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EMORY UNIVERSITY  
Information Technology Division (ITD)  
**Annual Report**  
**FY 2002-03**

## **Executive Summary**

### **Reflection**

Annual reports are a time to document what has been accomplished in the prior year, as well as reflect on progress toward strategic goals over several years. For the IT Division this reflection has yielded a contrast between our not too distant past and our present reality. We have come a long way from the fall semester of 1999 when email outages were common, budgets were out of control, and there was no IT strategic direction defined for the division or the university. In these past few years substantial progress has been made in stabilizing IT Division infrastructure and services, bringing budgets into balance, and starting a planning process.

But past these basic steps toward stabilization, substantial progress has also been made in implementing and upgrading administrative systems, integrating information technology into the academic experience, and improving communication between the IT Division and the campus. During this time not only have services been more stable, but they have been so during a time of exponential growth. As IT has become more integrated into the life of the university the need to have systems that are not just stable, but also robust, becomes a requirement. The IT Division has risen to this challenge.

### **The Past Year**

A quick review of the accomplishments of the IT Division identified in this report is a bit overwhelming. There is little question that many projects and new initiatives brought needed services to the campus. In the academic area the opening of the Computer Center at Cox Hall provided a facility that encourages group work using the power of brand new collaboration technologies. Increased use of the Blackboard course management software and introduction of new services like Webdrive and image database software supported both teaching and research efforts. In the administrative area major upgrades to PeopleSoft Human Resources and Student systems were done on time and within budget. And new e-modules that were part of these upgrades will position us to make better use of the Internet in serving the needs of both students and staff. A long list of technical service and infrastructure improvements has made systems more robust and reliable. And finally, a data center that has met goals of uptime well over 99% has provided reliable service for both University and HealthCare systems and their applications.

One way to characterize the work of the past year is that it was a continuation of a chapter of improving division services that began in early 2001. Another perspective might be that it was the closing pages of that chapter, and the positioning of the division for a new chapter where the work of the past provides a platform on which to build the future. It is indeed fortunate that we have come to this place just as we begin a new era of senior leadership at the University.

### **The Days to Come**

The working draft of the Emory Vision Statement states: "Emory University: An academic destination and a resource for changing the world, whose unique blend of intellectual quest and ethical discourse makes it a leading community for teaching, scholarship, and service." Supporting documentation for this statement further defines what is needed to achieve this vision: a commitment to excellence, internationalization, focus on research and teaching, interdisciplinary programs, diversity, and a sense of community. The document makes it clear that hiring and retaining the best scholars/teachers and staff

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is critical toward achieving this vision. Yet many would argue that a solid IT infrastructure and services to support these professionals are also of vital importance.

To become the institution identified in the vision statement above, Emory must move beyond having nice facilities and a solid offering of core IT services. It must become a leader on the national stage. For example, faculty and students must have physical as well as virtual meeting places that easily facilitate access to information, communication, and group learning. Classrooms must not only be equipped with IT and multimedia resources, but also offer where appropriate, new functionality that allows for 3D imaging and video conferencing. Our teaching and research spaces must become windows to the world where individuals or groups from remote locations can be brought in to join class discussion. And IT enabled simulations in labs or other spaces must engage the student with course material in new and exciting ways. As many have discovered in recent years, the effective use of technology can greatly enhance the teaching/learning experience for both faculty and students. And in our case this is very much needed if we are to achieve our institutional vision.

With regard to research, the need for a strong IT infrastructure is vital. Granting agencies now look for joint projects between Universities as opposed to proposals that focus on just one institution. Such collaborative efforts require dependable IT infrastructure at each institution and bandwidth capabilities to routinely transmit large data and image files, as well as conduct live demonstrations and meetings. To support research IT personnel must become active in regional and national initiatives such as Internet 2, middleware projects, EDUCAUSE policy forums, and many other activities. The requirements of partnership and collaborative arrangements are even stronger when there are joint academic programs such as exist between Emory and Georgia Tech. Here staff must exchange information on software applications, technical infrastructure, security services, and network design to assure a seamless IT foundation from which to conduct teaching and research efforts.

There is no question that the key to achieving a vision for Emory is dependent on excellent faculty, administration, staff and students. Yet information technology resources, and the people who provide them, also play a vital role in bringing Emory to a point of excellence. The Information Technology Division is well positioned to bring much needed talent and resources toward helping the University achieve its goal of becoming a preeminent research university in the coming years.

Donald E. Harris, Ph.D.  
Vice Provost for Information Technology and CIO, Emory University

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The goals and major objectives (blue text) map back to the "2003 IT Strategic Plan," which can be viewed online at: <http://cio.emory.edu/2003.Strategic.Plan/ITSP2003.html>. The Information Technology Division's progress toward addressing these goals and objectives is presented in black text. Ongoing work to support existing systems and infrastructure is outlined under "Other" at the end of each ITD group's section.

