. Tech-enhanced classrooms	<p>Continuing build-out of new rooms, and upgrades of existing, with consistent annual funding.</p> <p>Adding Crestron room-control touch panel units to tech classrooms to enhance ease of managing tech resources, lighting, etc.</p> <p>Will soon deploy faster remote reboot mechanism for classroom and lab computers; planning move to "thin client" architecture for classroom and lab computers.</p> <p>Concern regarding changing design needs (e.g., flexible, mobile furnishings to take advantage of wireless networking).</p> <p>Extending wireless network coverage and density.</p> <p>Exploring high-definition videoconferencing capability with CIC collaborators.</p>	<p>VPLCT ATS Facilities Planning and Space Management Registrar Local units</p>
1.6. Course management	<p>ANGEL -- <a href="http://angel.msu.edu">angel.msu.edu</a>; contract renewal options through May 2012; upgrading to ANGEL 7.4 in May 2009.</p> <p>Integration of e-reserves and other Library resources into ANGEL.</p> <p>LON-CAPA (<a href="http://lon-capa.msu.edu">lon-capa.msu.edu</a>); MSU instance moved to LCT support Summer 2008; will rely on LON-CAPA Consortium to provide bug fixes and feature upgrades going forward.</p> <p>Joined Sakai Educational Partners Program 2005-06.</p> <p>College of Education small-scale use of Moodle.</p>	<p>ATS (ANGEL) Libraries College of Natural Science (LON—CAPA) College of Education (local use of Moodle)</p>
1.7. E-portfolio	<p>ANGEL e-Portfolio system trial.</p> <p>OSP (Open-Source Portfolio; now part of Sakai) trialed but not ready yet as a product .</p> <p>LON-CAPA e-portfolio functions.</p>	<p>ATS College of Natural Science (LON—CAPA Consortium) Local units</p>
1.8. Web publishing	<p>Andrew File System (AFS; <a href="http://afs.msu.edu">afs.msu.edu</a>).</p> <p>Considering enhanced web-based file-sharing services.</p>	<p>ATS Local units</p>
1.9. Collaboration tools -- online document sharing	<p>ATS launching vBulletin website late Spring 2008 to support CAFEs and IT community; will consider expanding this to other uses.</p> <p>ATS pursuing institutional contract for Google Docs (winter 2008/spring 2009)</p> <p>Local implementations of MS Sharepoint and other related services</p>	<p>ATS Local units</p>
1.10. Collaboration tools -- wiki server	<p>ATS launching vBulletin website late Spring 2008 to support CAFEs and IT community; will consider expanding this to other uses.</p> <p>Local instances of wiki servers.</p>	<p>ATS Local units</p>

1.11. Podcasting (broadly construed)	Interactive Video Services (ivs.msu.edu; division of MSU Broadcasting Services) provides support; microphone systems installed in many tech classrooms to facilitate use of Camtasia.	BCS Local units
1.12. Video streaming	vuDAT StoreMedia service ( <a href="http://storemedia.vudat.msu.edu/">http://storemedia.vudat.msu.edu/</a> ); Real Helix multiformat streaming server. Implementing iTunesU site contract (spring 2009).	ATS and vuDAT Local units
1.13. Classroom personal response systems	Systems employed at faculty choice. Have published a recommendation to use one of two "preferred" system(s) to minimize the variety of systems students must purchase ( <a href="http://computing.msu.edu/documents/Clickers_at_MSU_4_12_07.pdf">http://computing.msu.edu/documents/Clickers_at_MSU_4_12_07.pdf</a> ; published 12 Apr 07, modified 3 Mar 08).	VPLCT Local units
1.14. Creative video distribution channels	Open Student Television Network (OSTN)	BCS
1.15. Faculty and staff development	Virtual University Design and Technology (vuDAT) services, website, workshops (vudat.msu.edu). AT&T Faculty-Staff Awards in Instructional Technology ( <a href="http://att-awards.msu.edu/">http://att-awards.msu.edu/</a> ). LCTTP (train.msu.edu). Instructional Tech brownbags and workshops. Subsidization of faculty and Teaching Assistant participation in LCT training programs. Institutional membership in Sloan Consortium, EDUCAUSE Learning Initiative, CIC Learning Technologies group. Help support FOD Faculty Learning Communities.	ATS AIS vuDAT VPLCT Faculty and Organizational Development (FOD) Colleges and local units
1.16. Online/blended instructional content design and development	vuDAT services and website (vudat.msu.edu). LCTTP (train.msu.edu). Instructional Tech brownbags and workshops.	VPLCT ATS vuDAT Local units
1.17. High-performance computing	Implementing ICER (Institute for Cyber-Enabled Research) Spring 2009, based on recommendations of faculty visioning committee and involved deans High Performance Computing Center (hpcc.msu.edu) -- within ICER Institutional membership in Great Lakes Petascale Computing Consortium	VPLCT ATS VPRGS Engineering Natural Science Social Science National Superconducting Cyclotron Lab Local unit and lab resources

