

EMORY UNIVERSITY
Information Technology Division (ITD)
Annual Report
FY 2003-04

Executive Summary

The Information Technology Division strategic plan with objectives for FY04 was approved by the Provost in August 2003 and posted to the division web site at that time. This report gives an accounting of progress toward the goals and objectives of that plan. As in prior years we have organized the report by restating the goals and objectives in blue, and then showing progress toward these goals and objectives made in the past year.

As you will note, substantial progress was made on all fronts in the past year. Within the academic area a few of the highlights include completing our first full and very successful year in the Computing Center in Cox Hall, substantial growth in the number of courses with material on the web, new services offered such as Insight for storing and managing images including the art history collection, training and support for faculty and students and an outstanding EduCATE conference.

Progress was also made in the delivery of services to faculty, students and staff through our administrative systems. PeopleSoft Student and Human Resources systems continue to run in a complex environment within budget and with projects staying within delivery timeframes. The new Institutional Advancement system met all scheduled delivery dates and was also well within budget. Services continued to be delivered to other systems such as Purchasing, Research Administration and Finance. Substantial progress was made in eliminating our use of non-standard databases which will result in reduced software licensing costs in future years. And several web applications were created to support Trustees, the President's Office and others.

Technical Services also enjoyed a year of progress on several fronts. Many security enhancements were made in the areas of intrusion prevention, SPAM filters, and protection against viruses, worms and hacker attacks. Efforts in these areas were put to the test by an internal audit of PeopleSoft security which showed no significant findings. Other recommendations found in the audit report to strengthen our security have been implemented. The technical services group has used this year to strengthen infrastructure through replacement of aging equipment and better architectural design.

The operations unit continues to provide 24/7 services to the Emory Enterprise including Emory HealthCare IS operations. Once again all service measures for uptime for major systems for both HealthCare and the University applications were met. Progress was also made in reducing our risk in the data center by improving the fire suppression system, adding electrical redundancy, and in some cases building network redundancy. Ways and Means approval of the next stage of the disaster recovery plan allowed us to take further steps to improve our disaster recovery preparedness.

Unexpected opportunities came this past year in personnel changes at the senior level of the organization. With the support of the Provost and the General Counsel a new Director position was created for IT Policy and Legal Compliance. And with the support of the Provost and other academic leaders a new Director of Academic Technologies position was created to help strengthen our support of research initiatives. Both of these positions were filled with excellent candidates who are making a substantial contribution to the University. The year was also marked by the voluntary departure of our Director of Technical Services. While this individual will be missed, the opening allows us an opportunity to consider organizational changes and to bring new talent to the division to better position us for the future.

As the University continues to work through the strategic planning process for the institution, the Information Technology Division will seek to understand how to best position central IT resources to address new strategic initiatives. If we have one word to describe our position for the coming year it is to remain *agile* and ready to develop partnerships with academic and administrative units as their plans are defined and institutional priorities are established.

I invite your feedback on this report as well as your thoughts on how the Information Technology Division can better contribute to the work of the University.

Donald E. Harris, Ph.D.

Vice Provost for Information Technology & Chief Information Officer

INFORMATION TECHNOLOGY DIVISION
2003-2004 ANNUAL REPORT

ACADEMIC TECHNOLOGIES GROUP (Alan Cattier)

1. Utilize IT resources in support of the teaching mission of the institution.
 - a. Work with Tech Services to operationalize Blackboard Version 6.1, Learning Portal with automated data feeds to populate classes
 - 1.) Blackboard 6.1 (BB6.1) was installed and available for testing and development in Spring 2004
 - 2.) Over summer 2004, established a production environment and migrated all content to the new environment for the beginning of fall 2004 semester
 - b. Implement Luna Technologies Insight on behalf of the Art History Slide Library
 - 1.) Art History offering multiple classes using newly available digital slide library
 - 2.) Faculty and TA training successfully delivered on how to maximize impact of new tools for teaching and researching Emory's image collection
 - 3.) TS completed the installation of the infrastructure (spring 2004)
 - c. Prototype Luna Technologies Insight with a personal image collection, starting with Classics
 - 1.) Personal Image Collection Manager due to be released in June 2004
 - d. Work with the Carlos Museum on Gallery System initiative
 - 1.) TS provided ongoing support for the server and databases that support the Gallery System
 - 2.) ATG created a five-year plan for Carlos Museum migration, which awaits funding
 - e. Deliver faculty training within ECIT and the Language Center for the Professional Schools and Emory College
 - 1.) Led training sessions for 40 faculty participants:
 - a.) "Lunch and Learn" Series: "Transitioning Online Course Content from LearnLink to Blackboard" (11/03) and "Introduction to Blackboard" (3/04)
 - b.) EduCATE conference: "PowerPoint (presentation)," "Dreamweaver (Web page creation)," "iMovie (digital movie editing)," "Fireworks and Photoshop (images for the Web)," "Blackboard (online course management system)" and "Advanced Blackboard (assessment creation)" (3/04)
 - 2.) Conducted Language Center Online for faculty who teach Chinese, French, Portuguese, Spanish, and Hindi (5/04)
 - 3.) Taught Emory College Online, which provided faculty with hands-on training and assistance with placing an undergraduate course on the Web using Blackboard course management system (6/04)
 - f. Expand use of "visiting scholars" using videoconferencing to Emory's classrooms
 - 1.) Purchased and installed a videoconferencing bridge unit to support the Center for Behavioral Neuroscience
 - 2.) Hosted weekly conferences for Emory, Georgia Institute of Technology and Georgia State University
 - g. Work with Tech Services to implement WebDAV solution for Blackboard

