

**Campus Information Technology
Strategic and Tactical Plan, 2008-2009
Goals and Action Items
Status Report
January 15, 2009**

Infrastructure (Server, Storage, Database, Network, Internet, Voice, Video, Data)

Goal: Build and maintain a contemporary Cyberinfrastructure, including server, database, storage, network, internet, voice, video, and data infrastructure, which effectively supports the research, education, and administration of UMB.

Action Items and Status:

- Discuss and identify Cyberinfrastructure needs across campus and pursue opportunities for strengthening the UMB CyberInfrastructure. (2008) **In Progress**
- As part of the needs analysis, determine initial interest and demand for using a common high-performance computing center and systems for supporting UMB research and education projects. (2008) **In Progress**
- Based on need and demand, construct a common campus-wide computing facility for use by faculty for research and education projects which offers computational resources, back-up systems, storage resources, software, support personnel, and which is connected to the high-speed campus network and Internet. (2009) **In Progress. Discussions are underway to acquire space in a building contiguous to the UMB campus.**
- Participate on national Cyberinfrastructure workgroups and connect with higher education and federal agency sponsored computing grids, so that faculty have access to and can use available Cyberinfrastructure resources outside of the UMB network. (2008 and Ongoing) **Completed and Ongoing**
- Implement an electronic file transfer solution (Accellion product) that allows large files to be sent and received via email messages. (January 2008) **Completed for all faculty, staff and students.**
- Implement new hardware & software used for anti-spam, anti-virus, and message delivery. **Implementation complete. E-mail delivery, spam, and virus protection has been cutover to the IronPort appliances. The Meridius and Symantec architecture has been taken out of service.**
 - Re-architect systems (Fall 2007) **Completed**
 - Acquire new technology solutions (Fall/Winter 2007) **Completed**
 - Pilot test, evaluate, plan implementation (Winter 2007-2008) **Completed**
 - Transition to new services (Spring 2008-Summer 2008) **Completed**
- Active Directory/eDirectory linkage and information passing between the two directories. **Planned**
- Upgrade enterprise directory servers and software **Completed**
- Upgrade campus enterprise forest to Active Directory 2008. **Planned**
- Undertake planning and implementation of Microsoft Exchange 2007 **In progress. All hardware has been received and is currently being installed and configured. CITS continues to work with campus entities to prepare the Campus forest for installation of Exchange 2007. Spring '09**

- Develop process and plan for replacing the student email system
 - Undertake research and explore options **Completed**
 - Develop an implementation plan to move the services (review technology, processes, and create a timeline of activities) **Completed**
 - Implementation **Completed**
 - Evaluate outsourcing to Microsoft or Google **In Progress**
- Retire the existing Continuing Education Server and integrate into the Enterprise Blackboard server. **Planned**
- Upgrade Howard Hall to a redundant core campus network infrastructure. **Completed**
- Investigate with Facilities Management and propose a solution for a redundant network core in a second campus location. **In Progress.**
- Implement a redundant network core in a second campus location. **Planned.**
- Acquire, configure and implement two additional network/Internet routers that will provide another fail-over, redundant connection to the commercial Internet, as well as will provide a connection via the Mid-Atlantic Crossroads to the high-speed National Lambda Rail network. **In Progress**
- Acquire three additional T-1 lines for the UMB Annapolis Office (for a total of four T-1s), in order to enhance the Internet bandwidth needed for the UMB legislative staff in that office. **In Progress**
- To continue to build and maintain a converged voice, video and data infrastructure and deploy IP telephony (VoIP) **Completed and Ongoing. Successfully implemented VOIP in areas of HS/HSL, Social Work, Dental, Law, and for BioPark2 (Genome group), New Admin Bldg, and Homeland Security. New Phones are in the process of being installed in the remaining areas of the HS/HSL and the new President's Office, as well as additional phones to be installed in Dental, Law, Social Work. Others areas are planned.**
 - Continue to work with Administration and Finance to build the financial models for deployment of a contemporary communications infrastructure and VoIP in new and existing campus buildings **Completed**
 - Articulate these financial models to the campus community **Completed**
 - Consult and work with Facilities Management and school and department IT personnel, as well as with vendor personnel to implement and support this new infrastructure and VoIP in new buildings as well as when opportunities arise in existing buildings (renovations, department moves, facilities and technology upgrades)
 - Expand VoIP implementations in the Dental, Social Work, and Law Schools **In progress and planned**
 - Homeland Security in 300 Russell Street **Completed**
 - Bio-Park Building 2 **Completed (Genome group)**
 - Administration Building **Completed**
 - Campus Center **Planned, In Progress** (April 2009)
 - Pharmacy Hall **Planned** (Fall 2010)
 - HSF 3 **Planned** (2015-2020)
 - **In Progress: Throughout the HS/HSL, Implementation in President's Office**
- Investigate a campus feed for Plasma/LCD TV's on campus (fosters campus unity, helps in emergency/disaster management). **Completed and ongoing. The Schools of Social Work**