## **Academic Technology Group (ATG)**

### **1. Utilize IT resources in support of the teaching mission of the institution**

- a. Upgrade to Blackboard Version 6 with learning communities and portal
  - 1.) Set up a Blackboard Version 6 test environment.
  - 2.) Testing by ITD and school IT specialists scheduled through Fall 2003.
- b. Complete the image database project for Art History using Gallery software
  - 1.) Implemented the database and slide template.
  - 2.) Fixed known errors.
- c. Implement a way for faculty to access and share data in the image database
  - 1.) Selected Insight as the product for faculty and students to use to access the image database.
  - 2.) Project funded and implementation began.
  - 3.) Began testing with Art History Slide Library.
- d. Work with the Carlos Museum in exploring an image database initiative
  - 1.) Tested and approved Citrix environment for Museum System client.
  - 2.) Worked on development of a project plan for Carlos deployment.
  - 3.) Carlos ready to proceed with Museum System with support provided by the Provost.
- e. Work with the Schools of Medicine, Nursing and Theology in supporting the use of IT resources in the academic program
  - 1.) Supported Medical School faculty on Blackboard in Emory's Center for Interactive Teaching (ECIT).
  - 2.) Coordinated EduCATE Conference.
  - 3.) Completed Candler Online (Summer 2003).
- f. Continue to provide training programs within ECIT for all faculty
  - 1.) Completed "Lunch and Learn Series."
  - 2.) Planned training for 2003-04.
  - 3.) Supported classes in ECIT and the distance learning spaces: Emory College Online (Summer 2003) and (1e) above.

### **2. Enhance facilities and the web in support of the academic mission of the institution**

- a. Open the redesigned Computing Center at Cox Hall
  - 1.) Opened the Computing Center (November 1, 2002).
  - 2.) Twelve courses (Spring Semester) and 3 courses/workshops (Summer 2003) were conducted in the classrooms.
- b. Participate in national forums on academic lab design
  - 1.) Presented at EDUCAUSE Southeast, Infocomm and the Southern Association of Colleges and Schools (SAC).
- c. Upgrade labs for graduate students, social sciences and the music department
  - 1.) Upgraded the Music Lab computer infrastructure
  - 2.) Upgraded the Social Sciences Lab.
  - 3.) Equipped graduate labs in Tarbutton, Callaway, and Clairmont campus with new hardware.
- d. Work with the library in upgrading technology in Information Commons
  - 1.) Installed new PCs and iMacs in the Information Commons.