- 1.) Content management system for BlackBoard currently in evaluation for installation in fall 2004 and production deployment in 1/05
 - h. Implement a grad student technology and teaching training program
 - 1.) Callaway Graduate Lab rearchitected to better support needs
 - 2.) Following the recommendation for improvements to the TATTO program, worked with the Graduate School of Arts and Sciences to deliver training in teaching with technology to all graduate school participants
 - i. Plan online course architecture with the schools of Medicine, Business and Nursing, and assist with online training if requested
 - 1.) Not requested
 - j. Plan online course architecture with the Candler School of Theology and assist with online training, if appropriate and requested
 - 1.) Funding not available
- 2. Enhance facilities and the web in support of the academic mission of the institution.**
- a. Continue to review relationships between ECIT and the Language Center and Cox Hall with an eye toward furthering the Multimedia Support Infrastructure that is shareable between the three spaces
 - 1.) Created a “Centers Collaboration” weekly meeting with the three facility directors and support staff
 - 2.) Worked with LAN Engineer to create a common server space for file storage and retrieval
 - 3.) Created common training materials and tip sheets for courses taught in three Centers
 - 4.) Unified software packages and user interface in three facilities
 - 5.) Continued work on portal site and on the redesign of sites for the individual centers
 - b. Create Collaboration infrastructure in classrooms of Cox Computing Center
 - 1.) Installed IROS¹ software in center classrooms
 - 2.) Installed and facilitated use of Macromedia Contribute for GER 190 course
 - 3.) Installed Polyvision LTX whiteboards for enhanced digital capture and collaboration
 - c. Investigate, and with approval, implement technologies and/or events that bring faculty and students together in Cox Computing Center
 - 1.) Upgraded SMART² systems throughout the center, enhancing collaborative space
 - 2.) Upgraded Macintosh operating systems in center and classroom A to better utilize video editing technologies
 - 3.) Hosted reception and demonstrated technologies for EduCATE participants
 - 4.) Managed rotating student art exhibit in center gallery and hosted a reception for student artists
 - d. Work with Residence Life to propose Collaboration Commons between dormitories and technologies that bridge campuses
 - 1.) Planning collaborative technologies as a pilot project in the Spanish House (fall 2004)
 - 2.) Planned initial design for a new Woodruff Residential Center space for the new Sophomore Experience in fall 2005

- e. **Work with Residence Life to propose framework for creating a "Hallway of the Future"**
 - 1.) Held ongoing conversations with the housing director about proposals for future renovations in residences
 - 2.) Consulted with Student Government Association (SGA) representatives on new technologies for residence hall labs that move beyond basic computing and free printing
 - f. **With the Classroom Technologies Team, strategize and design appropriate community spaces in the Residential Labs**
 - 1.) Conducted a preference survey of all Clairmont graduate residents for collaborative technologies in their residential lab
 - 2.) Designed placement of media equipment in the Student Activity and Academic Center (SAAC) lab
 - 3.) Designed and installed computer lab for Building H
 - 4.) Designing new sophomore facilities in Woodruff Residential Center to be available in Summer 2005
 - g. **Continue to assist Residential Life in designing and implementing classroom technologies in SAAC**
 - 1.) Installed a 3000i Rear Projection SMART Board and whiteboard capture device [Polyvision Copy Cam] in the lab
 - 2.) Conducted audiovisual equipment training session with staff and student support staff on 2/04
 - 3.) Partnered with staff to implement an audiovisual support system and supported presentation system help calls
 - 4.) Provided on-site assistance with audiovisual equipment, when required
 - h. **Strategize support models and, if appropriate, seek funding for supporting appropriate class spaces in SAAC**
 - 1.) Office of Disability Services used the SAAC computing lab for a class in assistive technologies during spring Semester 2004
 - 2.) Worked with SAAC director in allowing College faculty access to the SMART 3000i in the lab space for irregularly-scheduled classes
 - i. **Work with Oxford College on the design and configuration of collaboration spaces in Kaleidoscope and the Humanities Multimedia Lab**
 - 1.) Visited lab in Spring 2004 and provided an overview of technologies currently in use on the Atlanta campus
 - j. **Revise and further develop a grad student support Web site**
 - 1.) Modified existing graduate student Web site and migrated the site to <http://it.emory.edu/showdoc.cfm?docid=1281>
 - k. **Design new processes for designing and maintaining Emory College's web site, beginning with the Arts at Emory site**
 - 1.) Design and documentation put in place for a migration of Emory College's Web site to the Maple environment
- 3. Continue the development of virtual communities to support academic work**
- a. **Work with Tech Services to investigate new email technologies that might replace Dooley mail and LearnLink's backend while searching for products that support online communities**

- 1.) Participated, with other ITD units, in the provost's and executive vice president for Finance and Administration's EmoryLink project
- 2.) Investigated and rejected FuseTalk as a bulletin board system solution
- b. [Continue to migrate academic teaching content off LearnLink and towards BlackBoard](#)
 - 1.) Advised faculty with new course requests for LearnLink space to use Blackboard where possible
 - 2.) [See #1.e.1.]
- c. [Implement Connect 2008 with the Admissions Office](#)
 - 1.) Created Connect2008 conferences by 12/03, for all accepted students in the Emory and Oxford Colleges
 - 2.) Supported Connect2008 through early and regular admissions sessions
 - 3.) Over 1200 students participated in Connect2008
 - 4.) Wrote letter for admissions packet with account and computer purchase information
 - 5.) Worked with bookstore to include their online offerings in the conferences
 - 6.) Worked with parent program to send information technology (IT) security brochures and contact information in mailings to early decision students
- d. [Implement Fuse Talk with Tech Services](#)
 - 1.) Because of technical shortcomings of this product, which were identified in product testing and analysis, elected to not move forward with the implementation
- e. [Work with Tech Services to investigate new portal designs that might aggregate student computing needs](#)
 - 1.) Concluded that Blackboard provides a portal solution
 - 2.) Participated in ITD Intranet Project
- f. [Investigate instant messaging architectures that might be implemented across Emory](#)
 - 1.) Piloted instant messaging within the division, as a part of the Intranet project (a project that will provide an internal Web site for ITD), to determine the feasibility of Emory implementation

4. Enhance the use of IT in the classroom

- a. [Continue to provide support for presentation technologies in classrooms](#)
 - 1.) Delivered successful day-to-day operations supporting academic presentation technologies in College classrooms
 - 2.) Managed ongoing technical maintenance of classroom audiovisual equipment, computer hardware, software, customer service and Help Desk operations
 - 3.) Provided special events consulting services
 - 4.) Maintained equipment loaner program
- b. [Continue to assist the College and Facilities Management academic infrastructure teams in designing and integrating presentation technologies into new and renovated classrooms, departmental spaces, and common areas](#)
 - 1.) Served as ongoing member of College Classroom Infrastructure Team
 - 2.) Completed design and bid process (5/04) for summer 2004 renovations and equipment replacements to 28 shared and College classrooms across campus to be completed by August 2004
 - 3.) Completed integration of new SMART board audiovisual system into Spanish Department classroom in Callaway 501 in January 2004
 - 4.) Installed a replacement 3000i into Educational Studies Department classroom in January 2004

