The System Sustains

By Mary Ross, Head, Systems Office

What lies on the lower level of Waldo Library behind a simply marked door located in the northwest corner? Few know that the electronic heart of University Libraries system is tied to the Systems Office found behind that door and depends on the people who work there. Even fewer understand the concept of what an electronic library system means in this day and age. One definition, based on Federal Standard 1037C, states that a system is “a collection of personnel, equipment, and methods organized to accomplish a set of specific functions.” In the University Libraries’ system, this includes everything that electronically supports the Libraries’ functions to collect, organize, preserve, and provide access to information in all formats.

Those staff members who work out of that hidden corner of Waldo have roles that cover an array of tasks that began when the first pieces of library technology were envisioned over a decade ago. Staff of the Systems Office developed and continues to develop the specifications for the majority of the electronic resources that are to be purchased or licensed. The staff of systems must be alert to the latest innovations and how such advances would augment and complement what we have in place. Once an order of hardware or software arrives in the building, the staff must inventory the items, then install and configure them, and, of course, continue to maintain them. Because of the short life span of modern technology, the System Office staff is never finished with this responsibility. There is an ongoing demand for the latest upgrade or innovation in both software and hardware.

The complex task of maintaining the electronic University Libraries system is comprised of an extraordinary number of functions that continue 24/7. Amazingly, only five staff members currently hold responsibility for the system maintenance of Waldo Library and the four branches. These five keep “online” the 95 FTE faculty and staff members, the 215 students who work for the Libraries, and the thousands of students, faculty, and staff who access the University Libraries’ Web site through terminals. Inside the Libraries' physical locations, there are 170 computers for patron use, two classrooms with 50 PCs, and some 200 computers for the Libraries’ faculty, staff, and students. To make the task more complex, the computers are found in six locations, in four buildings, across campus: Waldo Library; the Music and Dance Library, Dalton Center; the Archives and Regional History Collections, East Hall; and in Sangren Hall, there are the Education Library, Visual Resources Library, and the Videotape and Film Collection.

In order to assure that the Libraries’ system does accomplish its functions, each member of the Systems Office must assume both unique and shared responsibilities. Mary Ross, Associate Professor and Systems Administrator, oversees all of the operations of the Systems Office, and is the prime mover behind WestCat, the online catalog that must provide multiple points of access to the Libraries’ vast collection of resources. Paul Howell is the Systems Manager, Nanci Aalsburg is the Systems Specialist, and Ed Holloway and Tim DeBoer are Systems Technicians.

The Catalog Controls...

Almost no one who uses libraries in the electronic world of the 21st century realizes the significance, complexity, and ongoing development required of online catalogs such as WestCat. In the University Libraries, Mary Ross has the key role in implementing and upgrading the WestCat system. WMU’s online library catalog is the electronic version of the information that, until a decade ago, would have been in a card catalog with drawers filled by 3 by 5-inch cards. Most users think of a catalog in terms of locating individual print and non-print titles by author, title, keyword, etc. In addition there are numerous subsystems that handle circulation, course reserves, recalls, fines, inventory control, and resource sharing—to name the most common ones. In 1998, WMU, under the hands-on direction of Mary Ross, implemented the software program called Voyager developed by Endeavor Information Systems, Inc.

One of the great strengths of Voyager is that it can be and has been tailored to the needs of any given institution. The WestCat that users navigate is the result of a Screens Committee working with the Systems Administrator to design information displays that will make the “catalog” easy to understand and use by both beginners and experts. However, new versions of the software are periodically produced by Endeavor and have to be brought online within the parameters of the University Libraries’ system. The process for upgrading is complex since each new software version isn’t received adapted to the Libraries’ customization. Once a new version is brought up, every function of the Libraries is impacted by the not yet customized update. Users and staff lose search methods that worked the day before; screens revert to discarded formats; whole access points disappear. As a result, the staff of the Libraries AND its users find themselves at a loss to retrieve information other than that built into licensed full-text sources or available through the public Web. At such times, the Systems Office staff and especially the Systems Administrator work overtime to restore the WMU customization. One special project of high priority is to implement a simple backup catalog that would reduce the loss of accessibility during periods of transition.

