

Systems

Systems Department Annual Report 2007-2008

The Systems Department is responsible for maintaining the stability and reliability of the Library's core systems and the supporting network, hardware and software. We are also committed to building our digital program and supporting research and development in new technologies.

There are four service units within Systems, and each unit has a manager or team leader. The leaders from the four service areas participate in setting direction and policies relating to the use of technology in the Systems Department. The service areas are: Desktop and Collaboration Services (David McDuffie), Database Applications (Larry Hansard), Network Services (Chris Helms), and Web Services (Heather King). All of these areas contribute to meeting the goals and objectives of the Library as a whole. The accomplishments of these units are reported here in the context of the Library's Strategic Plan 2007-2011.

Strategic Plan Goal I - Partnerships

I.1.1: Work with students to customize and design Library resources and services that are intuitive to Georgia Tech students and that support their research and scholarship

Heather King of the Web Services unit implemented the cluster availability application on the Commons website <http://librarycommons.gatech.edu/cms/> so that students could see at a glance which computers in the cluster were open. She also worked with the students to redesign their Summer Reading Program website.

To accommodate collaborative efforts geared towards improving the Library's learning/study spaces; Network Services deployed a bulletin board application. The pilot project used

the open forum space as a means to share ideas and gain input on the upcoming 2 west renovations with the Georgia Tech campus.

After a student survey (results received by Information Services Department) revealed that students were unhappy with the restricted browsing functionality of the library kiosk terminals (originally installed and configured to search the library catalog, only), Desktop and Collaboration Services worked with the Information Services Department to test and deploy a new kiosk software solution that will allow visitors to have more browsing freedom while maintaining certain security standards. Emmett Dennis customized and deployed Provisio's **SiteKiosk** to all library stacks kiosk computers.

1.5.1: Developing ongoing relationships with OIT and other campus technology units

To improve the performance of our Library's wireless corridor, Network Services collaborated with OIT/ART to upgrade of all wireless access points via 802.11a radios. This upgrade will reduce potential connectivity problems as seen during peak hours and exam crunch time.

Larry Hansard met with OIT-EIS to plan for access to library resources for foreign campuses.

1.5.2: Foster relationships with area academic libraries and archives - Goals for 2007-2008

- Continue working with Galileo on the Georgia Knowledge Repository

Larry Hansard represents the Georgia Tech Library as a Service Site Coordinator for the Galileo Interconnected Libraries (GIL) initiative, a consortium of the University System

of Georgia. His technical knowledge has made him an influential member of the GIL community. He is currently the lead programmer for the implementation of MetaLib and the technical lead for the GALILEO Knowledge Repository. In 2007-2008, there were two upgrades to the Voyager software used by the GIL libraries. We also realized a long term goal of removing social security numbers from the GIL patron records.

Growth of the MetaArchive private LOCKSS network moved us to select Capricorn Technologies as the hardware storage solution with their PetaBox 4000 unit. The new units will provide 4TB of raw storage space to assist in our preservations goals. Chris Helms has taken a leadership role in this collaboration and was instrumental in providing technical insight on how best to deploy these new units at all current and new member institutions. He is also representing the Library in conversations with Emory University about joint authentication and authorization for reciprocal access to resources for students attending joint programs.

Strategic Plan Goal II - Developing, Managing, and Making Accessible Library Collections

II.3: Accessing Collections - Goals for 2007-2008

- Loaded all Georgia Tech Library bib records, SMARTech records and all other digital meta-data into VUFind. Provided customization and integrated VUFind with MetaLib.
- Implemented VUFind on the website
- Loaded records into Verde and integrated Verde with SFX.
- Upgraded ERes to version 5.3.03; LDAP authentication is pending from the vendor.
- Upgraded ILLiad to version 7.2; implemented Odyssey receiving - implementation of Odyssey sending is a goal for next year
- Development of the Journal Value Project, a database to collect cost and valuation data for journals for Collection Development, is ongoing
- Plans to provide the European Patent Database have been dropped due to expense
- Conduct usability testing of the Library website and Library applications - Heather King co-managed a group usability test on eBook readers with Bonnie Tijerina and Julie Speer. She created a web application for managing the Tell Us feedback database.
- Employ a statistics monitoring and analysis plan - This year Google Analytics was implemented for the Library website.
- Build new templates for the Library Research Guides and Librarian Info pages - The Subject Guides workgroup is considering commercial software for this purpose.
- Create a style sheet for the Library website that will enhance browsing using mobile devices - continues for 2007-2008

The **Database Applications** unit provides maintenance and integration of the Library's core services: the catalog and institutional repository software; Open URL link resolver and Electronic Resource Management System. Interoperability of applications within the Library environment is key, as is authorization and control of access to locally-hosted web-based resources.