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- 2.) Expanded InfoCommons image to include SPSS<sup>1</sup> and library image to support WebDAV and Active Directory.
  - 3.) Participated in Library Space Council, recommending strategies for stacks, Level 1, and Information Commons renovations.
  - e. **Introduce a new IT website providing "one-stop shopping" for IT services**
    - 1.) Completed IT website design and populated content (activated August 2003).
    - 2.) Archived previous ITD site.
  - f. **Continue to design new processes to maintain the Emory College website**
    - 1.) Introduced new calendaring modules using a content management system (CMS) for the Performing Arts Center.
    - 2.) The CMS is being evaluated by Emory College for their central college site.
  - g. **Implement a graduate student support website**
    - 1.) Reviewed and reported on peer institutions' graduate computing web resources.
    - 2.) Provided graduate student section in the IT website, which will be shown to new graduate students at orientation.
  - h. **Integrate the multimedia support infrastructure that is shared between ECIT, the Language Center, and Cox Hall facilities to seek efficiencies**
    - 1.) Met bimonthly with directors of centers to coordinate programming and services.
    - 2.) Standardized documentation and programs between facilities.
    - 3.) Transitioned operating systems to standardized XP and OSX.
    - 4.) Reviewed upgrading network to join centers.
    - 5.) Installed storage for moving projects within facilities and for backing up large digital projects.
    - 6.) Began development of new website for Emory Centers for Interactive Teaching.
  - i. **Review Emory cable television programming and its role in the support of the academic mission of the university**
    - 1.) Added Arabic, Portuguese, and Chinese Programming to the Emory Cable system.
    - 2.) Planned for addition of Hebrew and Japanese programming and Russian cable television programming [due for implementation in FY 2003-04].
    - 3.) Deployed replay units in the Language Lab and Classrooms to allow for reviewing language content.
    - 4.) Explored connections to Clairmont Campus that support international programming.
  - j. **Expand the use of videoconferencing to classrooms and the opportunity for "visiting scholars" to be integrated into traditional classes**
    - 1.) Completed videoconferencing upgrade for Emory and Oxford.
    - 2.) Completing faculty requests for videoconferencing on as-requested basis.
    - 3.) Presented a review of videoconferencing facilities to the IT community at the monthly IT Briefing.
    - 4.) Included section for videoconferencing in new IT website that includes online videoconferencing request forms.
  - k. **Implement the web directories project and seek ways to integrate this with Blackboard in support of the academic program**
    - 1.) Examined integration strategies between Emory Webdrive and Blackboard.
- 3. Redefine the role that the central IT division will play in local support services**
- a. **Work with Client Services, schools and administrative units to implement a website for local support personnel. Such a site would include a knowledge database, trouble reporting and tracking, links to 2<sup>nd</sup> tier support personnel, etc.**
    - 1.) Reviewed local support directory.
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- b. **Begin the process of moving local support personnel out of central IT units to their respective schools and administrative units. Provide resources via website listed above as well as 2<sup>nd</sup> tier support personnel in Client Services**
    - 1.) Passed operational control of local support to Emory College on June 1, 2003.
    - 2.) Coordinated with the College on transition and completion of reviews for Local Support staff.
  - c. **Work with Client Services to support the new release Support Magic**
    - 1.) Trained Local Support on new release of Support Magic (January 2003).
    - 2.) Participated in the dialogue between Emory College and ITD Client Services on development of appropriate handoff protocols for the transition.
  - d. **Provide training for Local Support personnel on classroom technology**
    - 1.) Completed Local Support crosstraining on basic classroom issues (Fall 2002).
- 4. Continue the development of virtual communities to support academic work**
- a. **Reevaluate the role of the First Class product to provide the back end for the LearnLink service in light of Open Text's acquisition of Centricity**
    - 1.) Evaluated Fusetalk as a threaded message board to supplement Emory's online environment.
    - 2.) Initiated LearnLink quotas for faculty and re-implemented for students following successful summer 2002 upgrade.
    - 3.) Evaluated instant messaging products with ITD Technical Services.
  - b. **Implement the Connect 2007 program for incoming undergraduates**
    - 1.) Completed active implementation of all admitted and attending candidates for Emory College and Oxford on LearnLink.
    - 2.) Removed all non-attending candidates from the system.
  - c. **Work with the Association of Emory Alumni to identify funding and infrastructure to support an online initiative for alumni**
    - 1.) Met with the Association of Emory Alumni (AEA) to evaluate their financial ability to support community outreach.
  - d. **Strategize and design appropriate community spaces in the residential labs**
    - 1.) Installed prototype design in Building H on Clairmont Campus.
    - 2.) Worked on designing facilities for the Student Activity and Academic Center (SAAC) and Woodruff Lab; included student input/participation in planning.
  - e. **Work with Tech Services in educating the faculty and students about the use of peer-to-peer software, virus protection, and energy-saving configurations**
    - 1.) Trained Residential Computing Coordinators (RCCs), planned posters, advertising, and cable programming on security and file sharing to be delivered to students in academic year 2003-04.
- 5. Enhance the use of IT resources in classrooms**
- a. **Implement eControl Technologies to remotely administer classroom installations**
    - 1.) eControl Technologies active and functioning in Mathematics and Science and Performing Arts Centers.
    - 2.) Looked at College-wide management strategies for 2003-04.
  - b. **Replace classroom technology according to the defined cycle**
    - 1.) Emory College funded replacement cycle for classroom equipment for the first time.
    - 2.) Implemented support contract for Emory College classrooms with offsite vendor.
  - c. **Work with NetCom in defining requirements to support media technology**
    - 1.) Defined plan with Technical Services to escalate calls on classroom outages.
    - 2.) Worked with NetCom to educate on eControl infrastructure requirements and new network addressable and mountable projects that may be introduced in 2003-04.
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- d. **Further define and implement a local support model for classroom technology**
    - 1.) Trained Local Support on classroom technologies.
    - 2.) Consulted and oriented Local Support on classroom image for faculty.
    - 3.) Provided line testers for Academic Technologies to assess outages.
  - e. **Collaborate with Facilities Management and schools on building and renovation projects, including AV budget and planning for ongoing classroom support**
    - 1.) Planned Building H Lab, SAAC Lab, Woodruff dorm renovation with residential lab mockup.
  - f. **Redesign and refresh technology in the Woodruff Distance Learning Room**
    - 1.) Completed renovation (January 2003) with new design and hardware.
  - g. **Assist Oxford College in changes to technology in their distance learning room**
    - 1.) Completed renovation (January 2003) with new design and hardware.
  - h. **Assist Residential Life in designing and implementing classroom technologies in the Student Academic and Athletic Center if funding is provided**
    - 1.) Residential Life agreed to pay EmoryCard, network, and furniture expenses.
    - 2.) ICDF<sup>2</sup> surplus from current project cost containment funded the technology.
  - i. **Assist the College in designing and implementing classroom technologies in Candler Library and the new Performing Arts Center**
    - 1.) Completed Performing Arts classrooms on time for Spring 2003 classes.
    - 2.) Completed Candler classrooms (August 31, 2003).

## **6. Further enhance infrastructure for library and other systems**

- a. **Prepare a report for the Vice Provost and Chief Information Officer (CIO), IT and the Vice Provost for General Libraries on SIRSI's release plans for AIX<sup>3</sup> with implications for Emory**
  - 1.) Worked on revising the report.
- b. **Implement a new test environment for the library system**
  - 1.) Activated the test environment (September 2002).
- c. **Continue to study computer security concerns for students and faculty**
  - 1.) See Item 4e above.
- d. **Seek ways to utilize high-speed networking applications**
  - 1.) Implemented IP conferencing at Emory Cable Television Head End, the "remote" point for distribution for the Emory Cable Television system (September 2002).
  - 2.) Implemented IP conferencing<sup>4</sup> at Woodruff Library 217 (January 2003).
  - 3.) Implemented IP conferencing at Hoke O'Kelley 217 (January 2003).
- e. **Seek innovative ways to utilize IT resources in the language center**
  - 1.) Implemented Replay TV solution for Chinese and Arabic language instruction.
  - 2.) Evaluated language applications.
  - 3.) Implemented Arabic Online initiative for Title VI grant.
  - 4.) Migrated Language Lab to Active Directory and OSX.