The System Supports...

The portion of WestCat that is used by the patrons to locate items in the Libraries’ collections is just the tip of the iceberg with much of the supporting structure done behind the scenes by staff in other departments of the Libraries. The work of those staff members, in turn, is organized through the Systems office. Ross, the Systems Administrator, must coordinate every facet of the Voyager software. One example is employee authorization. Each of the Libraries’ employees who inputs and maintains data in WestCat needs to be assigned a user name and password and the appropriate level of security to do his/her work. Location names, to let patrons know where the materials are shelved, must be created and then added to the employee’s security clearance, as well as other places in System Administration. The circulation calendar has to be established and “inputted” for each of the main and branch libraries including the hours of operation, and the days that the buildings are closed, so that patrons’ materials are not due on a day or at a time.

Mary Ross, Nanci Aalsburg, Paul Howell, Tim DeBoer, Ed Holloway (left to right)
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when Waldo and its branches are not open.

In addition to catalog use of the WestCat system, there are several special functions that have been added. One of the early successes was the Endeavor ImageServer module that allows the Visual Resources Library's slides to be displayed for users of WestCat. There is also a Media Scheduling program that permits faculty and students to schedule a time for using educational video and film collection resources. These "extra" modules, while enhancing WestCat, do involve time-consuming efforts by the systems staff and staff of the affected area.

In July of 2002, the latest version of the Voyager software was installed. During December 2002, the bibliographic records for the Superintendent of Documents' publications that are housed in the Libraries' depository collection were added to WestCat making thousands of "new" (not currently found in WestCat) sources accessible to searching by author, title, keyword, subject, etc. Searching by subject will be enhanced by a project in progress that involves special records to make it easier to do official subject searches in WestCat. The Systems Office is also working with the University Archives and Regional History Collection staff to integrate their newly created online catalog of selected materials into WestCat.

The Manager Maintains...

Although the Voyager software is essential to the Libraries overall system and demands great amounts of time, the Systems Office staff has multiple tasks and duties required to keep the entire library system functioning through a variety of additional components. Paul Howell has overall responsibility for the management and operation of all of the Libraries' hardware and software, other than WestCat with which he assists when the Systems Administrator is out of the office. As Systems Manager, he approves the Libraries' employees' special requests for hardware and software to be sure that what is purchased will work with the University's network and be supportable by the Systems Office. His expertise about the latest in computer technology also aids employees in making decisions as to upgrades. Howell works with vendors to develop the specifications for the hardware and software purchased to support daily operations, and patron access to our Libraries' resources. A current major project is to find a reliable replacement for the 170 patron terminals that have been in use for up to six years and are beginning to fail.

Because Paul Howell had special experience in printing and graphics before joining the University Libraries, he has been instrumental in obtaining equipment for the University Libraries fledgling digital imaging program. The Libraries hope to preserve fragile materials, such as rare Nazi newspapers from World War II, and make them more accessible by digitizing them. The digitization project will begin with selected collections in the Archives and Regional History Collections, Special Collections, and the Visual Resources Library. Yet another responsibility of Howell relates to the University's strategic plan development. He serves as the Libraries' representative to the Strategic Planning Information Technology Architecture and Standards Committee. This group is developing the standards for hardware and software that the University will support. This "system" will affect the use of information technology by all departments—not just the Libraries.

Within the last year, the Libraries purchased several new software programs to support the work of Resource Sharing, to provide course reserve materials in electronic form for both Access Services and Resource Sharing, and to offer online (virtual) reference assistance (both e-mail and chat) through Central Reference and other reference services. These three services (document delivery, electronic reserves, and online reference) will help patrons locate online information that they need while not physically in the Libraries. The programs are housed on a new server with an operating system (Windows 2000 server) that was new to the University Libraries. Paul Howell and Nanci Aalsburg both received training in this operating system, with Paul being the primary support person for these programs.