<p>1.18. Network -- external</p>	<p>Member of Merit Network (MichNet), which provides basic Internet and Internet2 connectivity; 10 Gbps connectivity to MichNet. Michigan LambdaRail (MiLR); partnership with U of Michigan and Wayne State U; ability to provision dedicated 10 Gbps point-to-point (worldwide) channels for single research projects/purposes. CIC Chicago OmniPoP; connection point to very large number of national and international research networks.</p> <p>Internet2.</p> <p>Halted and flattened exponential year-to-year growth of MSU Merit Member Fee (control started in FY2003-04), and simultaneously expanded bandwidth availability.</p> <p>Dial-in services reduced to only a limited local modem-pool; incrementally eliminating as use declines.</p>	<p>ATS VPLCT</p>
<p>1.19. Network -- internal</p>	<p>Network backbone upgraded to 10 Gbps. Adding support for multicasting.</p> <p>Eliminating single points of potential failure, enhancing redundancy; enhancing network robustness to power failures.</p> <p>Intrusion prevention implemented across backbone for security.</p> <p>Supporting unauthenticated guest access services to support campus visitors, conferences, etc..</p> <p>Testing 802.1x services; planning for dynamically allocated vlans.</p>	<p>ATS</p>
<p>1.20. Network -- wireless</p>	<p>Multi-year full-coverage deployment plan that includes upgrade to 802.11n.</p> <p>Mesh network deployed for farms and research ponds, much of Kellogg Biological Field Station property, and key main campus outdoor areas including "People's Park" area between Wells, International Center, Erickson and the river; Wilson/Case/Wonders courtyard; sports fields near Jenison.</p>	<p>ATS</p>
<p>1.21. General research support planning and coordination</p>	<p>With MSU faculty and IRB office, developed acceptable protocols for research use of network traffic extracts from MSUNet and MichNet.</p> <p>Collaborated with VPRGS on research data security and (also Internal Audit) FISMA compliance for federal grants.</p> <p>Established shared position of associate vice president and associate vice provost for research technologies support within VPRGS and VPLCT.</p>	<p>VPLCT VPRGS Computer Science and Engineering Internal Audit</p>

1.22. Video-conferencing	Breeze server. BCS-IVS supports professional-quality VC facilities and services. HD systems becoming available at reasonable cost and typically implemented by individual units. Exploring uncompressed HD VC with CIC collaborators.	ATS BCS vuDAT Local units
1.23. Media assets management/storage	BCS, Archives and ATS exploring large-scale options. Archives and Libraries collaborating with MATRIX on digital asset management implementation.	Archives MATRIX ATS BCS Local units
1.24. Video content production	Multi-year effort to fully digitize all aspects of Broadcasting Services and WKAR; develop HD production, editing and distribution capabilities. Developing diverse collaborations with MSU academic units and faculty to develop array of MSU academic content.	BCS Communication Arts and Sciences College of Music Wharton Center MSU Museum Local units
1.25. Video distribution	Campus cable TV; added HD channels summer 2008. Video over IP being explored by Telecomm Services and ATS.	Telecomm Services (Physical Plant) ATS