## **7. Other work of the Academic Technologies Group**

- a. **Prepare technical plans for the Graduate School and College moving into Candler**
  - 1.) Consolidated server infrastructure and support program for Emory College and the Graduate School for opening of renovated Candler Library.
- b. **Implement a strategy with Client Services to address computer security issues for students and for faculty**
  - 1.) See Item 4e above.
- c. **Work with Technical Services and Network Communications (NetCom) to evaluate the L-Bone and, if feasible, implement a node at Emory**
  - 1.) Began inventory of Emory College research initiatives for collaboration requirements for partners
  - 2.) Cross-inventoried available L-Bone sites.

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- d. Support web programming and design needs of funded grants and projects that may include Delmas, Holocaust Denial on Trial, NEH grants, Ramses II website
    - 1.) Continued development of text databases for National Endowment for the Humanities (NEH) project and Delmas Grant.
    - 2.) Completed Ramses and Delmas websites.
    - 3.) HDOT was not funded by an outside foundation.
  - e. Continue to maintain the production services of the unit
    - 1.) Provided local and classroom support for faculty.
    - 2.) Provided training for faculty.
    - 3.) Provided escalated support for residential graduate students.
    - 4.) Provided ongoing Euclid and Web Cat functionality.
    - 5.) Implemented Connect 2007 website.
    - 6.) Activated CancerQuest website, which was awarded the Editor's Choice award by OncoLink, an online publication of the Abramson Cancer Center of the University of Pennsylvania, and the Sci/Tech Web Award by Scientific American (May 2002).
    - 7.) Replaced and added new kiosks. Updated kiosks to OSX.
    - 8.) Migrated National Institute of Health (NIH) Grant to NBB.
    - 9.) Planned Back-to-School.
    - 10.) Offered student voting, with ITD Technical Services (Fall and Spring).
    - 11.) Conducted tours of Information Commons, ECIT and the Computing Center at Cox Hall.
    - 12.) Supported iMovie at Emory and at St. Andrews. Partnered with Georgia Institute of Technology on iMovie initiative.
    - 13.) Built relationship with Apple.
    - 14.) Coordinated bulk academic purchases for Apple and Dell.
    - 15.) Consulted with Georgia Institute of Technology on library renovations.
    - 16.) Worked with Polyvision on classroom equipment design for Emory.
    - 17.) Upgraded ICDF Anthropology Lab.
    - 18.) Upgraded ICDF Studio Arts Film Lab.
    - 19.) Presented on the topic of "Academic Community and Learnlink" at the LiveLinkUp 2003 conference, sponsored by Opentext (owners of First Class).
    - 20.) Installed Sigma Stat in the Computing Center at Cox Hall.

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## Administrative Information Systems (AIS)

### 1. Complete funded enterprise projects on time and within budget

- a. Complete HealthCare Benefits Restructuring Project
  - 1.) Completed Phases 1, 2, and 3 on January 8, 2003:
    - a.) Created separate benefits pools and processes for Emory Healthcare.
    - b.) Created consolidated payroll processing for Emory Healthcare.
    - c.) Implemented PeopleSoft (PS) Human Resources Management System (HRMS) and DDI Time & Attendance for Wesley Woods and Emory Childrens' Center staff.
- b. Implement Institutional Advancement System - Phases 1 and 2 to be completed by Dec 2003; entire project completed within 2004.
  - 1.) Completed Phase I: Prospect tracking live as scheduled on January 31, 2003.
  - 2.) Phase II, Advanced Biographical and Gift information, is scheduled for 4<sup>th</sup> quarter 2003.
- c. Upgrade to PeopleSoft HRMS 8.3
  - 1.) Completed Phase I: Upgraded core to PS 8.3 (June 2003) on time and within budget.
  - 2.) Phase II: ePay, eComp, eProfile and eBenefits under way with completion scheduled for October, 2003.
- d. Upgrade to PeopleSoft Student 8.0
  - 1.) Upgraded to PS 8.0 completed on time (June 2003) and within budget.

\*For "c" and "d" above:

- 1.) Upgrade projects began in July 2002 and were completed in June 2003.
- 2.) New releases are nearly 100% web-enabled.
- 3.) Eliminated some Emory customizations and maximized use of delivered PeopleSoft functionality.
- 4.) New releases will provide enhanced functionality for users as well as streamlining processes and further reducing batch and paper processes.
- 5.) Foundation place to implement self-service modules for campus.
- 6.) New infrastructure is more robust and includes more redundancy and security.

### 2. Continue to replace or migrate legacy systems

- a. Complete initial phase to replace mainframe labor distribution system
  - 1.) Completed Phase I of the web Labor Distribution System designed to replace mainframe labor distribution system.
  - 2.) Phase I enables keying of Retroactive Salary Transfers by the Office of Grants & Contracts.
  - 3.) Phase I went live in May 2003 for the Office of Grants and Contracts.
- b. Study the feasibility of moving FAS/AP to UNIX with web front ends
  - 1.) Completed assessment to outline alternatives for financial systems.
- c. Partner with departments to replace SOM Grants & Space/Medical Residents, College evaluations, and Housing application
  - 1.) Progress made on Housing, College Evaluations, and School of Medicine (SOM) Medical Residents.
- d. Eliminate legacy student master file, Regmast
  - 1.) Regmast no longer used in Emory Shared Data (January 2003).
- e. Reduce use of legacy infrastructure databases - DB2<sup>5</sup> and Sybase
  - 1.) Recreated DB2 Emory Shared Data (ESD) tables in Oracle.
  - 2.) Began moving programs from mainframe COBOL<sup>6</sup> to UNIX MicroFocus COBOL.
  - 3.) Finished project assessment to completely eliminate use of DB2 in ESD and the Data Warehouse and all of Sybase (August 2003).
  - 4.) Extended maintenance for Sybase through February 2004.