The LAN Links...

Nanci Aalsburg supports the University Libraries' operations and serves as the Novell LAN (Local Area Network) Administrator. Novell is the operating system of the server that houses specialized library software, such as that used by the Cataloging Department, as well as storing documents related to every aspect of the Libraries, e.g., policies, procedures, meeting minutes, Web pages, official communications, staff communications, etc. The LAN enables all of the staff to share documents and have networked printing. Nanci and Paul Howell are Certified Network Administrators, but Nanci has primary responsibility for this server. As Ross authorizes Libraries' employees in the WestCat Sys Admin, Aalsburg adds employees to and assists them in the use of the Novell NetWare.

The Libraries are part of the campus-wide Novell "tree," as the Novell system administration data organization is described. Aalsburg also coordinates the Libraries' GroupWise e-mail accounts with the campus GroupWise administrator. Through the Novell NetWare Administrator, employees learn account login procedures, how to access the software on the server, and how to use the e-mail system. In addition, each employee is given information on the University and Libraries' policies regarding computer usage, as well as the Systems Office Help Desk policy and procedures. In turn, both Nanci and Paul Howell are members of the campus-wide LAN Managers group so that they have access to and help create the campus-wide policies and procedures on LANs that are used in the Libraries.

Another important responsibility of this network administrator is to manage the inventory software program. There is a continual tweaking of the process of tracking hardware and software from order, through purchase, receipt and inventory, and installation. These steps are then coordinated with the Help Desk module for the maintenance phase of the item. At the end of the item's useful life, it is taken out of inventory, library software is removed from the PC, and the item is sent to the University's surplus sale.

The Technicians Triumph...

In addition to serving as a technician, Ed Holloway is primarily responsible for managing the Libraries' Help Desk module. Or to put it more directly: When anything stops working, a staff member calls the Libraries' hot line or e-mails for "help." Within minutes, Ed is on the way—or he will contact the appropriate person in the Libraries or the Office of Information Technology to resolve the problem. Sometimes the problem is with a database vendor off campus. The vendor may not be aware of the problem, or may already have posted a message about the problem, and this vendor information is relayed to the Libraries' departments experiencing the problem.

A major and never-ending responsibility of the Libraries' technicians is installing new or replacement computers, monitors, attached printers (the printer on the desk connected directly to the computer), and the keyboards and mice for every one of the Libraries' employees. There is more to this than meets the eye. An "image" for each computer model is created, which means that Systems sets up all of the basic programs that the Libraries' personnel use, including Voyager (for WestCat input and maintenance), Microsoft Office, and browsers.
When installing a replacement computer, so that they can be reinstalled on the new computer that has already been set up with the basic image and programs. This also includes installing the printer drivers (software that lets the computer communicate with a printer) for the printers that each employee uses. As an important subsystem to this individualized employee and patron service, it should be noted that Ed also services the Libraries' public access CD-ROM databases, e.g., African American Artists On Disc, Census of Population and Housing, CETADOC Library of Christian Latin Texts, etc. As updates are received, Ed must install the new disks in the machines, and test to see if they are working correctly.

Assuring that the dozens of public computers found in the Libraries “work” for users is another large undertaking of the technicians. This involves several sets of images, because there are several models of computers. These computers have security software to prevent patrons from changing the original configuration that was installed, and software that will return the computer to its original image when the computer is turned off and back on. Among the 170 computers in daily use are some of the oldest in the Libraries. Although there is a plan to replace the computers within the next couple of years, Ed Holloway and Tim DeBoer deal daily with failing and, in some instances, failed computers.

Tim DeBoer, the latest addition to the staff in the Systems Office, came to work at the Libraries as a contract employee from an outside employment agency. His position is essential to continue the level of services that Systems has provided for the Libraries’ other employees and its users—all of whom must use computers to do their work. In addition to his one-on-one work installing employee computers and his maintenance of public terminals, this technician does much of the data input for the inventory system. His growing background in trained computer maintenance is, as with the other members of Systems, a crucial element in the overall functioning of the office.