and Dental are using a Direct TV feed and Cisco equipment with NEC & SONY monitors for Digital Signage capability and displaying content in their buildings.

- Investigate a remote TV studio for campus (similar to http://ucsdnews.ucsd.edu/thisweek/2004/oct/10_18_experts.asp). **Planned**
- Investigate the possibility of strengthening and expanding cellular coverage in campus buildings. **Planned**
- Document every building's copper/fiber connections as well as switch configurations for the campus. **Completed**
- Implement new DNS services for the campus **Completed**
- Provide storage and associated technical support for a campus document imaging/management system. **Completed. 21,000 page images have been indexed and stored in the system.**
- Continue to explore the current and future needs for network infrastructure to support the use of the new technologies utilized by the schools. **In Progress**
- Complete the selection and implementation of a load testing tool for performance testing. **Completed**
- Conduct Storage Area Network (SAN) capacity planning to accommodate current and near-term production system growth. **Completed. Will result in the purchase of a new campus SAN and the migration of data in an existing SAN to an enhanced enterprise storage solution this spring, 2009.**
- Install and configure Oracle Data Guard for stand-by environments. The applications targeted for stand-by environments are Blackboard, SIMS and CMS (Site Executive). This will first be tested in a development environment and later moved to production. **Blackboard, QuestionMark and COEUS completed: Other Environments In Progress (SIMS and Content Management System: target end of January 2009)**
- Install and configure Oracle for the new Blackboard development and production database servers. **Completed**
- Revisit Oracle backup strategy (e.g. RMAN, scripts) based on requirements and improved Oracle features. **Completed and In Progress**
- Investigate current Oracle features to address regulatory requirements regarding databases. **In Progress**

Enterprise Systems

Goal: Implement and provide support for systems which provide members of the UMB community with convenient, intuitive and authorized access to data that promotes the efficient administration of the University.

Action Items and Status:

- Web Admissions Credit Card rollout. **Completed**
- Expand availability of eUMB enterprises systems by 3 hours/day. **Completed**
- Continue investigating additional contemporary methods and technologies, and if feasible, proceeding to further expand the availability of systems **In Progress**
- Enhancements to the EHS Training application. **Completed**
- Implement Non-Resident Alien solution and create new interface to the State Central Payroll Bureau **Completed.**

- Archibus implementation **Phase I (access to space data) is complete. Phase II (tying space data to research) awaiting vendor deliverable before implementation can be finished.**
- Tools and database upgrades for Financials, RAVEN, and Portal. **In Progress This will be completed in the first quarter of calendar 2009 (March 2009)**
- Create new faculty training and support opportunities for Blackboard and QuestionMark. **Underway and more activities planned**
- Incorporate Central Billing into eUMB. **Planned. Will begin analysis in first half of calendar 2009.**
- Work with Administration and Finance to implement a new solution to replace the existing Check Tracking System for student refund management. **Completed. The first student refund disbursement completed on January 6, 2009.**
- Support Blackboard hardware upgrades and stabilization. **Completed**
- COEUS implementation through conversion, proposal development, Institute Proposal, Award Modules **Completed. Coeus is in full production.** Reporting, and interfaces: **RAVEN reporting pages will be in production by the end of March 2009. Technical analysis and design work for interfaces between eUMB and COEUS begins the end of January 2009.**
- Implement Asset Management Module. **Completed**
- Pilots for SIMS, CAPP (Degree Audit) and Prospect Recruiting. **In Progress. CITS work is proceeding with the pace of the participating schools**
- Replace Working Fund system with eUMB functions **Planned. After Central Billing Project is finished.**
- Support Campus implementation of Document Imaging/Management Solutions. **83 concurrent client licenses and 13 workstation licenses purchased. Accounts Payable and Working Fund departments are in production, Completing planning in Restricted Funds and Human Resources, SOM Office of Records & Registration is beginning project planning. Restricted Funds will be paperless by mid-February, HR will begin digitalizing and indexing employee jackets within the next two weeks (will be paperless by end of February). Nursing, Graduate School, Financial Aid, and Social Work are beginning planning stages for document management projects.**
- Begin planning for HRMS and Portal upgrades to new versions with new functional capabilities. **Planned. Gathering data/input from campus. Attempting to prioritize in light of current budget situation. This will be complete in the first quarter of calendar 2009.**
- Implement new Direct Loan Program within Banner financial aid. **Completed. All technical set up and testing is complete. Financial Aid will implement with some schools during the spring 2009 semester.**