- 5.) Worked with the College to facilitate creation of new smart rooms by renovating AV in existing registrar scheduled classrooms including Bowden #116, Tarbutton #321, North Decatur #107 and in the Music Department classroom in Burlington Road #108
- c. [Operationalize, where possible, eControl technologies for remotely administering classroom operations](#)
 - 1.) Continued use of e-Control in Mathematics and Science Center
 - 2.) Planned with NetCom and a multimedia vendor to add additional classrooms and building locations if funded
- d. [Cross train with College Local Support Team on local support requirements for Classroom Technologies and continue in enhancing support roles](#)
 - 1.) Completed successful Bring Your Own Laptop (BYOL) training session for Local Support (LS) providers including technical hands-on instruction on the most common and challenging laptop/data projection setups
 - 2.) Attended three Emory College Local Support Team meetings (one per semester) by invitation of the director of Academic Computing for Emory College
 - a.) Shared information regarding classroom technologies and facility upgrades that effect local support activities
 - 3.) Completed meetings with smaller local support provider teams to target technology needs and conducted basic SMART room training
- e. [Partner with Academic Community team and the Office of Student Activities to develop presentation technology and event planning outreach programs for student groups](#)
 - 1.) Partnered with Academic Community Team and the Office of Student Activities to develop presentation technology and event planning outreach programs for student groups
 - 2.) Partnered on SAAC presentation technology upgrades to computing lab
 - 3.) Conducted training session on SMART technologies in SAAC on 2/04
 - 4.) Offered technology familiarization seminars in White Hall for Student Activities leaders on 10/20-21, and 11/3,6/03
 - 5.) Consulted with student group event planning coordinators
- f. [Work with the Music and Media Library to identify and maintain appropriate classroom presentation equipment that satisfies the in-class needs of both old and new media in the collection](#)
 - 1.) Completed study including number and type of media housed in the Music and Media collection on 3/29/04
- g. [Investigate then build or purchase an application that would automate AV equipment scheduling, tracking, inventory and rental pool checkout; produce a daily service point time schedule and statistical reporting](#)
 - 1.) Researched appropriate software products
 - a.) Identified On Shore Development Web Checkout pricing structure and implementation schedule
 - b.) Continue to research R25³ as a possible option
- h. [Define a replacement schedule for major classroom equipment](#)
 - 1.) Constructed a basic informational database for classroom equipment
 - 2.) Partnered with director of Academic Computing for Emory College to define major equipment replacement projections
 - 3.) Presented to the College a three-year replacement schedule for data projectors in College classrooms

- 4.) Successfully implemented replacement schedule for equipment in over twenty rooms in summer 2004
- i. Prepare guidelines that present standardized classroom models that can be shared with the Professional Schools and when invited to participate, assist in the area of classroom design
 - 1.) Prepared "Audio Visual and ITD Resources in College Classrooms" document outlining standardized classroom model and cost estimates
 - 2.) Consulted with Goizueta Business School on classroom design and support
 - 3.) Participated in Library Committee exercise investigating classroom designs and support models for new library computing classrooms
 - 4.) Consulted with School of Public Health on classroom design and use of presentation technology in common spaces
- j. Explore and implement new classroom training initiatives for faculty
 - 1.) Developed and produced web-based SMART classroom training video
 - 2.) Developed and presented hands-on SMART classroom familiarization sessions during the beginning of both fall and spring 2004 semesters for departmental faculty including the German Studies, Russian and East Asian Languages and Cultures, Educational Studies and Spanish departments. Also held sessions for ITD Technical Services staff
- k. Explore and employ new teaching/learning technologies into College classrooms and meeting spaces and where appropriate, work to provide access to previously unavailable technology resources
 - 1.) Integrated into Computing Center at Cox Hall classrooms two new multimedia whiteboards that record, store, and print previously captured meeting notes
 - 2.) Installed USB storage device access in all SMART classroom lecterns and added device instruction into faculty training sessions
 - 3.) Installed SMART board technologies and audiovisual equipment in the North Decatur Building and Enterprise rooms and a Copy Cam in the Savannah room
 - a.) Developed support models and delivered audiovisual training to ITD staff
 - 4.) Partnered with Local Support providers to enable use of classic Roman fonts in the teaching of Classics in Candler Library classroom
 - 5.) Tested use of tablet PC's in conjunction with presentation technologies in classrooms
 - 6.) Integrated new Polyvision LTX multimedia white board capable of note capture and storage - into the Psychology Computing Classroom in 1462 Clifton Road Building - Room 123
- l. Represent Emory by way of participation in regional and national trade and higher education organizations. Also present nationally on key initiatives and findings from Emory academic technology facilities and programs
 - 1.) INFOCOM selected three presenters from Classroom Technologies to speak on classroom design and the use and support of presentation technologies 6/8-11/04
 - 2.) Selected to speak at the Society for College and University Planning (SCUP) on classroom design and implementation partnerships. Presented, with Facilities Management (FM) and Emory College, "Five Years in the Trenches with Classroom Technologies" (7/04)
 - 3.) Invited to deliver presentation at Educom on "Designing Classrooms of Tomorrow" (6/9/04)

- m. Explore funding possibilities and begin planning a "classroom of tomorrow" initiative exploring new and innovative spaces for Emory's faculty and students
 - 1.) Collected information on classroom design through survey, research, and site-visits at other institutions

5. Review IT and Library partnership and develop infrastructure for student collaboration spaces in the library. Also plan for evolution of library systems.

- a. Work with the Library on ongoing Infocommons replacement cycles and aid in redesign of Infocommons, if appropriate and if requested
 - 1.) Replaced over 50 Woodruff Library Infocommons computers and 70 monitors (1/04)
- b. Prepare a report for the Vice-Provost of Information Technology and Vice-Provost of the Libraries on Sirsi's migration to Oracle
 - 1.) Sirsi⁴ evaluation and testing schedule delayed until December 2004
- c. Plan and present three year projecting of Library catalog systems hardware and storage requirements with full budgetary implications
 - 1.) Sirsi evaluation and testing schedule delayed until December 2004
- d. Participate in Library space council looking to partner with the General Library on innovative teaching, learning, researching, and collaborating spaces
 - 1.) Contributed full-time ITD representation on the space planning council to evaluate ongoing renovation of ITD and library spaces
- e. Partner with the Library in an ongoing review of the Technology Centers with an eye towards renovating the Centers in summer of 2004
 - 1.) ECIT redesign funded and implemented during summer 2004 with major furniture replacement and the addition of a flexible, mobile computing classroom
- f. Focus on Statistical Support and working with the Library on a support model for Emory's researchers
 - 1.) Met with social sciences faculty on support for statistics
 - 2.) Worked with faculty to seek better support and facilities, including in the Woodruff Library, with provost sponsorship
- g. Participate with the library in the development of policies, procedures, and guidelines for image database collections including the definition of metadata parameters that might be implemented on initiatives that can be shared nationally
 - 1.) Worked with the library VIEWER project to identify best practices for managing image databases
 - 2.) Selected Duke University's handling of their image resources as a model to emulate at Emory