Mohsen Mahdavi-Hezaveh provides application support for Interlibrary Loan and E-Reserves software.

Larry Hansard worked with the College of Architecture Library to load student images into SMARTech and also to implement the ArchVision Architecture Image Database, an online image database using MDID open source software developed at James Madison University.

Other initiatives of the Database Applications unit include the development of programs to add 856 links to MRS conference catalog records, development of a system to weed out non current users for access to library resources, and implementation of SFX for linking to e-journals and browsing the A-Z e-journal list.

The **Web Services** unit is responsible for management of the Library web site, including design and maintenance of the architecture of the site. The unit assesses user needs through methods such as usability tests, surveys and statistical analysis. This analysis is the basis of decisions about our web presence.

Heather King of the Web Services unit launched the Library Commons website in August 2007. <http://librarycommons.gatech.edu/> She also implemented Adobe Contribute as a test with the Commons website content authors.

There were major web page re-designs for the Architecture website, the EPAGE website, the Reserves pages, and for the ILLiad public interface. Several new online forms include those for the EPAGE Video Recording Service, for Price's Pride and Kaiser award

nominations, and for Visiting Scholars (Circulation.) Other enhancements to the website include a dynamic News, Events, & Spotlight section, modifications to the Umlaut/SFX pages, and an instruction menu for Information Services.

Strategic Plan Goal IV - Expanding, Preserving, and Promoting Digital Repositories & Services

IV.1.1: Information Technology Infrastructure - Plan for future growth, backup, recovery, and maintenance - Goals for 2007-2008

- Implement virtual environment to increase availability, development opportunities, and enhance backup strategies
- Enhance storage capacity and integration among current services
- Implement a source code repository and tracking system

The Network Services unit is responsible for networking and information security for the Library's servers and extended network. This year, they implemented virtual server consolidation to help reduce hardware administrative tasks, eases deployment and upgrades of new server applications, provides a versatile development environment, and to reduce energy consumption. Two PowerEdge Dell 1950's attached to an AX150 storage array via a fiber channel switch serve as the initial core environment. To assist in the protection of the Library's critical server infrastructure, a NetBotz 500 monitoring appliance was deployed. It will be used to increase security awareness, improve network availability, and monitor physical environment conditions such as temperature, humidity, and airflow.

Chris Helms is responsible for planning and selection of a new archival, long term storage solution for all of the Library's digital storage needs. The system selected is a tiered storage architecture utilizing Sun based equipment and open source software. It will be implemented in 2008-2009.

To help reduce problems and provide a project-tracking framework a Trac + SVN server was created and deployed. Usage guidelines coupled with classes and one on one tutoring helped ease its adoption by both programmers and developers.

Three of the Libraries primary DSpace repositories Government Documents, Georgia Knowledge Repository, and SMARTech were successfully updated to version 1.5 of the DSpace software code. Improvements include Manikin, a new user interface, customizable submissions, SWORD "Simple Web-service Offering Repository Deposit protocol", Light Network Interface, and an event mechanism.

IV.1.2: Become a leader in the realm of digital repositories and services by encouraging research and use of open source software

Larry Hansard planned and developed ways to load records from other software into SMARTech. In one case, he wrote a program to load records of the Office of Sponsored Programs into SMARTech and the catalog. He also created programs to extract metadata from the TPUB database for the Technique. He also enhanced the way ETDs are loaded into SMARTech and the catalog.

Strategic Plan Goal V. Empowering and Developing Library Staff while Promoting Internal Communication and Collaboration

V.1 Organizational support and staff empowerment - to support and empower Library staff requires the provision of the resources necessary for continued productivity and growth, and greater input from all staff - Goals for 2007-2008

- Completed Altiris desktop deployment image consolidation, reducing all Altiris deployment images down to 3 core images (Base, Standard, Lab & Student) with Altiris modular packages for installing additional software for each department or service are
- Continued 12-month Microsoft Windows Vista and Microsoft Office 2007 suite testing; new Office suite is being deployed on new computers and any computer re-images; Microsoft Windows Vista SP1 testing continues
- Emmett Dennis completed the PC deployment schedule, replacing 'Group B' computers and monitors, including those in the Mailroom, Collection & Acquisition Management, and Systems