## 2. ACADEMIC ADMINISTRATION

Function	Current or planned state	Responsible office(s)
2.1. Student information	Student Information System (SIS). Pre-planning for SIS replacement/upgrade begun Summer 2008.	Registrar and Academic Services Office of Planning and Budgets AIS EBSP EIS
2.2. Student transactional access to academic information	STUINFO data warehouse and related web user interfaces	Registrar AIS

2.3. Grades reporting	GRADES system	Registrar AIS
2.4. Online (credit program) enrollment	WebEnroll system	Registrar AIS
2.5. Advising and degree audit	Degree Navigator system; Advisor Scheduling system; Electronic Student Advising Folder system	Registrar AIS
2.6. Catalog and Schedule of courses	COURSES system	Registrar
2.7. Academic calendar	Reg.msu.edu	Registrar
2.8. Registrar Forms System	ESAF, Administrative Actions, Classlists, Data Generator	Registrar
2.9. Scholarship and financial aid	SAM system Scholarship Application system Endowed scholarships system	Financial Aid AIS Chief Financial Officer
2.10. Online admissions	Admissions systems	Admissions
2.11. Transfer credit equivalencies	Transfer.msu.edu	Registrar Admissions
2.12. International students	SEVIS, OISS/Info	International Students and Scholars AIS Registrar
2.13. Instructional assignments and "course information"	CLIFMS system	Planning and Budgets
2.14. Faculty professional accomplishments tracking and effort reporting	CLIFMS system Outreach and Engagement Measurement System	Planning and Budgets Outreach and Engagement

2.15. Online non-credit enrollment	Jenzabar system (beta) in limited testing deployment	MSU Global Registrar Office of Planning and Budgets AIS vuDAT Some local unit systems
2.16. Student athlete academic compliance tracking	ATHLINFO system	AIS Registrar Student Athlete Support Services Intercollegiate Athletics
2.17. Course and instructional evaluations	SIRS/SOCT; ratemycourse.msu.edu; soct.msu.edu	AIS Assoc Provost for Undergraduate Education
2.18. Additional graduate student program information (e.g., advisory committee tracking)	GRADINFO data system developed in 2006-07 to address NRC reviews/rankings; now in continuous production use	Graduate School Office of Planning and Budgets AIS
2.19. Customer relationship management system	NEEDED? (support online programs, and University Advancement programs; will likely explore soon with new University Advancement leadership)	TBD
2.20. Research administration	Kuali Coeus (KC); MSU is a KC development partner and co-invester. COEUS sandbox Go-live dates not yet established Presently supported by numerous systems, often with very granular functionality	VPLCT VP Research and Graduate Studies EBSP Contracts and Grants Admin Office of Radiation, Chemical and Biological Safety Office of Regulatory Affairs
2.21. Outreach and engagement activity inventory	OEMI system (Outreach and Engagement Measurement Instrument)	Outreach and Engagement

2.22. Service Learning enrollment and tracking	Service learning system. Legacy system repaired Summer 2008; discussions started Summer 2008 regarding upgrading/replacement of this system.	Outreach and Engagement Office of Planning and Budgets
2.23. Student employment	Graduate Appointment System SEAS (student employment authorization system; 1/07)	Placement Services AIS

### 3. SERVICES

Function	Current or planned state	Responsible office(s)
3.1. Helpdesk(s) and user support info resources	Library Distance Learning Services (LDLS) ATS and AIS helpdesks ATS classroom support line servicestatus.msu.edu computing.msu.edu; techbase articles	Libraries ATS AIS
3.2. E-mail	mail.msu.edu; virus filtering, multi-layer spam filtering (known spammers list service; greylisting; spam score filtering). Considering alternative approaches to provisioning of student e-mail; in meantime continuing to provide in same system as employees. Various local unit systems.	ATS Local units
3.3. Calendars	New mail.msu system provides personal calendaring functions. Individual local systems in place.	Local units
3.4. Events calendar	events.msu.edu Individual local online calendars.	University Relations ATS Local units
3.5. Online storage	Andrew File System (AFS). Exploring hosted SAN and other options	ATS Local units
3.6. Hosted servers	AIS and ATS offer hosted servers; soon offering hosted virtual servers	AIS ATS