Campus Directory Services, Identity Management

Goal: Continue to use and build upon the directory services, identity management architecture that facilitates the use of a common ID and single sign-on, as well as the provisioning and de-provisioning of computer accounts.

Action Items and Status:

- Create a campus-wide group to discuss Directory Services, Identity Management, and related technologies (e.g. Shibboleth).
 - Provide regular information exchange between CITS and campus schools in order to leverage these technologies **Completed and ongoing**
- Work with Applications staff to reduce the number of UserIDs, utilizing the enterprise directory for authentication
 - Work with the SIMS/Banner team to configure Banner & SURFS to authenticate using the myUMB ID and password
 - Perform analysis **Completed**
 - Configure Banner and SURFS **Completed**
 - Implement **Completed**
 - Work with the Blackboard team to configure Blackboard to authenticate using the myUMB ID and password
 - Perform analysis **Completed**
 - Bring up Shibboleth services **Completed**
 - Configure Blackboard **Completed**
 - Implement **Applications and Infrastructure staffs are working together to complete. Work on Blackboard/Shibboleth will continue into the Spring 2009 semester. The first phase is to replace UMnet with the Enterprise Directory for Account Provisioning.**
 - Work with the Student Email team to analyze & configure student email system to authenticate using the myUMB ID and password
 - Undertake research and explore options **Completed**
 - Begin technology review process, implementation planning **Completed**
 - Implement and launch **Completed**
- Creation/Launch of ID Management Web site **Completed**
- Active Directory-Directory Services Linkage information passing. **Planned**
- Begin writing scripts to populate Global Address List. **Planned**
- Determine requirements for account provisioning/decommissioning. **Planned**
- Work with entities not in the campus Enterprise Forest. **Planned**
- “Day Zero” account creation & access to UMB systems. **Planned**
- User self registration on the day they arrive on campus establishing their presence in the Enterprise Directory. **Planned**

Disaster Recovery

Goal: Ensure that the campus is able to continue critical operations during a crisis which affects the equipment normally used to support those operations.

Action Items and Status:

- Off-site tape storage will be done twice-*weekly* at the Iron Mountain Corporation secured facility. **Completed**
 - Test the restoration of the backup media from off-site storage **Completed**
- Online systems backup and data storage will be created outside of the HS/HSL. A redundant failover campus location, as well as an off-campus site for equipment and online back-ups of critical systems and data will be pursued. **Redundant hardware, purchased to avoid risk, includes COEUS web server for emergency use at Howard Hall; myUMB Mail server and Mediasite server and storage placed at the Dental School.**
- Install a second network switch for redundancy at the core location in Howard Hall **Completed**
- Investigate with Facilities Management and propose a solution for a redundant network core in a second campus location **In Progress, Location identified, negotiations In Progress**
- Implement a redundant network core in a second campus location **Planned**
- Investigate a campus feed for Plasma/LCD TV's on campus (fosters campus unity, helps in emergency/disaster management). **Completed and In Progress. The Schools of Social Work and Dental are using a Direct TV feed and Cisco equipment with NEC & SONY monitors for Digital Signage and displaying content in their buildings.**
- Continue to promote the use of the UMB text messaging solution for emergency communications and disaster management. **In Progress, tests have been successfully completed.**
- D/R Maintenance and Training
 - Create procedures for testing D/R Plan to address D/R Plan scenarios
 - Loss of Backup Storage **Completed**
 - Loss of Voice Services
- Document the testing of temporarily rerouting voice and data services from any campus building, based on the SSW implementation. **Completed**
- Backup Computer Facilities:
 - Test the restoration of a Campus Active Directory schema via VMWare in a lab environment. **Completed**
 - Relocate development hardware for critical application to a remote site (e.g. Howard Hall) **Completed**
 - Create stand-by databases for critical applications. **Completed Blackboard, QuestionMark and COEUS. Other Environments In Progress (SIMS and Content Management System: target end of January)**
 - Loss of Campus Active Directory Forest **Completed**
- Test technology and procedures in the disaster recovery plan **Completed and In Progress**
- Documentation on D/R testing and any new procedures **Completed and In Progress**