6. Other work of the Academic Technologies Group

- a. Support Online voting amongst Emory students
 - 1.) Ran freshmen elections for the Student Government Association (SGA), College Council, and Residence Hall Association (RHA)
 - 2.) Ran spring officer/representative elections for SGA, College Council and RHA with record participation
 - 3.) Conducted a focus group with advisors and students on improvements to election program

- b. Integrally include Tech Services on an outreach initiative to educate students about patching their operating system, preventing unwanted access to their resources using Kazaa, updating virus definitions, and using energy saving configurations
 - 1.) The Security Team participated in back-to-school orientation for schools on campus
 - 2.) ATG and TS implemented a Security Awareness Program consisting of:
 - a.) Posters for ResNet and faculty/staff audience
 - b.) Two emails to all students with details on virus infections and removal tools
 - c.) A LearnLink conference on all desktops with information on removal tools
 - d.) An email to all residential students
 - e.) A full-page Wheel ad in 1/04 on virus infections and security remedies
- c. Implement a strategy with Client Services to address computer security issues for students and faculty
 - 1.) Created the Emory OnLine CD with eVax tools as a technical support and user tool to remove viruses, install anti-virus software, patch Windows Operating System, and perform other related operations on all laptops of residential students, non-residential students, faculty, and staff who choose to use the free service or are identified by ITD Security and NetCom
 - 2.) Opened a Clean Room facility to clean and patch student laptops that were identified by Netcom and the Security Team
 - a.) Will continue operating Clean Room as a permanent service
 - 3.) Wrote *EmoryReport* "Technology Focus" article, "A Primer in Desktop Security" to raise faculty awareness (10/10/04)
- d. Staff and support Educate 2004
 - 1.) Designed promotional materials for conference participants and faculty
 - 2.) [See: 1e (1.); 2c (3.)]
 - 3.) Served as consultant and lead audiovisual technical support for conference
- e. Review television programming strategies and the degree to which we can support the academic mission of the university with this technology
 - 1.) In discussions with Housing about adding an Emory students' channel in fall 2004 to support the academic and community life of the university
- f. Add Hebrew and Japanese programming to Emory's academic cable system
 - 1.) Hebrew, Japanese and Russian programming added (fall 2004)
- g. Support online web programming and design needs of Holocaust Denial on Trial
 - 1.) Pursued full security audit of HDOT website and implemented a full mirror environment to assist in developing the site to generate better metadata (in process)
- h. Support online web programming and design needs of NEH Grant
 - 1.) Victorian writers' project in active development
- i. Support web review of programming and design needs of Nursing School
 - 1.) Consulted with and actively partnered in the Nursing School migration from their Web server to the Maple environment
- j. Work with the Office of Research to coordinate technology needs and technology impact for sponsored research
- k. Aggressively work with Netcom to implement wireless voice and data across campus, as well as access to central systems
 - 1.) In discussions with Netcom to install first university-sanctioned wireless in the Computing Center at Cox Hall

- l. Review budgeting and staffing requirements to substantiate goal oriented spending and hiring
 - 1.) Implementing new allocation model in support of goal-oriented spending and hiring for budget year 2004-05
- m. Other production work of the Academic Technologies Group
 - 1.) Serve as technology engineering consultant to University Administration in support of Inauguration and Commencement Activities and participate in video capture, broadcast, and production of both events.

ADMINISTRATIVE INFORMATION SYSTEMS (Francene Mangham)

1. Complete funded enterprise projects on time and within budget
 - a. Implement Phase 2 implementation of BSR Institutional Advancement System: (Conversion of Biographical data, Gift and Pledge entry; replaces current system)
 - 1.) Phase 2 – Conversion of biographical data, gift and pledge data entry was completed (11/03); this replaced the mainframe legacy Alumni Development System
 - 2.) Completed student and parent data interfaces from PeopleSoft Student to BSR (4/04)
 - 3.) Completed ACE Donor conversion project on time and under budget (8/31/04)
 - a.) Currently in maintenance mode and insuring that the infrastructure is ready to handle the demands of the upcoming comprehensive campaign
 - b. Complete final approved HealthCare consolidation initiative: Emory Children’s Center Physicians to PeopleSoft University Payroll
 - 1.) This initiative was completed 1/04
 - c. Convert DDI Time & Attendance to Kronos Workforce Central
 - 1.) Emory Healthcare (exception: The Emory Clinic) went live on Kronos WFC (8/29/04)
 - 2.) Emory University (exception: Facilities Management) scheduled for implementation (10/24/04)
 - 3.) Facilities Management will go live after the university implementation is completed
 - 4.) OneStaff Nurse Scheduling interface is scheduled for end of 2004
2. Implement and deploy E-Services initiatives
 - a. Implement initial set of PS HRMS e-modules: eBenefits, ePay, eCompensation, eProfile in 3rd – 4th qtr, 2003
 - 1.) Implemented all initial e-modules
 - a.) Implemented e-Benefits module and used successfully for benefits open enrollment during fall 2003
 - b. Implement next set of PS HRMS e-modules: eRecruit, eRecruit Manager, eDevelop in 2nd qtr, 2004
 - 1.) University and Healthcare Human Resources offices changed priorities and postponed implementation of the next set of e-modules in order to complete Pay for Performance and other initiatives
 - 2.) Based on approval by Governance and Ways and Means, software purchase underway for e-Recruit Manager, Resume Handler, and e-Profile Manager with planned implementation (3/05)
 - c. Partner with Student Records Office to Implement grade entry by course instructor directly into PS Student