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### **3. Improve and enhance access to institutional data**

- a. Enhance access to information (e.g., demographic data) to authorized persons
  - 1.) Designed and implemented an Event Bus.
  - 2.) Provided daily ESD changes to the Technical Services account management application, which can be made available to other authorized systems and users.
- b. Provide web application to view and change authorized demographic data
  - 1.) Designed and developed the OnePlace application. This application is in use by the HelpDesk, NetCom and other authorized users.
- c. Populate the data warehouse to support new Advancement system, Finance Division web initiatives, and Human Resources reporting
  - 1.) Completed Phase I of the Advancement subject area.
  - 2.) Completed Phase I of the Finance Division subject area.
  - 3.) Purchased the PeopleSoft HRMS Data Mart to augment the Data Warehouse.
  - 4.) Created New Business Objects universes to support FAS Administration and to provide approved individuals more global access to earning data.
- d. Enhance standard and ad hoc reporting via the web
  - 1.) Added NetCom monthly service invoices to WebReport Viewer (WRV).
  - 2.) All account administrators now have these invoices available via WRV.
  - 3.) Added a fast print button to the WRV report window to allow customers to quickly print a physical copy of their FAS and NetCom reports.

### **4. Implement rollouts and upgrades to systems**

- a. Provide technical support to complete Purchasing System upgrade
  - 1.) Upgraded the Online Requisition system (July 2003).
- b. Upgrade document management system, Optix, per vendor release
  - 1.) Phase I testing completed. Rolled out imaging applications to Office of the Executive Vice President for Health Affairs and the Office of the Controller.
- c. Upgrade Resource25 (R25) per vendor release
  - 1.) Completed major upgrade from Version 2.2 to Version 3.1.
  - 2.) Completed full upgrade to Version 3.2 (August 2003).

### **5. Work with divisions and departments in the implementation of new applications**

- a. Implement PeopleSoft Admissions in Nursing School
  - 1.) Implemented PS Admissions in Nursing School (August 2003).
- b. Initiate project to implement PeopleSoft Admissions in Law School
  - 1.) The Law School purchased another system through Law Services, a national law school application service.
- c. Implement website for Emory Trustees
  - 1.) Initial phase completed and operational by Trustees.
  - 2.) Phase II (RSVP forms) begun and will be folded in among other web project priorities.
- d. Support the International Scholars department with the SEVIS<sup>7</sup> implementation
  - 1.) Completed the Interface to SEVIS.
  - 2.) International Scholars Department is currently using new system, I1440, successfully.
- e. Other projects as approved and funded
  - 1.) Completed Phase I of the Post Office Box Management System, which assigns PO boxes to new incoming students (August 2003).
  - 2.) Rolled out R25 and R25 Web Viewer for online scheduling access to new areas.
    - a.) R25 rolled out to the Department of Medicine Grady Campus, the Winship Cancer Center, the Student Activity, and Academic Center.
    - b.) All areas are scheduling in R25 and have a web presence displaying their schedules online to their customers.

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## **6. Evaluate and implement E-Services initiatives**

- a. Implement initial PeopleSoft e-modules: e-payroll, e-benefits, e-profile
  - 1.) PeopleSoft modules ePay, eComp, eProfile in production (August, 2003)
  - 2.) eBenefits under way with completion scheduled for October 2003.
- b. Partner with cross-functional groups to evaluate and plan a web portal for Emory
  - 1.) Began research and investigation of possible approaches and technologies.
- c. Partner with cross-functional groups to evaluate and plan e-commerce initiatives
  - 1.) Worked with Technical Services to provide analysis for the initial phase of Credit Card infrastructure.

## **7. Other work of the Administrative Information Systems Group**

- a. Continue to maintain production services of the unit
  - 1.) Completed the movement of the Sybase Data Warehouse to new Unix servers.
  - 2.) Worked with Technical Services to load a new directory-only LDAP<sup>®</sup> instance, which is completely refreshed every night.
  - 3.) Created a new Oracle feed from Emory Shared Data for the Magic Application.
  - 4.) Completed Emory Shared Data and Data Warehouse modifications required for the PS 8 upgrades.
  - 5.) Worked on project within FAS to migrate to State Street for endowments.
  - 6.) Other system enhancements and modifications completed at request of customers.
  - 7.) Continued to monitor Electronic Research Administration activities at the national level per the direction of the VP of Research.

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## Technical Services (TS)

### 1. Re-architect service offerings to optimize performance, security, cost and delivery

- a. Re-architect Timeshare and eliminate use of NIS+<sup>9</sup>
  - 1.) Upgraded the hardware and operating system.
  - 2.) Began moving authentication from NIS+ to LDAP.
- b. Rearchitect the account management process, automate and move to real time
  - 1.) Wrote code to automate the account management process.
  - 2.) Introduced MetaDirectory, a packaged solution, and used the developed code as an interface between the applications and the MetaDirectory.
- c. Move from Netscape to Apache for web server engine
  - 1.) Implemented an Apache server for development and production.
  - 2.) Plan by the end of the calendar year (2003), to have all web services converted to Apache.
- d. Redefine the Software Distribution business model
  - 1.) Implemented a web form to accept software requests.