Technology Security

Goal: Address requirements and vulnerabilities with appropriate technologies and create greater awareness of the impact and importance of IT security.

Action Items and Status:

- Implement new hardware & software to strengthen the current infrastructure for anti-spam, anti-virus, and message delivery prior to the implementation and migration to a new architecture and new technologies for anti-spam, anti-virus, and message delivery. **Completed**
- Implement a campus web-based VPN server **Equipment installed, configuration will be completed in February 2009.**
- Reconfigure central services into protected VLAN's and DMZ's **Completed**
- Enhance wireless security while expanding campus wireless infrastructure **Completed. Currently enhancing HS/HSL network, other campus building will follow.**
- Extend quarterly scans to include schools/departments **Planned (Summer 2009)**

Service Delivery

Goal: Provide a highly effective delivery of service and support system which focuses on the needs and requests of students, faculty, staff, and administrators; apply and adapt technology to improve the quality of this delivery.

Action Items and Status:

- Expand Help Desk service hours to 24 hours a day and 7 days a week. **Completed but; due to low call volume and the service was not being delivered as expected, it was not prudent nor cost effective to continue with this approach. CITS has implemented additional measures this year to strengthen systems availability which has been a contributing factor in the low after-hours call volume. We have also implemented automated notification systems to alert appropriate support staff in the event of a critical systems problem. CITS is staffing the HELP Desk on Saturdays and Sundays from 8:00 a.m. until 5:00 p.m. to assist users via phone and email. CITS will also be staffing a limited second shift to support critical systems (Monday to Friday 5:00 p.m. to 10:30 p.m.). Users can report problems by leaving a voice mail message at 410-706-HELP or sending an email to help@umaryland.edu. Support staff will check the voice mail messages and notify appropriate staff members. They will also follow-up with the caller to confirm that the message was received and recorded.**
- Provide regular communications (CITS Bits, email, text alerts) **Completed and Ongoing**
- Upgrade the T-Metrics Help Desk call management software **Completed**
- Replace the T-Metrics hardware with a more powerful server **Completed**
- Implement a “knowledgebase” to replace Frequently Asked Questions (FAQs) **Planned**
- Streamline the process for providing email and Blackboard IDs for new students **The move to account provisioning from the Enterprise Directory is currently in process as part**

of the tasks in taking UMnet out of service. This activity is a prerequisite for the move to LDAP authentication using the myUMB ID for Blackboard.

- Investigate new help desk software as a replacement for Remedy **Planned**
- Further structure/develop the software licensing office to provide greater volume purchasing power for the campus commonly used software products. **Ongoing**
- Continue to coordinate and offer training in the use of enterprise systems. **In Progress**
 - Create a model for campus wide training in all essential enterprise systems.
 - Develop an online infrastructure to support and deliver the training.

Technology for Teaching and Learning

Goal: Support faculty in their use of on-line and classroom technologies and their initiatives to enhance instruction and learning with technology.

Action Items and Status:

- Leverage the enterprise directory so that students and faculty have a single login to multiple applications. **Completed and In Progress. , SIMS and my UMB mail are completed and in production; and, Blackboard will be completed Spring 2009.**
- Develop a structured online faculty development environment that would include available resources and services for faculty. **In Progress**
 - Consult with colleagues at other institutions that have created online faculty development environments.
 - Identify a list of relevant UMB and school specific resources and services.
 - Design a template for this environment.
 - Complete and distribute this online faculty development environment to faculty.
- Develop a standard training program that could be used by either the enterprise training group or individual schools. Regardless of the platform, it would allow the schools to share both training content and user data. The program would do the following:
 - Deliver text, image, Flash, etc. training. **Completed**
 - Develop campus-wide multimedia training, including the use of audio/video technologies. **Completed**
 - Create training and support program for faculty in using Blackboard, QuestionMark, and other eLearning software. **Completed**
- Installation and configuration of new Blackboard architecture **Completed**
- Install and configure Oracle for the new Blackboard development and production database servers. **Completed**
- Create an AV support team that would include support for Mediasite, Crestron, and other products used in classrooms. **In Progress. Individuals have been identified and are communicating and working together as needed.**
 - Leverage school and department Audio Visual needs and create a campus-wide AV team. The AV team would discuss needs, acquire and share knowledge, and coordinate the purchase, implementation, and support of AV technologies across the schools.