- 1.) Successful pilot completed (8/04)
- 2.) The Registrar's Office plans to roll out this functionality during the FY05 academic year to additional faculty
- d. **If approved, implement PS Admissions in additional professional schools**
 - 1.) PeopleSoft Admissions implemented in GBS and SPH (9/04)
 - 2.) The Registrar's Office plans to roll out this functionality during the FY05 academic year to additional faculty
- e. **Implement other PS Student web functionality and enhancements**
 - 1.) Implemented functionality to allow students to enter bank account information and debit those accounts online to pay bills
 - 2.) Common Admissions Application for Oxford College, School of Public Health and the Business School went live (9/04)
- f. **Evaluate and assess portal products and implementation methodologies**
 - 1.) Not an approved and active project
- 3. Enhance access to institutional data**
 - a. **Enhance the data warehouse to support next phases of new Advancement system**
 - 1.) The Data team completed migrating Advancement data to the Data Warehouse and converting Business Objects universes by the project implementation date (1/04)
 - 2.) Completed Business Objects universe modifications to add remaining tables where data was not available for Advancement at Phase II go-live (1/04).
 - b. **Add other content tables to data warehouse as requested and approved.**
 - 1.) Met planned targets for the Finance Division Web initiatives
 - 2.) Jobs were completed for loading selected Purchasing system data into the Data Warehouse (1/04)
 - c. **Enhance application for viewing and managing account access**
 - 1.) Rewrite current AINQ application
 - 2.) AINQ Phase I, which replaced the existing functionality of the PowerBuilder application, was rewritten and deployed (8/04)
 - a.) Phase II will include enhancements for sponsored account processing and will be completed by 11/04
 - 3.) Completed My ITD Data Web application, which provides customers with access to the data ITD uses to manage their accounts (5/04).
 - d. **Provide preferred email application pending integration with LDAP⁵**
 - 1.) A new email alias application was developed and deployed to an initial set of users (4/04); deployed to general staff (5/04)
 - 2.) Deployment to students is planned for 10/04
 - e. **Partner with HRMS IS to implement new PS HRMS data mart**
 - 1.) Planning meetings and training sessions were held during the year
 - 2.) Implementation project was delayed in agreement with users due to competing priorities
 - 3.) Software is scheduled to be installed and the project initiated by the end of the calendar year (2004)
- 4. Work with departments in the implementation of new Web applications**
 - a. **Complete new application for managing student post office boxes**
 - 1.) Phase 2 was completed (4/04)
 - b. **Define scope, develop and implement Phase II of Labor Distribution system**
 - 1.) Scope was defined

- 2.) Completed migration from DB2 to Oracle
 - 3.) Other enhancements are planned for next fiscal year
 - c. [Develop new Alumni website to integrate with BSR web community](#)
 - 1.) Completed 2/04
 - d. [Continue to monitor Federal Government research community in anticipation of upcoming ERA requirements and system](#)
 - 1.) Senior analyst attended and participated in research community presentations and seminars at the request of the VP for Research
 - 2.) Regular updates and monitoring are ongoing
 - e. [Develop secured web sites for new President](#)
 - 1.) New Web sites were developed and implemented: President's Vision Statement, University Strategic Plan
 - f. [Other projects as approved and funded](#)
 - 1.) New Web sites were developed and implemented: President's Vision Statement, FMD Campus Plan, College Plan, University Strategic Plan, Woodruff Health Sciences Leadership Council, EVP for Finance & Administration Web site, Honorary Degrees
 - 2.) A new Web application, OnCall, was developed and is in use by the ITD Help Desk and Operations to provide system on-call lists
- 5. Complete migration of legacy systems and databases**
- a. [Complete migration from DB2⁶ and Sybase⁷ to Oracle including PowerBuilder applications](#)
 - 1.) The Data Warehouse and Emory Shared Data (except for the hierarchy data) were migrated to Oracle (8/04)
 - 2.) The final applications and Focus reporting files will be migrated from DB2 to Oracle by 11/04
 - b. [Migrate or discontinue support for remaining legacy applications: Housing, College evaluations, School of Medicine Grants & Space, School of Medicine Residents, Pre-PeopleSoft transcript/certification, Regmast interfaces](#)
 - 1.) Migrated the following applications off the mainframe:
 - a.) Admissions (ADMP)
 - b.) Registrar and Oxford (REGP {Registrar-RegMast} and OXFP)
 - c.) Employee (EMPP), Payroll (PYRP)
 - d.) Labor Distribution (HRSP)
 - e.) BRS Snapshot w/Oracle
 - f.) HR 1042 Creation
 - 2.) Migrated School of Medicine Residents and School of Medicine Grants and Space applications out of CSP to a supportable platform.
 - c. [Migrate or archive pre-PeopleSoft Student databases to Oracle](#)
 - 1.) Converted Admissions and Registrar legacy student databases to Oracle tables; now accessible by the PeopleSoft SA application
- 6. Improve and upgrade enterprise services**
- a. [Define, document, and scope business requirements for a prospective FAS/AP enhancement project; make recommendations on technical environment](#)
 - 1.) A task force has been initiated to begin work on this effort. The scope and deliverables are in the process of being finalized and approved by the project sponsors
 - b. [Assess and implement salary encumbrances as well as other modifications in FAS as requested by senior financial officers](#)

- 1.) Worked with customers to begin the process of defining the business requirements and the scope of the project.
 - c. Continue rollout of Document Management environments to other schools and departments.
 - 1.) A task force was initiated to begin work on this effort
 - 2.) The scope and deliverables are in the process of being finalized and approved by the project sponsors
 - d. Continue rollout of R25 application and customized Web environments to additional Emory schools and departments
 - 1.) Added 329 new R25 web users this year
 - 2.) Created 47 new accounts for R25 schedulers
 - 3.) The following customers implemented the Web request form in R25: Meeting Services, Medical School (Grady Campus), College Office (all space in the College)
 - e. Develop and implement specialized use of R25 for ITD change management
 - 1.) The ITD Change Management system is complete and is use with ITD; this application will continue to evolve as business and audit needs dictate.
 - f. If approved, modernize current document management system to better meet changing imaging requirements
 - 2.) A cross-functional team worked in the evaluation and recommendation of a replacement product
 - 3.) It was determined that this product would need to be included as part of the overall Financial Systems strategy
 - 4.) This decision is included in the new Finance Futures Task Force scope
- 7. Other Production Work of the Administrative Information Systems Group**
- a. Provide maintenance, enhancement, and upgrades of supported systems
 - 1.) Supported and maintained all enterprise administrative systems
 - 2.) Applied upgrades, updates, fixes as well as enhancements, in partnership with the appropriate business units
 - b. Integrate infrastructure improvements to AIS systems, e.g., Citrix
 - 1.) Citrix Data Store was moved from a proprietary file structure to an Oracle database
 - 2.) The two ACE production Citrix servers were load balanced
 - c. Work toward industry professional certifications, e.g., PMP⁸
 - 1.) PMP certification successfully earned for 6 staff: Linda Erhard, Felicia Bianchi, Graydon Kirk, Scott Caillier, John Wilson and Scott Swann
 - d. Provide support for approved cross-functional projects within ITD
 - 1.) AIS staff participated in a number of approved cross-functional projects during the year such as the ITD web site, ITD intranet, web site for Emory College strategic vision, and the EmoryLink project