### 2. Centralize service offerings for optimization of resources and standardization

- a. Centralize and standardize authentication (LDAP)
  - 1.) Added the ability to proxy disparate LDAP services as a unified service to the LDAP environment.
- b. Evaluate an enterprise backup solution
  - 1.) Evaluated and made the decision to purchase and implement IBM's Tivoli Storage Manager (TSM) on the mainframe to optimize existing resources.
  - 2.) All enterprise services will be backed up using the TSM environment.
- c. Centralize database services, provide a self-serve database solution
  - 1.) Made a centralized Oracle self-service database server available for web developers on campus.
  - 2.) The service provides developers with an environment for web development and provides access to backend database utilities.
- d. Consolidate web storage (Webdrive/LearnLink)
  - 1.) Brought Webdrive, an Internet file-sharing service available to the campus community, into full production.
  - 2.) Moved web pages from Timeshare and LearnLink to Webdrive.
  - 3.) All personal web pages are now being served by Webdrive.
- e. Centralize credit card processing providing enterprise wide cost savings
  - 1.) Completed a functional design, which was accepted by the internal ITD project team and the Finance and Controller's office.
  - 2.) Began Phase II, which is to determine the cost and required resources.
- f. Secure website availability for secure transactions
  - 1.) Established an environment that allows web developers to develop secured applications.
- g. Create a jumpstart depot for enterprise servers
  - 1.) Developed and implemented a jumpstart install for the web servers.

### 3. Empower the user community

- a. Implement a self-managed filter for email to control spam and unwanted email
  - 1.) Evaluated a centralized SPAM filtering service and recommended purchase of Trends SPS (SPAM product).
  - 2.) Received the hardware and software.
  - 3.) The SPAM filtering service should be generally available by mid-November 2003.

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- b. **Create a Tier 0, self-help knowledge base for user community**
    - 1.) Established "Frequently Asked Questions (FAQ)" and self-help pages for the new IT website.
    - 2.) Evaluated packages to augment the website that provide a more complete knowledge base for end-users.

#### **4. Introduction of new services and/or upgraded services**

- a. **Complete the implementation of the upgraded Support Magic software**
  - 1.) Rolled out Magic TSD for the university (January 15, 2003).
- b. **Complete the implementation of the upgraded anti-virus software**
  - 1.) Successful cutover of all campus email servers to the anti-virus scanning service.
  - 2.) All inbound email traffic from the Internet is now being scanned by the anti-virus scanners
  - 3.) Email that is detected to have a virus is either cleaned prior to delivery or quarantined and a notification is sent to the recipient that the message was infected.
  - 4.) Began migrating the email servers to scan outbound email as well.
- c. **Complete the implementation of the infrastructure for the PeopleSoft upgrade**
  - 1.) Implemented the new PS 8 infrastructure.
  - 2.) Powered off the old hardware (July 2003).
- d. **Provide a Citrix Cluster, enterprise service**
  - 1.) Put the Citrix environment in place.
  - 2.) Successfully implemented Donor and began working with the R25 and Math/CS on bringing up their applications.
- e. **Evaluate various groupware packages for possible use by the unit**
  - 1.) A charter statement is being prepared for a project called EmoryLink, which is targeted at evaluating a centralized email, calendaring, conferencing, messaging and file-sharing solution for the university.
- f. **Enable streaming technology and identify targeted areas to support. Create a plan to deal with increased storage use and network requirements for this service**
  - 1.) Began creating a service offering definition for streaming services.

#### **5. Maintain working partnerships with schools and administrative units**

- a. **Partner with NetCom to address infrastructure improvements**
  - 1.) Made improvements to the escalation process with NetCom. Met monthly to facilitate communication between TS and NetCom management.
- b. **Create an effective communication plan between IT units reporting to the Vice Provost/CIO and the campus**
  - 1.) Implemented a communication plan for security awareness by means of presentations, posters, publications and informational emails.
  - 2.) Provided IT presentations at new employee and new student orientations.
  - 3.) Sponsored monthly, well-attended IT Briefings that are targeted for Local Support units on campus.
    - a.) Briefings focus on IT support issues, new technologies and changes in the ITD and Local Support communities.

#### **6. Optimize and manage growth of computing resources**

- a. **Establish disk quotas for email and Timeshare**
  - 1.) Notified email users on a monthly basis when they exceeded 100 mb on the email server.
- b. **Remove Roaming Access from the list of supported services**
  - 1.) Discontinued Roaming Access service effective December 31, 2002.
- c. **Evaluate costs of printing services via TRMS<sup>10</sup>, possibilities of electronic reporting**
  - 1.) Efforts were made by various business units to move from paper to electronic reporting by using Web Report Viewer (WRV).

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- 2.) The Controller's Office, Finance and NetCom provide electronic reports and have begun to discontinue delivering paper reports.