3.7. Data warehouses	MSUINFO. MSUDATA. MSU Financial Data Warehouse. Data warehouses will change/expand with introduction of Cognos business intelligence tools as part of EBSP.	AIS EBSP
3.8. Business intelligence / analytics	Administrators' Assistant – HR. New reporting and analysis services will be implemented as part of EBSP.	Office of Planning and Budgets AIS EBSP
3.9. Identity management and Directory Services	Joined InCommon Federation and implemented Shibboleth to support trusted federated (multi-institutional) authentication. AIS Sentinel service integrated with Shibboleth; supports single-sign-on capability. Capability to support a “MSU Community” ID has been developed to permit a single unique identifier to be associated with anyone having a relationship with MSU. Identity management approach and services will continue to evolve via EBSP.	ATS AIS EIS EBSP
3.10. Credentialing and authorization	Presently built into each application. New approaches may emerge via EBS projects.	ATS AIS EIS EBSP Local units
3.11. Portal	None presently. Portal service(s) may emerge via EBS projects.	AIS EBSP
3.12. Electronic workflow	Kuali Workflow will be implemented for some functions in EBSP. SAP workflow may be implemented for some HR functions in EBSP. MSU Forms Tracking Utility.	AIS EBSP
3.13. Institutional archiving	Archives developing plans for archiving of digital objects: websites, digital images (photo; video; document), business records; collaboration with MATRIX. Archives manages paper and photographic archives.	Archives ATS AIS MATRIX
3.14. Content management	Webteam (University Relations and ATS) have selected Hannon-Hill to support new MSU website architecture and services (under development).	ATS University Relations

3.15. Policy repository	Project initiated to design and implement central policy and business practice repository	General Counsel Archives VPLCT
3.16. Payment card processing	Moving to CashNet from WebCredit system	Controller/CFO AIS
3.17. Document imaging	By individual units currently. EBS projects will address coordinated enterprise approach.	EBSP Archives
3.18. Data access tools	Document Viewer	AIS
3.19. Telephony	POTS via Centrex VoIP or Business Telephone Service via Campus PBX Softphone and Cellular Integration Services via Campus PBX	Telecomm Services
3.20. Voice mail	Unified messaging supported by Telecomm Services. Locally-supported systems.	Telecomm Services
3.21. Point-of-sale	Blackboard system supported by Housing and Food Services	Housing and Food Services
3.22. Space access security	Siemens system operated by Department of Police and Public Safety (building, room, space, parking access control)	Police and Public Safety
3.23. Emergency notification	Blackboard Connect-ED	Police and Public Safety
3.24. Systems and technology training	LCT Training Programs (LCTTP; train.msu.edu) Various offices supporting systems and services	AIS ATS Various offices

#### 4. INFRASTRUCTURE

Function	Current or planned state	Responsible office(s)
4.1. Business continuity	<p>Various projects.            Joint mirrored SAN for critical systems implemented by AIS and ATS.            AIS and ATS virtualizing servers.            Established availability target for infrastructure services at "4 nines" (i.e., 99.99% uptime) or better.            Established availability target for application services (e.g., CMS, financial system) at "3 nines" (i.e., 99.9% uptime) or better.</p>	<p>AIS            ATS            EBSP</p>
4.2. Data center(s) and hosting facilities/services	<p>Planning for new data center to reduce business interruption risk and add space needed for high-performance computing and server hosting.            AIS and ACNS collaborating services and support approach, incl. backup, monitoring, security, operations protocols, storage, helpdesk, ...</p>	<p>ATS            AIS</p>
4.3. Communications infrastructure	<p>Optical fiber continually being added and upgraded to support a variety of services.</p>	<p>Telecomm Services            ATS            VPLCT</p>

#### 5. ENTERPRISE BUSINESS APPLICATIONS

Function	Current or planned state	Responsible office(s)
5.1. Financials	<p>Kuali Financial Systems (KFS); MSU is a KFS development co-investor.            Phased go-live targeted to begin July 2009.</p>	<p>Controller/CFO            Office of Planning and Budgets            AIS            EIS            EBSP</p>