OPERATIONAL SERVICES (Betty Troup)

1. Improve service efficiency and reduce cost in the Data Center

- a. Work with customers to reduce printing by use of web viewing
 - 1.) Emory Healthcare discontinued printing all FAS reports (June 2004)
 - a.) The university AMO 90/91 was reduced from 15 to 6 boxes of printing monthly
 - 2.) Emory Clinic continues to reduce printing of IDX⁹ reports.
 - a.) The IDX monthly reports printed for the last time in July, a reduction of 7 to 8 boxes of printing monthly
 - 3.) Reduced one person in the print pool on the university side; reassigned another person from Operations to the Storage Management Group
- b. Work with Directors to automate: Daily set up of FAS/AP
 - 1.) Completed (1/04)
- c. Schedule PeopleSoft jobs using Control-M¹⁰
 - 1.) The Data Center met with the PeopleSoft team to discuss using Control M for scheduling jobs
 - a.) A Control-M presentation was set up and attended by the PeopleSoft team
 - b.) The PeopleSoft application team decided not to implement Control-M
 - c.) The PeopleSoft Infrastructure team was very interested in scheduling their task using Control-M
 - d.) Negotiated the contract to allow addition of the PeopleSoft Infrastructure task without increasing the cost of the product
- d. Schedule data warehouse jobs using Control-M
 - 1.) The data warehouse is being revamped and scheduled to be completed by 11/1/04
 - a.) Will determine what needs to be done at that point
- e. Automate CICS¹¹ file openings
 - 1.) Automated CICS file openings (12/03)
- f. Automate startup of VPS¹² printers at IPL or bounce
 - 1.) Automated startup of VPS printers by the university and Emory Healthcare
- g. Review MVS messages to eliminate or respond to automatically and send to a central alert monitor
 - 1.) Reviewed and automated MVS messages (1/04)
- h. Work with HealthcareIS to automate:
- i. Patient account restores
 - 1.) Automated (10/03)
- j. Determine problem with MARS¹³ print and put in solution to resolve problem
 - 1.) Because of the EMER project this has not been a priority
- k. Automate granting access to IDX to outside vendors
 - 1.) Script written to automate vendor access to IDX
- l. Automate processing of UCA¹⁴ claims and Recon¹⁵
 - 1.) Recon processing were moved to the IDX team

2. **Meet service level goals for Emory University and Emory Healthcare**
 - a. **Meet Emory Healthcare Service Level Agreements**
 - 1.) Met service level agreements September through July 2004
 - b. **Provide 99.9 availability for enterprise storage infrastructure**
 - 1.) Met service level agreements September through July 2004
 - 2.) Storage infrastructure uptime = 99.95% (7/31/04)
3. **Work with Facilities Management to improve availability in the North Decatur Building**
 - a. **Work with project team to implement, test and put in production the redundant UPS¹⁶ and generator**
 - 1.) Put redundant UPS and generator into production 1/04
 - b. **Work with Facilities Management to make sure there is a trained backup person to support the North Decatur Building**
 - 1.) Assigned a backup person to the NDB
 - 2.) Training commenced 1/04
 - c. **Work with Facilities Management to do an air flow study in the Data Center**
 - 1.) Air flow study was conducted as a part of the Data Center renovation project and two air units were proposed (1/04)
4. **Support AIS in the goal of reducing legacy applications and system resources**
 - a. **Support AIS in their goals of reducing legacy systems or Web enhancements of legacy systems**
 - b. **Support AIS in eliminating DB2, RMF¹⁷, CSP¹⁸ and Sybase**
 - 1.) A cross-functional team (AIS, OS and TS) was assembled to evaluate the utilization of the mainframe
 - a.) Revised the job schedule for processing so that processing doesn't cross over unnecessarily into the 3rd shift when processing cycles are scarce
 - b.) Moved TSM¹⁹ from MVS to AIX (summer 2004)
 - i. FAS will continue for the next 5 years; moving TSM freed up processing cycles on MVS
5. **Enhance storage infrastructure to support Emory University and Emory Healthcare**
 - a. **Implement new release of control center software including policy based support**
 - 1.) Installed the new release of Control Center²⁰ (2/04)
 - b. **Implement policy base software to support the Healthcare IS infrastructure**
 - 1.) Software was delayed from vendor until 1st quarter 2005
 - c. **Implement Storage Scope²¹**
 - 1.) Installed Storage Scope (2/04)
 - a.) System administrators have to install client on their servers before data can be collected and reports generated
 - d. **Provide storage infrastructure to support PAC's²²**
 - 1.) Designed the storage infrastructure for PACs
 - 2.) Implemented the infrastructure in late 7/04
 - 3.) Started moving Crawford data on 8/5/04
 - 4.) This project was moved from September to July because of capacity issues with the infrastructure

- e. Work with Technical Services to implement policy based processes to monitor, add/delete storage, and archive data
 - 1.) Software was delayed from vendor until 1st quarter 2005
 - f. Look at ways to fund infrastructure refresh without increasing our budget expense more than the project maintenance cost over the next four years
 - 1.) Refreshed the storage infrastructure (1/04)
 - 2.) Financed by projected maintenance dollars
- 6. Work with Emory Healthcare Information Services to implement and support new infrastructure to improve service and lower cost of support**
- a. Implement new policy based processes to monitor, add and delete storage, archive data and place data on different class of storage based on customer requirements
 - 1.) Defined policies on where data will reside on Emory Healthcare's three tiers of storage
 - 2.) Defined standards and approved drive size to be presented to host
 - 3.) Implemented standards during migration to the new storage infrastructure
 - a.) Scheduled for completion end of 3rd quarter 2004
 - b. Train operations to support new hardware and software
 - 1.) Trained Operational Services staff to better support customers
 - 2.) Operators received training on UNIX and the Emory network
 - c. Provide hardware installation, monitoring of systems, scheduling and running jobs
 - 1.) As new systems were turned over, operations provided for the installation of the hardware, monitoring, scheduling, running production, and testing jobs
 - d. Negotiate contracts and purchase new hardware and software to support new infrastructure
 - 1.) Provided support as needed to meet this objective
- 7. Continue Work On The Business Continuance/Disaster Recovery Initiative**
- a. Work with Directors and Healthcare IS to implement measures approved by the ways and means committee
 - 1.) Emory Healthcare phased approach to Business Continuity was presented to hospital administration (11/03)
 - a. Asked to put phase I cost in the capital budget for 2005
 - 2.) A phased approach for Disaster Recovery for the university was presented to Ways and Means
 - 3.) Phase I of this Disaster Recovery plan was approved and the hardware/software was purchased (June 2004)
 - a. The hardware /software was up and tested (8/04)
 - b. Will start moving the tier 1 applications (9/04)