## **7. Security Initiatives**

- a. **Establish a communication process to educate our community on security topics**
  - 1.) Maintained an updated presence on the ITD website.
  - 2.) Conducted presentations for arriving students and employee orientations.
  - 3.) Provided printed materials at locations on campus.
  - 4.) Sent security alerts via email.
- b. **Evaluate the feasibility of an Intrusion Detection System**
  - 1.) Continued to study of vendor products and services in this area.
- c. **Participate in a cross-functional team concerning E-commerce initiatives**
  - 1.) Working with Emory business units on requirements for E-commerce, evaluating vendor projects and services, assessing security needs for this area.
- d. **Implement the firewalls for the North Decatur Building (NDB) Data Center and PS 8 project**
  - 1.) Worked with NetCom to implement the trusted network.
  - 2.) Hardware was received and NetCom began implementation of the hardware.
  - 3.) Began preparing the DMZ<sup>11</sup> and expect to begin migrating various business units on campus into the trusted core (October 2003).

## **8. Other work of the Technical Services Unit**

- a. **Provide service level agreements for critical services**
  - 1.) Service level agreements are being prepared for critical services that are provided for the university and will be communicated on the IT website.
- b. **Provide real time reporting for status of critical services**
  - 1.) Using an open source product, Big Brother, real time reporting is being collected for the email and web services.
- c. **Provide notification of processes for service interruption**
  - 1.) Sent Listserv notifications regarding service outage and resolution (SIRs).
  - 2.) Updated the system status page regularly throughout the day and increased accuracy and timeliness.
- d. **Continue to maintain the production services of the unit**
  - 1.) Production services were stable and experienced minimal down times.
  - 2.) Outage reports and root causes were available on the IT service outage web page.

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## Operational Services (OS)

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

- a. Work with customers to reduce printing by use of web viewing
  - 1.) Added 600 new university FAS accounts to Web Report Viewer (WRV) as maintenance this year.
  - 2.) Added the NetCom monthly invoices to WRN, (4,449 distributions).
  - 3.) Converted all the IDX<sup>12</sup> monthly reports to WRV, (668 reports).
  - 4.) Converted Healthquest posting reports and TSI<sup>13</sup> reports to WRN (August 2003).
  - 5.) Working with the Clinic to move IDX daily reports to WRV.
  - 6.) Moved FAS reports for healthcare to WRV.
- b. Work with vendors to reduce hardware/software maintenance costs
  - 1.) Decreased IBM maintenance costs for 2003/2004 by 5%.
- c. Study ways to reduce resources need to run the Data Center
  - 1.) Completely automated the IDX system, using Control-M.
  - 2.) Automated the recalls for HNA<sup>14</sup>
  - 3.) Rewrote the documentation for operations.
  - 4.) Finished a project that identified ways to further reduce resources in the Data Center (see below):
    - a.) Scheduled PeopleSoft using the Control-M scheduling package.
    - b.) Automated EMERGID<sup>15</sup>.
    - c.) Put PRODLOAD into Control-M.
    - d.) Automated opening the CICS files.
    - e.) Automated start-up of VPS<sup>16</sup> printers at IPL.
    - f.) Reviewed MVS<sup>17</sup> messages to eliminate or respond to automatically and sent to a central alert monitor.
    - g.) Reviewed HNA daily passwords setting and made recommendation on how to improve process.
    - h.) Improved MARS reprints and re-direction of prints.
    - i.) Looked at ways to improve billing of manual encounter forms, i.e., should billing be moved to TEC.
    - j.) Improved how medical record numbers for TEC are generated and put some control and polices in place at the TEC.
    - k.) Finished automation of the alerts for the small healthcare servers.

### 2. Meet service level goals for Emory University and Emory Healthcare

- a. All Tier 1 systems available 99.9% of scheduled uptime
  - 1.) Met goals for all Tier 1 systems: available 99.9% of scheduled uptime.
- b. EMC storage infrastructure available at 99.9% scheduled uptime
  - 1.) Met goals for EMC<sup>18</sup> storage infrastructure: available at 99.9% scheduled uptime.

### 3. Work with Facilities Management to improve availability in North Decatur Building

- a. Plan, design and implement additional UPS<sup>19</sup> and generator that will automatically back up current UPS and generator
  - 1.) Installed the new power distribution unit and put into production.
  - 2.) Estimated date for completion of project is March 2004.
  - 3.) Worked with FM to improve the response time when problems arise with NDB environmental system and train a backup person to support the NDB.