V.1.1 Foster a culture of inclusion that encourages open communication and participation

- Goals for 2007-2008

- The Systems Department has established an ongoing working relationship with the Digital Library Development (DLD) to ensure effective work flow and teamwork. The managers of the two technical departments meet regularly. The Network Services Manager has established the connectivity and security that DLD needs to work effectively. He also serves on the Repositories Development Team which discusses software upgrades, security (LDAP), and future planning for projects.
- The Scholarly Communication and Digital Services (SCDS) replaced the former Digital Initiatives Department. The working group which had been in place was replaced by DigiTech, which concentrates more on technical issues. Larry Hansard meets with the group to discuss technical processes related to repositories such as batch loading and cross-walks. There is also discussion of repository architecture and any functionality which needs to be added or modified.

The Systems Department has had several personnel changes this year. The Associate Director for Technology and Resource Services created a new technical department to provide development support for the digital agenda. One programming position was moved from Systems to Digital Library Development to provide application development and support for our digital repositories. Promotions include Chris Helms who is now our Network Services Manager, and Larry Hansard who was promoted to Technical Project Director. A new position was created for a Systems Support Specialist to work in Network Services. Randy Johnson has joined us in that position. Beth Thomas assumed the duties as our Training Coordinator. The Web Program manager hired a Graduate Research Assistant from Computer Science to do back-end programming.

V.2 Communication strategies create an inclusive culture where staff are aware of Library processes, and outlets for dissemination of information are available - Goals for 2007-2008

- Completed project for new blog, wiki, document sharing collaboration system by deploying Jive Software's Clearspace collaboration server to address library's digital collaboration needs; Clearspace instance named **libSHARE** <https://libshare.library.gatech.edu/clearspace/>

- **The process of transitioning information from the Intranet to the content management system libSHARE is underway and will continue into 2008-2009.**
- Created and support new library podcasting service by leveraging Jive Software's Clearspace collaboration server for audio and video podcasting

Desktop and Collaboration Services (DCS) has been instrumental in responding to the goals in Section V of the Library Strategic Plan. The core services of the unit include maintaining all desktop hardware and software for staff use.

libSHARE, the library's Web 2.0 collaboration tool, has become a critical service solution for several departments to manage customer requests. Almost all of our library departments and service areas are now leveraging libSHARE's wiki functionality to move internal policies and procedures into digital format. Library committees and groups are using libSHARE's blogs and discussion threads to add a degree of transparency regarding meeting topics/minutes. The library is also in the process of moving the popular library newsletter (The Connexus) from Georgia Tech's SMARTech to libSHARE which is hoped to increase library employee participation. libSHARE was also the home of the library's 'Learning 2.0 @ GT' training courses. DCS collaborated with a group of librarians and professional staff to recreate and customize these training courses that aimed to improve all library employees' knowledge about emerging WEB 2.0 technologies. David McDuffie coordinated the collaborative effort, and Heather King of the Web Services unit is also a libSHARE administrator. She created the libSHARE logo and transitioned much of the information on the Library's Intranet to the new application, including the Library Emergency Manual. Together, they established the libSHARE Committee to provide oversight for the design, functionality, and policies of the libSHARE web content management system. <https://libshare.library.gatech.edu/clearspace/docs/DOC-1310>

V.3 Training and Opportunities - Goals for 2007-2008

- Provide a wide variety of training opportunities to the Library as a whole.
- Provide a training area staff can experiment with and learn new software.
- Provide a variety of training materials, both electronic and hard copy
- Respond to requested training needs and provide training for 'routine' software

Last year we targeted training as an essential element in maintaining ongoing communication about technology changes. Beth Thomas assumed the role of Training Coordinator for the Systems Department, and we identified several goals for 2007-2008.

This year, Beth developed a training plan for a major new application: the collaboration/content management application known as libSHARE. Seventy Library employees took part. Evaluations returned following the training expressed much satisfaction with both the course content and the facilitator. Also offered during FY 2007/08 was an Oracle Calendar training session for members of the Collection Acquisitions and Management department. The training coordinator arranged for Alex Agle, an OIT staff member, to conduct the session.

Additionally, Chris Helms, Network Services Manager, conducted departmental training classes on Track/SVN and Managing Accounts using MAGE.

The Training Coordinator also set up a dedicated training space in the Systems department for staff members who need to use specialized software, tutorials, or other online training. This set-up is also useful for evaluating new software programs. Staff members have used the training PC for creating video presentations and tutorials.