8. Other work of the Operation Services unit

a. Redundant network switches for the Data Center

- 1.) A project team including Netcom, TS and OS surveyed costs of implementing redundant network switches in the Data Center and including gig E for applications that require gig E speed to meet business requirements
- 2.) Provided recommendation to management
- 3.) Project holding for funding

b. Renovation of Data Center

- 1.) Assessed growth needs for floor space, PDU²³ connections and air conditioning for the 3rd floor of the Data Center (1/04)
 - a.) Worked with FM to assess remodeling options to free up space for additional hardware
 - b.) Provided recommendation to management
 - c.) Holding project for funding

c. Server Backup Service

- 1.) Worked with TS to move our enterprise backup service from the mainframe to AIX
 - a.) Completed (8/31/04)
 - b.) This will free up cycles on the mainframe, plus allow faster data backup
 - c.) Reflecting improvements of between 25% up to 20x improvement in backup time

d. *ComputerWorld* award

- 1.) Two staff members of Operational Services played a key role supporting the virtualization project for storage, servers and desktops which led to a *ComputerWorld* Laureate Award

e. Storage Growth

- 1.) Installed 84 terabytes of new storage for Emory Healthcare
- 2.) Have 169.5 terabytes of EMC storage installed to support Emory University and Emory Healthcare

TECHNICAL SERVICES (Olya Jerschowsky/John Ellis)

1. Improve the security of data networks and IT systems across the institution

a. Continue the rollout of the trusted core network, in cooperation with Netcom, and migrate sensitive and critical services to the protected zone

- 1.) PeopleSoft systems were moved into this protected area (completed 10/03)
- 2.) Evening at Emory systems (move completed 3/04)
- 3.) HR systems (move completed 8/04)

b. Implement and maintain a consistent and effective communication plan regarding system, network and physical security

- 1.) Initiated IT Security Awareness communications campaign
 - a.) Published 8-page IT Security Awareness brochure and distributed on campus: computing labs, library, DUC, etc.
 - b.) See ATG 6. b. (1.) and (2.)
 - c.) Presented information on security awareness and end-user responsibility at new employee orientations
 - d.) Organized and hosted a Security Awareness Mini-Conference (4/04)

- i. Approximately 100 participants
 - ii. Invited speakers included security professionals from Georgia Institute of Technology, Georgia State University, Internet Security Systems X-Force, the Emory ITD Security Team and Emory Healthcare and ITD's director of IT Policy and Legal Compliance
 - e.) Organized and hosted a Microsoft Security Training Program (6/04)
 - f.) Published ongoing updates on new variants of viruses and/or exploits on the Security Team's public Web information pages
 - c. **Devise an internal auditing process that will evaluate locally maintained applications for security compliance (for example: Emory card using SSN as a unique identifier)**
 - 1.) Conducted two security audits for entities on campus (one group completed as noted)
 - a.) Evaluated on-line credit card processing system for the Center for Lifelong Learning
 - i. Offered process improvements to increase system security
 - ii. Recommendations were implemented
 - b.) Conducted an internal audit for ITD business practices (in process)
 - d. **Ensure systems and data containing PHI (Patient Health Information) is secured in accordance with HIPAA²⁴ regulations**
 - 1.) Participated in the working groups and coordinating committee of the HIPAA initiative being run by Healthcare Information Systems
 - 2.) Working Group completed HIPAA policies (waiting approval)
 - e. **Implement secure methods for remote access, outside the Emory domain**
 - 1.) Provided a secure method for accessing secured areas (the Trusted Core) of the Emory network through the implementation of Secure Remote²⁵
 - f. **Investigate limited use of IDS (Intrusion Detection) technology to protect gateway and trusted zone firewalls**
 - 1.) Conducted an evaluation of IDS and IPS²⁶ solutions
 - 2.) Implemented IPS solution at gateway firewalls, trusted-zone firewalls and Resnet
 - a.) Purchased 4 additional IPS devices (to be implemented fall 2004)
- 2. Maintain a robust network and IT infrastructure**
 - a. **Identify and quantify an effective disaster recovery solution**
 - 1.) See OS 7a.
 - b. **Optimize the method in which enterprise servers are backed up. Implementation of an enterprise backup solution that will be maintained by Operations and not system's administrators**
 - 1.) See OS 4.b.
 - c. **Explore blade technology to enable virtualization for applications such as web services, database, timeshare and email**
 - a.) Evaluated blade technology for TS infrastructure
 - b.) Visited IBM Executive Briefing Center for detailed blade presentation
 - c.) Talked with HP about differences between IBM/HP blades
 - d.) Presentation will be setup in early July for HP and Egenera
 - e.) Completed cost analysis (ROI) to move from current Sun/Solaris environments for BB6, all web services (Maple & Oak), Streaming, Insight, Wimba, and other Web applications to blades/Linux
 - f.) Learned about VMWare for virtualization

- g.) File Clustering for HA
- h.) Evaluating Oracle RAC (Real Application Cluster) for database HA. Will be implementing Oracle RAC for the BlackBoard 6 application on IBM X series servers running Linux ES3 version in 2004
- i.) IS evaluating at a phased approach: Phase I – BB6 to Blades/Linux; Phase 2 – All Web services to Blades/Linux; Phase 3 – All enterprise Oracle databases in Linux
- d. **Migrate from the old EMC²⁷ Symmetrix to their new DMX technology**
 - 1.) Migrated all services using the Symmetrix environment to the new EMC DMX environment (Completed 1/04)
 - 2.) The new DMX environment improved performance
- e. **Move authentication to a centralized LDAP service, discontinue use of NIS+²⁸**
 - 1.) Decommissioned NIS+ service/environment (8/04)
 - 2.) Central authentication will be provided by means of the LDAP service
- f. **Migrate database services to Oracle 9i**
 - 1.) All databases that could be moved to Oracle 9 were moved (4/04]
 - 2.) There are a few applications that do not support Oracle 9, however these will be upgraded when the applications are upgraded
 - a.) Databases in Oracle 8:
 - i. Magic (the vendor does not certify Oracle 9)
 - ii. Purchasing (the vendor does not certify Oracle 9 for the current version)
 - iii. ACE deleted; upgraded to Oracle 9
- g. Scheduled a new LDAP environment to be built over the summer 2004
 - a.) Load balancers and redundant LDAP proxy servers will make up this new environment
 - b.) The new environment will increase response time and availability