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- b. Upgrade the current generator
    - 1.) Engineering design was done by an outside consultant.
    - 2.) Installation and testing to be completed by March 2004.
    - 3.) Schedule system to go into production Spring break or after graduation in May 2004.
  - c. Add spare circuit breakers to UPS to eliminate downtime during maintenance
    - 1.) Engineering design was done by an outside consultant.
    - 2.) Installation and testing to be completed by March 2004.
    - 3.) Schedule system to go into production by Spring Break 2004.
  - d. Install new power distribution unit
    - 1.) The PDU was installed.
    - 2.) A building outage will be scheduled to tie the PDU into the building's electrical system.
- 4. Support AIS in the goal of reducing legacy applications and system resources**
- a. Participate in an evaluation of porting legacy systems to a UNIX platform
    - 1.) Examined various options with key vendors and reported findings to CIO.
    - 2.) Decision on how to proceed will depend on other factors, including the long-term direction for the financial systems of the university.
- 5. Enhance storage infrastructure to support Emory University and Healthcare**
- a. Design and implement storage infrastructure for medical records application
    - 1.) Completed Phase I of EMER storage infrastructure.
      - a.) Worked with storage vendor to do a complete refresh of OS storage infrastructure using the maintenance dollars of the old infrastructure.
      - b.) The refresh was scheduled for completion by October 24, 2003.
      - c.) The university and Healthcare storage infrastructure was totally separated.
    - 2.) Purchased and installed EMC's Enterprise Control Center (ECC) control center and storage scope software.
      - a.) Control Center allows management of the box remotely, providing rules-based policies.
      - b.) Storage Scope provides information on how efficiently storage is utilized.
  - b. Participate in implementing Business Continuity/Disaster Recover Plan approved by the Ways and Means Committee (WAM)
    - 1.) In 2002, WAM commissioned a group to look at the best way to address a Business Continuity/Disaster Recovery Plan (BC/DR) for the Enterprise.
      - a.) A series of information sessions have been held with WAM to present options and receive further direction.
      - b.) At the close of the year scenarios were being priced out for these options.
  - c. Continue to work with vendors to reduce cost
    - 1.) Reduced storage cost by two cents per MB.
  - d. Work with NetCom to insure network is in place to support the storage infrastructure needed for university and Healthcare applications
    - 1.) NetCom's new fiber-ring technology will support the next two generations of storage.
  - e. Provide tools and processes to improve availability and reduce costs
    - 1.) See #a2 above.
  - f. Position Emory to take advantage of new opportunities with data storage
    - 1.) Attended the Gartner conference; the Data Center Futures conference; corporate briefing at EMC; and presentations by 3PAR™, Network Appliance, and Hewlett-Packard.
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**6. Work with Emory Healthcare Information Services to consolidate NT/2000 servers**

- a. Assist in planning the migration including moving servers and storage to the NDB, backing up data to the enterprise storage solution, and taking over the Data Center support of the servers
  - 1.) Worked with Emory Healthcare to put together the test plan to evaluate IBM and Egenera blade servers to see if the technology could resolve current business issues.
    - a.) At the end of the evaluation, the Egenera met the business requirement.
    - b.) An enterprise contract was negotiated.
    - c.) The Egenera blade server was purchased and put into production.
  - 2.) Will plan, consolidate and move all the servers in the Emory Hospital to the infrastructure in the NDB Data Center over the next 6 - 8 months.
- b. Take over the hardware/software purchases and be responsible for installation and monitoring of the hardware
  - 1.) Project begun as a part of the Egenera and IBM I series.

**7. Other work of the Operation Services unit**

- a. Continued to maintain the production services of the unit.



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## Endnotes

<sup>1</sup> SPSS. Statistical Package for the Social Sciences, a comprehensive statistical software.

<sup>2</sup> ICDF. The Instructional Computing Development Fund was established to enhance undergraduate learning in Emory College through computing and related information technology, such as multimedia. The focus of this fund is on undergraduate education and the improvement of instruction and learning through technology.

<sup>3</sup> AIX. IBM's Unix Operating System.

<sup>4</sup> IP conferencing. Standardized data connections to exchange voice data that has traditionally been carried over the public switched telephone network (PSTN). IP conferencing routes voice packets over the internet, avoiding PSTN charges.

<sup>5</sup> DB2. A proprietary cross-relational database from IBM.

<sup>6</sup> COBOL. A programming language particularly suited for writing programs to process large files of data, using a vocabulary of common English words, phrases, and sentences. [1955-60; co(mmon) b(usiness)-o(riented) l(anguage)].

<sup>7</sup> SEVIS. Student and Exchange Visitor Information System. The Department of Homeland Security (DHS) has created this internet-based system in order to maintain current information on non-immigrant students and J exchange visitors (J students and J research scholars) and their dependents (all those with either F, M or J visa status). SEVIS will track F, M and J visa holders from the time they receive their visa documents (Form I-20 or Form DS-2019) until they complete their programs. Under SEVIS, universities are required to provide regular electronic reports to the DHS. SEVIS will link with colleges and universities, US embassies and consulates, U.S. ports of entry, the Department of State, and exchange visitor programs.

<sup>8</sup> LDAP. Lightweight Directory Access Protocol. A protocol (rule determining the format and transmission of data) for accessing online directory services.

<sup>9</sup> NIS+. Network Information System software. NIS (Network Information System) 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 facilities. Using NIS, each host client or server computer in the system has knowledge about the entire system. A user at any host can get access to 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.

<sup>10</sup> TRMS. Tool Registration and Management Services.

<sup>11</sup> DMZ. Stands for de-militarized-zone. The DMZ is an area between a public and protected zone and is used in complex multiple machine firewall setups.

<sup>12</sup> IDX. IDX Systems Corporation is provider of software, services and technologies for healthcare provider organizations.

<sup>13</sup> TSI. Enterprise system management software.

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<sup>14</sup> HNA (Healthcare Network Architecture). A project to upgrade and augment Emory's healthcare information systems using a product called HNA Millennium from Cerner Corporation. Millennium is an architecture that integrates component applications to disseminate clinical and financial information across an entire health system.

<sup>15</sup> EMERGID. Emergency Information Database.

<sup>16</sup> VPS. Virtual Private Servers.

<sup>17</sup> MVS. Multiple Virtual Storage, the operating system for older IBM mainframes. MVS was first introduced in 1974.

<sup>18</sup> 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).

<sup>19</sup> UPS. Uninterruptible power supply systems for continuous data network services.