5.2. Human Resources	Will implement SAP HR. Phased go-live targeted to begin July 2009.	HR AIS EIS EBSP
5.3. Supply-chain (e-procurement, stores, etc.)	Collaboration with UC-Davis to develop a Kualii module.	Purchasing AIS EIS EBSP
5.4. Business intelligence, analytics, reporting and budget-building	Cognos to be implemented as part of EBSP.	Office of Planning and Budgets EBSP
5.5. Research administration	Variety of home-built systems presently in use. EBSP collaborating with VPRGS, faculty and college/unit administrators to develop vision, data models, and approach for integrated systems. MSU is development investor in Kualii Coeus (KC) and will implement KC modules selectively as they become available. MSU also has joined the Coeus consortium and may implement Coeus functions as bridge to KC.	VPRGS Contracts and Grants Admin. Office of Planning and Budgets EBSP
5.6. Electronic business records management	Records management policies and protocols under review by Archives and EBSP teams. Archives developing recommendations for how to identify, store, secure and manage electronic business records.	Archives EBSP
5.7. Building and space inventory; Physical plant management	FAMIS system GIS system	Physical Plant Office of Planning and Budgets AIS EBSP
5.8. Endowments management	Endowments management system . Scholarship endowments management system.	CFO AIS
5.9. Health and safety	Immunize system. HASP system; developing functional specs. SAP HR; exploring what needed functions this system can deliver; HASP project will be used to fill functional gaps.	HR AIS EIS EBSP

5.10. Policy repository (single repository of policies; standard presentation formats; searchable, etc.)	See above	
5.11. Continually enhance utility of existing legacy systems	<p>Adding Web-enabled technology and user interfaces.</p> <p>Implemented mainframe database real-time access middleware.</p> <p>Implemented mainframe database replication middleware.</p> <p>Implemented web-based real-time user interface to SIS for web enrollment.</p> <p>Continue upgrading processing power of mainframe.</p> <p>Reduced length of mainframe batch-mode window to extend hours of live transaction mode.</p>	AIS

## 6. FUNCTION-SPECIFIC BUSINESS SYSTEMS

Function	Current or planned state	Responsible office(s)
6.1. Housing management	RMS system	Housing and Food Services
6.2. Donor records	Advance	University Advancement (Development & Alumni Assoc.) AIS
6.3. Maintenance management	FAMIS (Facilities Asset Maintenance Information System) Includes preventive maintenance and building and grounds trouble calls	Physical Plant
6.4. Alterations and improvements project tracking and billing	FAMIS Includes project estimating	Physical Plant
6.5. Inventory Control	FAMIS	Physical Plant

6.6. Wireless for inventory control	FAMIS Incorporates bar coding functionality	Physical Plant
6.7. Purchasing	FAMIS Interface between FAMIS and E+	Physical Plant & University Services
6.8. Key control module	FAMIS	Physical Plant
6.9. Tool control	FAMIS	Physical Plant
6.10. Facility assessments	FAMIS	Physical Plant
6.11. Space management	FAMIS	Physical Plant & FPSM
6.12. AutoCAD	FAMIS	Physical Plant
6.13. Capital projects	FAMIS	Physical Plant, CPA
6.14. Mobile for work management	FAMIS	Physical Plant
6.15. Telephone and telecommunication services billing	COMPCO MySoft	Physical Plant Telecommunication Systems
6.16. Burner and stack emissions reporting for MDEQ	MAERS by Sybase Inc.	Physical Plant Power & Water
6.17. Generator and boiler production data historian	eDNA by Instep Software	Physical Plant Power & Water
6.18. Remote control of building environmental systems	Siemens	Physical Plant Maintenance Services
6.19. Boiler and generator remote control and monitoring	ABB	Physical Plant Power & Water
6.20. Mapping and management of utility infrastructure assets	Munsys	Physical Plant Engineering and Architectural Services

6.21. Capital project management	Skire	Physical Plant Engineering and Architectural Services & CPA
6.22. Document management system	Meridian Document Management	Physical Plant Engineering and Architectural Services
6.23. Retail sales	Microsoft Retail Management System	Physical Plant Transportation Services Bike Operations