“Organized to Accomplish”

One final task of the Systems Office needs to be noted since, without it, the University Libraries would not communicate electronically—either internally or externally. The key word for this achievement is “connectivity.” All of the Libraries’ computers and network printers have Ethernet connections. Ethernet refers to the “wiring” that ties together each computer to the server housing WestCat, all other electronic resources, network printers, AND the rest of the world. In 2001, the Systems Office radically improved connectivity by installing new wiring for the entire staff and in 2002, the same faster connectivity was made available for the online public access catalog, the OPAC terminals. Also in 2002, Waldo Library became one of the first buildings on campus to have wireless connectivity and today all of the University Libraries’ main and branch locations are wireless. The bottom line is that a wireless or wired environment—seen or unseen—must be sustained by a Systems Office that maintains, behind the scenes, all of the electronic components that comprise the University Libraries’ system.

The Systems Office of the University Libraries is, according to definition, a “collection of personnel, equipment, and methods.” This “collection of personnel” enjoys the ever-changing challenges of the information age and strives to make everyone’s mountainous computer problems into level playing fields—not just small molehills waiting to erupt. Electronic change is recognized as constant, necessary, and inevitable. The goal of the staff of the Systems Office is to facilitate the work and respond to the needs of all who work in and use the University Libraries: faculty, staff, students, and community users alike.

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**Gatherings**

No. 32, Winter 2003

Gatherings is published triannually by the Friends of the University Libraries, Western Michigan University, Kalamazoo, MI 49008-5353. Contributors to this issue include Maria Perez-Stable, Professor and Head, Central Reference; Mary Ross, Associate Professor and Head, Systems; and Mary Schmich, Columnist, Chicago Tribune.

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**History in the Present—II**

By Maria Perez-Stable
Professor and Head, Central Reference

[In the Fall 2002 issue of Gatherings, Perez-Stable described four outstanding primary source collections of U.S. history available to the students, staff, and faculty at WMU. She also noted one superb full-text resource available to anyone who can access the Internet: the Making of America. Her odyssey through digitized history continues with more amazing sources found on the Web.]

American Memory Historical Collections (http://memory.loc.gov/ammem/ahome.html) are a superb place to continue our journey through historical cyberspace. American Memory is a major component of the Library of Congress’ National Digital Library Program. The “historical collections” are multimedia libraries of digitized documents, photographs, pamphlets, sound recordings, maps, moving pictures, and written text from the Library’s Americana collections. There are currently over 70 collections in the American Memory Historical Collections, including “The Emergence of Advertising in America: 1850-1920”; “Civil War Maps”; “From Slavery to Freedom: The African-American Pamphlet Collection, 1824-1909”; “Voices from the Dust Bowl”; “American Indians of the Pacific Northwest”; “Mapping the National Parks”; “The Church in the Southern Black Community, 1780-1925”; “Votes for Women: Selections from the National American Woman Suffrage Association Collection, 1848-1921”; and “Baseball Cards, 1887-1914”—just to name a few!

American Memory includes a wide variety of social history collections. One of my favorites is “An American Ballroom Companion: Dance Instruction Manuals, ca. 1490-1920,” presenting a collection of over 200 social dance manuals owned by the Library of Congress. The list begins with a rare 15th century French work on dance and ends with the 1929 publication by Ella Gardner titled Public Dance Halls, Their Regulation and Place in the Recreation of Adolescents (U.S. Childrens Bureau). Along with the actual dance manuals (including theatrical dance), there are treatises on dance etiquette, dance histories, and anti-dance discourses. Another interesting collection, this one in film, is the “Fifty Years of Coca-Cola Television Advertisements: Highlights from the Motion Picture Archives at the Library of Congress.” It presents an assortment of television commercials, never-broadcast outtakes, and experimental footage recounting the historical development of television advertising for this well-known beverage.

Closer to home, American Memory has a...