- Creation of a support structure for basic or common end-user issues while using Mediasite for lecture viewing.
- Creation of a group devoted to the continued support of the campus enterprise Mediasite installation directing use, advising on maintenance/support, sharing best practices, and providing advisement for other MediaSite related administrative issues.
- Leverage the support offered by Crestron Corp. to acquire additional knowledge and enhance the software and hardware capabilities of the Crestron device.
- Reduce the number of Blackboard accounts to one per person. **In Progress**
- Continue efforts to introduce iTunes U in the schools, HS/HSL and departments. **Completed. Campus site has been built. Schools and departments have taken ownership of their sites. Public content is being posted and the site will be available to the public by end of January 2009.**
- Coordinate and facilitate the development of a “program guide” for initiating distance-learning programs. **Planned**
- Develop an understanding of the “Domain Security” model provided as a part of the Blackboard Community System. Articulate guidelines for the use of this functionality by schools and departments on campus. **Planned**
- Develop the Blackboard Branding model to allow each school the ability to tailor it to their student body. **Planned**
- Implement Guest Access in Blackboard to allow enrollment of faculty in order to facilitate curriculum development and review. **Planned**
- Continue planning of Symposium with continued support and representation from the Education Technology Committee (ETC). **Completed**
- Continue to use contemporary technologies to support the delivery of content to remote locations. **Completed and Ongoing**
- Continue to introduce and coordinate technological innovations that may have application across all schools. **Completed and ongoing**

IT Architecture for Interconnected Wireless Computing

Goal: Build a wireless environment that provides Internet access as well as a secure, universal authentication solution for gaining access to school, and department sub-networks.

Action Items and Status:

- Enhance wireless security while expanding campus wireless infrastructure **Completed, In Progress, and Planned**
 - Implement a wireless environment such that a user will be able to authenticate to the wireless network as faculty/staff, student, or guest. Once that authentication is complete, users will be able to move to other areas of the campus and use a common ID for authenticating to the wireless network. **In Progress.**

- The campus wireless will be activated in the Schools of Social Work, Law, Pharmacy, Dental, A&F in the Saratoga Garage, the new Administration building, new Campus Center and in the HS/HSL. Additional departments and schools will be brought online as opportunities develop. **Completed for Law, Dental, Social Work, and Administration Building and expanding in HS/HSL. Pharmacy, Nursing and Campus Center planned. Other buildings and areas of campus will be brought online as opportunities develop.**
- Authentication will be in conjunction with the campus enterprise directory. Currently there are three wireless VLANs (Faculty/Staff, Student and Guest). Once the directory services connection has been established, there will be consolidation to one wireless VLAN. Based on the credentials of an individual at authentication, users will be routed to the appropriate network, i.e., the faculty/staff, student, or guest VLAN. **In Progress**

Web Development, Environments

Goal: Enhance the web presence for the schools and the University as a whole by building dynamic and interactive environments for sharing and collecting information.

Action Items and Status:

- Diet/Nutrition Study Application **Completed**
- Expand infrastructure and complete CMS hardware/software separation. **Completed in October '08. Currently training campus users on the new functionality**
- Work with System Alliance to ensure the stability and reliability of the SiteExecutive content management system. **Completed**
- Complete Comprehensive Campus Calendar **Completed**
- Train school/department representatives in the use of this master calendar. **Completed**
- ORD Technology Application (Phase 2) **Completed**
- WAP online directory lookup **Completed**
- Nursing Global Health Website. **Completed**
- HR "Careers in Baltimore Healthcare" website. **Completed**
- School of Social Work, Field Placement Application. **Completed and ongoing**
- Significant enhancements to Poison Center Application. **To be completed 1st quarter of 2009**
- Continue to work with schools/units in redesigning websites and designing and building web applications. **Completed and ongoing**