## 7. ENTERPRISE INFORMATION STEWARDSHIP

Function	Current or planned state	Responsible office(s)
7.1. Data coherence	Data models, data definitions, systems of record, data integrity, etc.. Created Enterprise Information Stewardship (EIS) office; launched EIS workgroup; created ISTeCC (Information Services and Technologies Coordinating Council) to begin to address enterprise-wide data and information system issues. Additional approaches emerging via EBS projects.	Office of Planning and Budgets EIS EBSP
7.2. System integration	Integration architecture, middleware and workflow design, policies and practices. Emerging via EIS and EBS projects.	Office of Planning and Budgets EIS EBSP
7.3. Data security and confidentiality	Managing Sensitive Data campaign. ISO 17799 standards. Sentinel Security system. ATS and AIS security systems and practices. Local units security measures.	EIS EBSP ATS AIS All units
7.4. Records management	Business records (that start digital): scanned documents; e-mail; images and video; web site content. Policies, practices and tools will emerge via EBS projects.	Registrar Financial Aid Archives EIS ATS AIS EBSP

7.5. Business rules coherence	EIS practices. Emerging via EBS projects.	EIS EBSP
7.6. Data usability and business value	EIS practices. Emerging via EBS projects.	EIS EBSP
7.7. System development life cycle methodology	EIS practices. Emerging via EBS projects.	EIS ATS AIS EBSP

## 8. COORDINATION AND COMMUNICATIONS

Function	Current or planned state	Responsible office(s)
8.1. Research support coordination	Associate Vice Provost and Assistant Vice President joint position created to bridge these two offices and give full-time attention to coordination and planning of technological research support	VPLCT VP Research and Graduate Studies
8.2. Data security coordination	<p>ATS security team. Collaborations with Internal Audit, Controller's Office and Department of Police and Public Safety; using ISO 17799 and FISMA standards for guidance.</p> <p>Managing Sensitive Data campaign and website. Collaborate with HealthTeam on HIPAA data security compliance.</p> <p>Safe and Secure Computing campaign and website materials.</p> <p>Collaborated with General Counsel, DPPS and Merit Network to develop compliance approach for Communications Assistance for Law Enforcement Act (CALEA).</p>	<p>VPLCT ATS EIS Internal Audit Controller General Counsel Police and Public Safety HealthTeam IT</p>
8.3. Policies	<p>Implemented: SSN privacy. Data systems intrusion response. Payment card industry data security standards. Web accessibility.</p> <p>NEEDED and pending: Revised AUP. Individual data stewardship responsibilities.</p>	<p>VPCLT General Counsel</p>

8.4. MSU Home website utility and vitality	<p>Collaborating with University Relations to actively maintain Home site, its architecture and content. Next architectural redesign project launched Spring 2009; will involve content management functions.</p> <p>MSU Keywords and Pathfinders implemented to enhance search performance; Keywords continually updated based on user search behavior and input from University offices.</p>	ATS University Relations
8.5. Promote good Web design standards and practices across the University	<p>Actively maintain Web style guide (<a href="http://www.msu.edu/webstyle/">http://www.msu.edu/webstyle/</a>).</p> <p>Implemented Web accessibility policy Summer 2008.</p> <p>Developed contractual boilerplate for contractors who develop or maintain University-related websites.</p>	ATS University Relations Office in Inclusion and Intercultural Initiatives Purchasing Outreach and Engagement
8.6. Leadership and professional development	<p>LCT leadership characteristics developed and used to support behavior expectations of all LCT managers and to support leading-at-all-levels culture within LCT.</p> <p>LCT participation in MSU leadership development programs (Executive Leadership Academy). CIC CIOs leadership development program (MOR Associates; MSU cohorts include non-LCT staff). Considering leadership development program intended for broad MSU IT community participation.</p>	LCT
8.7. Measurement and benchmarking	<p>Ad hoc in most instances.</p> <p>LCT working to apply "nines" approach (e.g., "3 nines" = 99.9% uptime) to target, assess and manage the availability of online services.</p>	LCT
8.8. Communications mechanisms	<p>Servicestatus.msu.edu (website, e-mail, RSS). Forums.msu.edu (vBulletin) Computing.msu.edu Help.msu.edu; TechBase articles.</p>	LCT ATS
8.9. Portfolio management tools	<p>None deployed presently; AIS exploring options.</p>	AIS ATS
8.10. Broad-scope information systems and technology coordinating group	<p>ISTeCC (Information Services and Technologies Coordinating Council) launched fully in 2008; all colleges and major academic and operational support units participating.</p>	VPLCT EBSP