3. Support the academic mission of the university

- a. **Upgrade Blackboard to release 6.4 (of the latest suggested release)**
 - 1.) See ATG 1. a.
 - 2.) The Blackboard architecture now includes load-balanced application servers to increase availability
 - 3.) A development and test environment was added to the architecture
 - 4.) The Oracle database is scheduled to be using RAC (Real Application Servers) to load balance the database and increase full system availability
- b. **Migrate courses maintained on LearnLink to Blackboard; centralize on one course management system**
 - 1.) See ATB 3. b.
 - 2.) Provided back-end support to make this migration easier for the end-user
- c. **Support the streaming infrastructure and provide the most current streaming technologies**
 - 1.) Emory streaming services grew significantly
 - 2.) Worked to define a service offering for streaming and videoconferencing services: Evaluated and proposed a streaming infrastructure to include platform, software and storage
 - 3.) Discussed the need to provide a consistent service for academic and administrative units, to have a central location for streaming services, and to provide a defined service offering and request form on the IT Web site

- d. Work with ATG to identify community requirements for a Timeshare/Shared Enterprise File Service
 - 1.) ATG and TS worked to identify what services should be provided in a timeshared environment
 - a.) TS rebuilt the old timeshare environment to upgrade the hardware and the software (1/04)
- 4. Continue to align the IT planning process with institutional strategic direction
 - a. Internationalization. Provide multi-language support on Emory Web servers
 - 1.) Completed the migration to the Apache Web server, which has native support for international languages in the software
 - 2.) Configured and implemented functionality so that Emory's Web servers provide multi-language content on the Web
- 5. Move toward an institutional approach regarding web-based services.
 - a. Centralize credit card processing via the Web. Provide a secure and controlled means in which to collect, process and reconcile credit card transactions via a web interface
 - 1.) Delivered a presentation of a centralized credit card processing solution to ITD directors and Finance Division representatives
 - a.) Provided cost information regarding the per cost transaction and how to best recuperate the expense for the service will be provided to the Finance Division (5/04)
 - b.) While this project holds for funding, the Security Team conducted security audits, with the intent of assisting business units on campus with properly securing their credit card processing environments
 - b. Implement a Tier 0 self help module for the user community, to augment Client Services
 - 1.) Purchased a software package, Knowledge Base, to augment the existing "Help Desk" website
 - 2.) Knowledge Base will provide basic help information for end-users, allowing them an opportunity for self-service resolution of problems before requesting support from the Help Desk

Endnotes

- ¹ iROS (Intelligent Robots and Systems). iROS is a meta-operating system for technology-rich "interactive rooms". The core components provide communication, collaboration and interaction for wireless classroom users.
- ² SMART systems. SMART Technologies are interactive, rear-projection whiteboards, software, whiteboard cameras, and multimedia modules, either built-in or free standing, that enhance classroom teaching and learning
- ³ R25. Software application is used to schedule events and manage space resources and facilities based on multiple requirements such as calendar day, number of people, AV equipment, security level, furniture, layout, accessibility, and program hours. R25 also includes an integrated WebViewer for internet access to the application.
- ⁴ Sirsi. A vendor that provides the system for cataloging and managing Emory's library holdings.
- ⁵ LDAP. Lightweight Directory Access Protocol. A protocol (rule determining the format and transmission of data) for accessing online directory services.
- ⁶ DB2. A proprietary cross-relational database from IBM.
- ⁷ Sybase is the vendor of a database originally used to implement Emory's Data Warehouse.
- ⁸ PMP. Portable media players
- ⁹ IDX. IDX Systems Corporation is provider of software, services and technologies for healthcare provider organizations.
- ¹⁰ Control-M. A software product used for production scheduling that integrates dissimilar software applications across the enterprise from a single point of control.
- ¹¹ CICS. Customer Information Control System provides one way to run interactive applications on the IBM mainframe under MVS.
- ¹² VPS. Virtual Private Servers. Virtual Printing Services. Implements mainframe printing on local printers.
- ¹³ MARS. medical billing management system from Mars Medical Systems or Medication Administration Records
- ¹⁴ UCA. United Creditor Alliance
- ¹⁵ Recon. Credit agency "recon" – reconciliation function of accounts defined in the process.
- ¹⁶ UPS. Uninterruptible power supply systems for continuous data network services.
- ¹⁷ RMF. Resource Management Facility. It is used for managing mainframe resources.
- ¹⁸ CSP. Cross System Product provides a software environment that can be used to produce interactive applications that can run under various IBM mainframe environments.
- ¹⁹ TSM. Tivoli Storage Manager.
- ²⁰ Control Center. Name of EMC software product to automate and simplify the networked storage environment.
- ²¹ Storage Scope™ (ECC StorageScope) software is a new addition to the EMC ControlCenter/Open Edition family of integrated software applications. StorageScope provides customers with powerful software to reduce costs associated with the deployment, monitoring and management of heterogeneous information storage resources. Storage Scope is an open application that automates the collection, analysis and reporting of data from all storage elements in an enterprise. ECC StorageScope delivers real-time and historical reports of storage allocation, usage and configuration details.
- ²² PACs. Technology system used to digitize x-rays.
- ²³ PDU. Power Distribution Unit.
- ²⁴ HIPAA. The Health Insurance Portability and Accountability Act (1996) includes requirements for the protection of patient information.
- ²⁵ Secure Remote. Allows for accessing a system that is protected by a firewall by login authentication to the firewall.
- ²⁶ IPS. Intrusion Prevention System. Looks for and optionally blocks malicious network traffic such as attacks generated by viruses and worms. Would protect the border firewalls from overloading caused by distributed denial of service attacks, and protect trusted core access that uses VPN from attacks by home computers.
- ²⁷ EMC. Supplier of intelligent enterprise storage used by the ITD Data Center. Their products allow consolidation of disk storage of multiple enterprise systems into one system for efficiency of storage management (backups, adding disk space), increased performance (caching and switching), and higher availability and reliability (RAID, mirroring, and hot swap).
- ²⁸ NIS+. Network Information System software. NIS is a network naming and administration system for smaller networks that was developed by Sun Microsystems. NIS+ is a later version that provides additional security and other functions. Using NIS, each host client or server computer in the system has knowledge about the entire system. A user at any host can access files or applications on any host in the network with a single user identification and password. NIS is similar to the Internet's domain name system (DNS) but somewhat simpler and designed for a smaller network. It's intended for use on local area networks.