Sustainability Initiatives - For the past decade, Georgia Tech has been a leader in embracing sustainability initiatives across our campus. Sustainability has been written into our Institute's mission statement, strategic plan, campus master plan, and landscape master plan. The Systems Department is contributing to these initiatives in several ways. Emmett Dennis implemented a power management program that reduced the Library's power consumption to improve our energy footprint on campus. The scope of this project included testing the power consumption for several computer/monitor models, reconfiguring all library computers to accept the **Wake On LAN** tickle command, reconfiguring power settings for all library network printers, and re-writing the library's desktop power management policy. The implementation of a virtual environment by Network Services has also helped to reduce power consumption. Beth Thomas coordinates an annual electronics recycling drive in conjunction with the city of Decatur, and she has taken a leadership role in recycling for the Library. Individually, we practice several earth friendly commute alternatives, including walking to work, using public transportation, and driving hybrid cars.

Presentations

Larry Hansard and Lori Critz, "Discovery Tool VUFind: Georgia Tech's Implementation Enhances Findability of Resources," GIL Users Group Meeting, Fort Valley, May 2008

Heather King, Bonnie Tijerina, and Julie Speer, "E-books: an account of the student experience," Lita National Forum, Denver, CO, October 2007

Heather King, Bede Mitchell, Deborah Stanley, Karen Minton, "Usability on My Mind: Usability Testing Experiences in Georgia," COMO, Georgia Council of Media Organizations 2007 Conference, Jekyll Island, October 2007

Conferences / Training

Learning 2.0, June 2008	Susan Coleman
8th annual GIL Users Group Meeting, Fort Valley, May 2008	Larry Hansard
Open Repositories, Southampton, UK, April, 2008	Larry Hansard
ViDe Conference, Atlanta, March 2008	Mohsen Mahdavi-Hezaveh
Microsoft Heroes Happen Here 2008 Launch Event, April 2008	Chris Helms
Project Management: Understanding the building blocks, March 2008	Chris Helms
OCLC ILLiad Annual meeting, Virginia Beach VA, March 2008	Mohsen Mahdavi-Hezaveh

COMO, Georgia Council of Media Organizations 2007 Conference, Jekyll Island, October 2007	Heather King
Lita National Forum, Denver, CO, October 2007	Heather King
GTISC Security Summit 2007, Atlanta, October 2007	Chris Helms, Mohsen Mahdavi-Hezaveh
Webmaster Jam Session, Dallas TX, September 2007	Heather King
<i>Management Development Certificate, August 2007 - May 2008</i>	David McDuffie
<i>Defining Customer Service Certificate July 2007 - April 2008</i>	Beth Thomas
Train the Trainer (New Horizons) July/August 2007	Beth Thomas
MALTA IV at Emory University, Atlanta, July 2007	Susan Coleman, Larry Hansard

Goals for 2008-2009

Strategic Plan Goal I - Partnerships

Work with the USG GIL OPAC committee to help develop VUFind for all USG schools

Strategic Plan Goal II - Developing, Managing, and Making Accessible Library Collections

Systems

Release a production version of VUFind and MetaLib for Georgia Tech for fall 2008

Utilize the X-Server API for MetaLib to enable us to build a more user friendly interface and other customization and to preserve code changes when upgrades are required

Modify VUFind to show user centralized accounts from Voyager and ILLiad

Install and evaluate an open source alternative to ERES

Upgrade Voyager software version 7.0 and Oracle version 10.0

Upgrade ILLiad to version 7.3 and implementation of Odyssey sending

Upgrade E-Res to version 5.5

Install and evaluate RAPIDILL for interlibrary loan

Conduct usability testing of the Library website and Library applications

Implement enhancements for those accessing the Library website using mobile devices

Strategic Plan Goal IV - Expanding, Preserving, and Promoting Digital Repositories & Services

Implementation of an archival storage solution including:

- Sun StorageTek 5800 - fixed content data archiving for long-term preservation and protection of data assets
- Sun StorageTek SL500 - reliable scalable data backup for disaster recovery
- Sun StorageTek Storage Archive Manager (SAM) software - data classification, centralized meta-data management, policy based data placement, protection, migration, long-term retention, and recovery
- Sun StorageTek Quick File System (QFS) - file sharing for collaborative environments sharing large data volumes

Strategic Plan Goal V - Empowering and Developing Library Staff while Promoting Internal Communication and Collaboration

Continue the process of transitioning content on the Intranet to libSHARE.

Provide training classes for the Zimbra email system, for the expanded version of libSHARE, and for Office 2007.