<p>8.11. Advisory committees and mechanisms (end-user focus)</p>	<p>CAFEs (Communities for Advising, Facilitating and Enabling):</p> <ul style="list-style-type: none"> <li>• Accommodating Technology</li> <li>• Administrative Data Users</li> <li>• Computers in Writing</li> <li>• Health Education and Related Technologies</li> <li>• Instructional Computing and Technology</li> <li>• IT Exchange</li> <li>• Network and Communication</li> </ul> <p>Other Groups:</p> <ul style="list-style-type: none"> <li>• Network Administrators Group</li> <li>• Webmasters Group</li> </ul> <p>Senior Faculty Advisors and Coordinators:</p> <ul style="list-style-type: none"> <li>• Instructional technology (Severin Grabsky; Byron Brown)</li> <li>• Research support (Estelle McGroarty)</li> <li>• End-user business value, and research administration (Peter Asquith)</li> </ul>	<p>VPLCT</p>
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## Overarching planning principles and assumptions

1. Technology is a tool serving and enabling the University's success in implementing its mission and achieving its objectives; any technology plan must be consistent with and supportive of teaching, research and outreach/engagement objectives and plans.
2. MSU is a large, complex research university with operations in a variety of activities that have unique information and technology needs. We should expect a constantly-evolving mixture of centrally-supported and locally-supported technologies and information services will be needed to optimally support these activities.
3. Centrally-supported technologies at MSU have two fundamental big-picture objectives:
  - a. Provide basic technology infrastructure and services that are sufficient to support the fundamental work of any person, program or unit at MSU. This first objective helps us to determine how to best deploy limited resources across a technology portfolio when we can't afford to make everything state-of-the-art for everybody.
  - b. Provide that basic technology infrastructure and the related services in a manner that is robust and capable enough that they also don't impede more sophisticated, state-of-the-art tools and functions that may be added on top of the basic infrastructure by those people, programs and

units who need or desire them and are capable of affording them. This second objective reminds us that, where it matters enough, the University or its units or programs may want to support the very best infrastructure and services we are able to support, and not be limited by choices we made in meeting the first objective. This second objective also supports innovation and technological advancement across the entire University environment of infrastructure and service platforms, and recognizes that, increasingly, innovation occurs at the “edges” rather than at the “center” of the organization.

Subject to the usual constraints of cost, available technologies, products and services, and other risk factors, technology services should:

- Be available when users need them;
- Do what users expect them to do;
- Be responsive (minimal delays or latency in the user-technology interaction).

Technology services that are vital to daily work and study should be designed, implemented and managed to

- Minimize downtime, and, if down,
- Recover rapidly.

Technology and related services should be purposefully evaluated and subject to continuous improvement. Technology “solutions” should be selected and implemented in ways that best preserve and not preclude future options for different approaches.

Sufficient resources should be stewarded centrally to support carefully selected and managed experiments with advanced technologies and applications. The experiments may be conducted by central units, by local units and individuals, or via central-local collaborations. We should expect that the majority of innovations will occur in local units; central units should become aware of these and consider their broader adoption and support when this is sensible.

#### 4. Regarding drivers and rates of change...

- Three things are core drivers of technology planning:
  - a. People’s needs, and the trajectory of these.
  - b. The trajectory of technologies (currently applicable technologies, and disruptive technologies) relevant to the needs.
  - c. The trajectory of the market environment (what standards, pricing and capabilities are evolving).

