University of Massachusetts Dartmouth
Technical Infrastructure SWOT Analysis
Academic Year 2006-2007

Based on the University of Massachusetts Dartmouth Strategic Plan 2000-2010 the Technical Infrastructure SWOT Team focused on
Goal 5. An effective physical, technical, fiscal and human infrastructure is in place to support academic activities.

Objectives: Complete and implement the facilities master plan.
Plan Develop a comprehensive safety and disaster plan for the campus for the renewal of faculty lines as faculty retire
Evaluate future needs for teaching, scholarship, and student service facilities that respond to the variety of learners and activities.
Assure library holdings and electronic information systems are current and meeting the needs of learners.
Continually monitor and upgrade technological infrastructure and services.
Develop communication systems that inform the campus and external audiences of activities and opportunities.
Increase fund-raising activities.

Strengths:
1. Instruction
   a. Faculty Instructional Laptop Program (FILP) 3 year lease program: over 320 faculty now have laptops for instruction
   b. Technology-Enabled Learning Spaces: technology in 76 learning spaces of which 59 are classrooms. 88% of class/sections use these learning spaces.
   c. CITS Instructional Development (ID) Team improves the use of technology by relating its use to teaching
   d. Survey Builder, web tool for creating surveys: Developed in-house, is excellent tool for use in assessment
   e. WEBCT is a good platform for online courses. Successfully rolled out with 150-170 faculty trained with over 6700 registrations in Spring 2007
   f. Multiway video enables distance learning and videoconferencing with a total of 7 locations with future growth in IP and bridging technology

2. Services
   a. Ubiquitous access to voice, video and data with very little downtime
   b. LDAP (Lightweight Directory Access Protocol): Campus based directory services for e-identification brings in one password/login for multiple campus based e-services (e-mail, meeting maker, intranet, active directory, etc.)
   c. Active Directory implementation provides access to centralized disk storage and backup
   d. Wireless access: Good but doesn’t go far enough – everywhere (to include the residence halls)
   e. Provide campus wide licensed music and video for students
   f. Strong central IT (LSIRT) staff and service support with willingness to collaborate and take on new initiatives without increase in resources.
   g. CITS web site helpful as it incorporates a on-line IT Service Catalog
   h. UMass Pass provides online account maintenance thus improving service quality

3. Information Systems
   a. PeopleSoft information system is a collaboration of 5 campuses for EMPAC and 3 campuses for ISIS which fosters an understanding of campus based regulations and definitions
   b. Lines in the University Enrollment Center are decreasing because of COIN used as the web interface to the student system
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Weaknesses:
1. Funding for technology
   a. Initiatives are funded initially, but the ongoing costs are not part of budget, i.e., Faculty Instructional Laptop Program (FILP), Technology in the classrooms, Instructional Development, student lab capacity
   b. Central IT (exclusive of PeopleSoft) has been level funded for 10 years; consequently, loans are used to fund infrastructure improvements such as central disk storage, backup, network hardware, etc.
   c. PeopleSoft costs are very high
2. Instruction
   a. Students do not have the software needed for classes, because it is too expensive
   b. New programs get added without providing for additional resources which have a direct impact on the Library holdings and Information Technology
   c. Students, especially older students, do not have basic technology skills. Suggest student competency tests to include: Library, COIN, basic computer understanding, WebCT
3. Training
   a. Campus does not do enough to invest in faculty and staff IT literacy. Need to evaluate faculty and staff IT training /instruction in order to make it more effective
   b. No formal orientation for new staff or refresher course in utilizing technology or IT services
   c. There is a lack of training faculty in programs such as FILP where some faculty members spend too much time setting up for class and taking down after class. If one of the numerous steps fails, to include erasing the whiteboard, the result is an interruption to the class.
4. Communication
   a. Remote sites: Feel like they are the “forgotten brother” often hearing about initiatives second hand. (not only an IT issue)
   b. Lack of coordination for technology across campus, i.e., mopiers (multi purpose copiers), UMass Pass options not fully utilized, security efforts, etc. This lack of coordination can be costly and resulting in multiple systems doing similar tasks.
5. Services
   a. Backup of professional and research data is spotty at best
   b. Identity management (your login be the same for all systems) and systems technical integration across systems is cumbersome. Difficulties to multiple systems across the UMass system. For example, we access Peoplesoft systems one way, campus based systems another such as e-mail, meeting maker, department/college based system such as Sedona another way, and WebCT yet another way. Note: A UMass system initiative is underway to address this issue.
   c. Collaboration among multiple departments on IT issues is infrequent. For example, there are multiple instances of active directory, i.e., CITS, SMAST, COE, Library
   d. Access control issue should be integrated. UMass pass is not used as the central id system for accessing all services. There is a need to utilize the card swipe technology on lab doors so that student can enter labs, use printers, etc.
   e. IT staff, in an effort to respond to the increase in demand for service, take on more and become overwhelmed. This has a direct impact on service quality
6. Information Systems
   a. COIN/Peoplesoft is not user friendly, menu system and help difficult to use. Even with training, faculty have difficulty using the system
Weaknesses (cont’d)