- All three of these core drivers change rapidly. Planning horizons are sometimes as short as 4-6 months. Therefore, continuous planning is very important, but specific plans are continually subject to change.
- We want to be agile enough to deal with this underlying rate of change and to take advantage of opportunities when they arise, and to be able to rapidly plan and implement new technological approaches. We recognize a distinction between agility and short-sighted planning and reaction; considered waiting can sometimes be helpful if new technologies or price points that emerge during the delay make a material difference in architectural choices, the effectiveness of implementation, or the value expected and derived from a technical plan. At the same time, limited-scope, selective and purposefully-evaluated experimentation with new technologies also can be useful from time to time.
- Generally, we always wish to maximize flexibility to deal with changing demands for functionality and rapid change in available technologies and the marketplace, subject to the usual constraints of cost, available technologies, products and services, and other risk factors. Switching costs (moving from one technology or product or systems approach or vendor, to another) are generally very high. Vendor dependency can be both costly and risky. At the same time, outsourcing and newly evolving business and service models (e.g., software-as-a-service; cloud computing) will always be given due consideration.

#### 5. Centralization v. decentralization (“localization”)

The technology environment at MSU is a shared responsibility between “local” units (colleges, departments, divisions, etc.) and the central University administration. There are key roles to be played by individuals, units and central University support services in the development, use and support of both experimental and production technologies. There also is and always will be tension between the balance of goodness to be achieved through centralization or decentralization of technology support and services, or through standardization or variety. Economies of scale, complexity of operation, skill sets required, relative benefits of standardization vs. multiple platforms and technological diversity, risk management, and many other factors relevant to deciding the appropriate balances for optimizing institutional response to technologies and technology solutions, all change and evolve rapidly. At any given time, the total of all available central and local resources is generally insufficient to address all technology needs and wishes of the University community, so both groups must make decisions regarding how best to deploy limited resources to meet these needs. These balancing acts are a continuous concern for planning. Collaboration, coordination, and therefore communication, between central and local planning, decision-making and work activities are critically important.

It is important to note that not all implementation should be thought of as only “local” or “central”. When a set of local units share a common interest or need, they may collaborate as a group to effect “regional” solutions and services, in between “local” and “central” scale.

The following table outlines some factors that tend to suggest either centralization or localization of the responsibility for a given technology or service. It is important to bear in mind that the conditions characterizing any of these factors for a given technology tend to change, sometimes rapidly. Two recent excellent readings on this topic are the chapters by Brad Wheeler and Jim Davis in the EDUCAUSE book (R Katz, ed.; 2008) *The Tower and the Cloud*, available online in full text at <http://www.educause.edu/thetowerandthecloud/133998>.

<b>Factors suggesting <u>central</u> responsibility</b>	<b>Factors suggesting <u>local</u> responsibility</b>
<u>Economies of scale</u> are available through bulk purchasing or support, and the subject technology or service is essentially a commodity (so choice is less important)	Price premium paid for fragmented, non-bulk purchasing and support is deemed worthwhile in exchange for flexibility of choice in technology or service, or added value as perceived through local needs
<p>Technology or service is essentially a <u>commodity</u>, so choice is less important</p> <p>Technology or services are <u>basic</u> and needed by everyone; commodity offerings provide all or nearly all desired features and functions</p>	<p>Technology or service is <u>specialized</u>, perhaps specific to a disciplinary framework</p> <p><u>Enhanced or state-of-the-art</u> technology or services are desired locally, and price premium is considered worthwhile</p>
Implementation and operation of the technology or service are only sensible as a <u>shared resource</u> (e.g., network backbones)	
A high degree of <u>control or consistency of practice</u> is needed for effective stewardship of institutional data and risk management	

Central experimentation with new technologies and services is undertaken to encourage and facilitate innovation, when the value proposition is suitably high for the University but local units do not find sufficient near-term value to justify the investment, or the level of risk is larger than may be reasonably borne locally

Central administration is always responsible for identifying effective local innovation, and working to communicate that broadly across the University

Local experimentation with new technologies and services is undertaken to encourage and facilitate innovation, when the value proposition is locally high but modest for the entire institution, and level of risk may be reasonably borne locally

Local innovators should be willing to self-identify and share their ideas, successes and failures with others centrally and across the University