b. Although PeopleSoft facilitates campus collaboration, it is difficult to make changes or have quick response to the central systems Shrewsbury. President’s office takes role of establishing rules for information systems but does not listen to campus needs and suggestions for system interface tools. Does not provide adequate processes for campus based opportunities and innovation.

Opportunities:

1. Funding of Technology
   a. Increase fund raising initiatives to include fund sharing, i.e., grants
   b. Wireless broadband initiative to support campus IT and regional emergency management and economic development

2. Instruction
   a. The excellent online learning management system WebCT positions UMass Dartmouth as a leader in Online learning for both blended courses and graduate programs that might serve the nontraditional student population. This is potentially a revenue generator. Part of this revenue stream could be used to support the technical infrastructure that is needed to support Instructional Development
   b. Increase utilization of electronic textbooks

3. Communication
   a. Campus based Instant Messaging (IM) could improve communication reducing the need to use e-mail for every correspondence, i.e. IM is like a telephone call and E-Mail like a memo. There is the possibility that this may be a University system initiative.
   b. Integrate department based service catalogs for a searchable, web based general service catalog such as Ask Corsair to find available services
   c. Web 2.0 technologies/social software provides new opportunities for community building, i.e. wikis, blogs…
   d. Create IT “evangelist” or new initiative team to promote and support new IT initiatives for campus that will save the campus dollars and reduce support complexity. Incentives could be used to promote use of the new procedure, e.g., reduction of general surcharge on initiatives that follow this process
   e. Staff orientation would reduce stress and frustration and empower people

4. Infrastructure technology
   a. Wireless technology is evolving to handle more sophisticated configurations and ready for expansion
   b. High performance computing @ SMAST an opportunity for research computing and UMass system wide collaboration
   c. Establishment of a hot site for critical systems utilizing one of the UMass sites, i.e., Shrewsbury
   d. Increase utilization of Open Source software
   e. Network based solutions to include remote print capabilities in labs, residence halls, etc.

5. Information Systems
   a. Utilize tools and best practice to better integrate campus business practices in information and knowledge based systems
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Threats:
1. Funding of technology
   a. Without ongoing funding, initiatives are at risk of failing, i.e., FILP, technology enabled classrooms
   b. FILP – fear among faculty that cost of funding will force longer replacement cycle or do away with program altogether
   c. Inflation factor for electronic collections, IT hardware and software is not built into budgets
   d. Lack of technical staff to support the increase in IT demands (retirements also an issue)

2. Instruction
   a. Online courses are threatened with others getting into the “game”, i.e. Harvard
   b. Loss of funding for digital holdings could result in a loss of the entire journals. With print journals, if the budget is lost for a year, a few issues may be missed but retain all of the prior years’ issues. With digital holdings, if the annual fee is not paid, ALL past issues are lost

3. Sustainability of technology infrastructure
   a. Bandwidth: more, faster, more, faster
   b. Data theft: physical and electronic security
   c. Disaster recovery: Potential for loss of research data and $$ is significant. Along with SMAST, which has no way to back up massive data, many researchers are in jeopardy of losing electronic data
   d. Lack of reliable physical infrastructure to support technical infrastructure, i.e., increased number of electrical shutdowns significantly impact all technical infrastructure, inadequate electrical power and hvac
   e. Lack network redundancy for off campus access
   f. Student culture: Students utilize new technologies oftentimes differently from faculty and staff thereby creating the threat of a “divide”. The campus must address the ongoing need to reposition and utilize new technologies
   g. Dramatic growth in disk storage needs is a threat, because we need to provide and are borrowing to acquire infrastructure
   h. Fast upgrade cycles set by the IT industry

4. Information systems
   a. Purchases of hardware/software that do not consult with central IT may not perform as expected and can be very costly
   b. Lack of willingness to adapt business processes to new technology is costly. Resistance can lead to significant customization which costs money, staff time and resources and is not always practical in the long run

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