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Instructions for authors appear on the *Library Resources and Technical Services* Web page at [www.ala.org/alcts/lrts](http://www.ala.org/alcts/lrts). Copies of books for review should be addressed to Edward Swanson, Book Review Editor, *Library Resources and Technical Services*, 1065 Portland Ave., Saint Paul, MN 55104; e-mail: [swans152@umn.edu](mailto:swans152@umn.edu).

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# Editorial

Peggy Johnson

I recently explained the responsibilities of a journal editor to a colleague in my library. I spent time going through the sequence of:

- Working with an editorial board
- Soliciting submissions
- Receiving and acknowledging solicited and unsolicited manuscripts
- Sending manuscripts for review and providing the reviewers with a list of evaluation criteria
- Maintaining a system that tracks manuscripts through the process
- Receiving manuscript reviews, compiling comments, and working with authors to bring submissions to publication
- Waiting for revisions and, perhaps, through a second round of reviews
- Assembling manuscripts (including figures and tables) for issues and transmitting the package to the ALA production office
- Working with a production editor and reviewing page proofs, which may mean looking at up to three iterations

I was focusing on the work—the process, the many steps in bringing an issue to publication, and the challenge of tracking everything. My colleague ignored my litany and cut to the heart of the matter. She observed, “Hey, you get to read what people in technical services are doing right now. You work with people from many different libraries. You read about new initiatives, current trends, and hot topics. That sounds exciting.” She is right! Being an editor is hard work, surely, but it is also extremely interesting, educational, stimulating, and enjoyable.

I am confident that readers will find articles in this issue that will interest, educate, stimulate, and absorb. The first issue of volume 48 has articles on cataloging electronic books; developing and managing collections in libraries, archives, and museums; managing license agreements for electronic resources; educating for cataloging and metadata; coordinating and managing integrated library systems; developing and maintaining catalog department Web pages; and creating a system for managing integrated access to aggregated journal text. In addition, I am pleased to present the 2002/2003 annual ALCTS president’s report by Olivia Madison. Publishing this annual report is one of *LRTS*’s mandates.

I am delighted to announce that indexes (v.41, 1997–present), tables of contents (v.42, 1998–present), and abstracts (v.45, 2001–present) have been posted on the *LRTS* Web site, which has a new shortcut at [www.ala.org/alcts/lrts](http://www.ala.org/alcts/lrts). Links to these resources appear in the left navigational column.

Please consider writing for *LRTS*. Instructions for authors appear on the *LRTS* Web site. I welcome inquiries about potential submissions and am committed to working with authors to develop high-quality papers. This is your professional journal. Help to make it an excellent one!



# Association for Library Collections and Technical Services Annual Report 2002/2003

**Olivia M. A. Madison, ALCTS President**

**T**he strategic mission of the Association for Library Collections and Technical Services succinctly states that

The ALCTS Division must continue to be on the forefront of recognizing and influencing these fundamental changes as envisioned in our strategic plan: ALCTS envisions an environment in which traditional library roles are evolving. New technologies are making information more fluid and raising expectations. The public needs quality information anytime, anyplace. ALCTS provides frameworks to meet these information needs.

During 2002/2003, it was my distinct privilege to lead this vital and distinguished division of the American Library Association in meeting this challenging mission.

As I mentioned in my first presidential column, we continue to face dynamic, challenging, and increasingly legalistic times within our profession. Our times are characterized by fundamental changes in the nature of our collections, acquisitions processes and policies, Web-based online catalogs and systems, and evolving bibliographic, authority, and preservation standards. These changes are deeply embedded in rapid technological advances and a difficult narrowing yet expanding marketplace. Furthermore, we are in a demanding transition where the traditional and the new must coexist. These fundamental changes impact not only how we conduct business, build online access tools, and preserve our collections but also on shifting staff needs to develop effective expertise and technical skills. Collectively we met these challenges and made extraordinary progress in carrying out our strategic goals and strategies.

This annual report reflects the ALCTS division's many and diverse accomplishments as they relate to its six strategic goals: Standards, Best Practices, Education, Professional Development, Interaction and Information Exchange, and Association Operations.

## **Standards and Best Practices (Goal #1 and #2)**

Standards development and best practices were essential program themes at the Annual Conference and included:

- Don't Be Dysfunctional: How to Put FRBR in Your Future

- Getting the Most Out of Subject References
- ISBDs—Do We Still Need Them?
- Metadata Harvesting
- Options for Circulating and Reference Collections
- Two Thumbs Up: Preservation Film Festival
- Print and Electronic Approval Plans in the Twenty-First Century

ALCTS remained highly involved in several issues related to the Library of Congress (LC) Action Plan's action items for bibliographic control of Web resources. Last year, the ALCTS board charged a task force to review the plan's "Bibliographic Control of Web Resources" and recommend action items suitable for ALCTS to develop in partnership with the Library of Congress. Karen Calhoun is serving as the task force chair. The task force appointed three subgroups to carry out the work of three identified action items (*Task Force Report*, March 23, 2003):

- Library Information Science (LIS) Education (chaired by Beth Picknally Camden with Ingrid Hsieh-Yee serving as principal investigator)—prepare educators and trainers to teach metadata and cataloging.
- Continuing Education (chaired by Carol Hixson)—prepare practitioners to do metadata and cataloging work.
- Metadata Enrichment (chaired by Judith Ahronheim with Marcia Bates serving as principal investigator)—explore ways to enrich metadata records.

During the Toronto meeting, the board approved ALCTS cosponsorship with Library of Congress, OCLC, and ALISE of a forum at the 2004 ALA Midwinter Meeting on preparing metadata and cataloging education and trainers. Also the board will invite Beacher Wiggins or John Byrum to attend its Midwinter Meeting to update the board on the progress that has been made on the LC Action Plan for Bibliographic Control of Web Resources.

### **Education and Professional Development (Goal #3 and #4)**

Education and professional development successes abounded this year—virtually, physically, and within and outside conference venues. Moreover, in recognition of significant contributions of our ALCTS colleagues, we conferred major awards and citations to many outstanding recipients and, with heartfelt memorial resolutions, formally noted three of our respected colleagues who died this year.

#### **Program and Professional Development**

The Fundamentals of Acquisitions Web course was given four times during the year, twice to more than 110 people. The AACR2 and Metadata Institute was given also four times—in Arlington, Virginia, and Chicago, Illinois, in November; Orlando, Florida, in February; and in San Jose, California, in April.

Unfortunately, ALCTS's scheduled preconferences suffered from the lower registration levels for the Annual Conference. While the Knowledge without Boundaries Preconference was cancelled due to low registration, we still provided three noteworthy preconferences: Business of Acquisitions: Working Together to Get It Done—Acquisitions Librarians as Collaborators; Dewey Decimal Classification 23 and Beyond: An Introduction to the New Edition of the Dewey Decimal Classification; and Serials Cataloging Cooperative Training Program (SCCTP): Electronic Serials Cataloging Workshop—Integrating Resources Cataloging Workshop.

The Annual Conference programs covered an extensive and exciting array of current topics, including Digital Rights/Wrongs, Repair Options at the Point of Circulation; ISBDs—Is There Still a Need?; Mentoring Library School Students for Cataloging; Consortial Pricing Processes; Metadata Harvesting for the Deep Web via OAI; Training for Effective Subject Cataloging; Approval Plans for Today and Tomorrow; Preservation Reformatting; and Getting Published.

The President's Program Committee (Jennifer Younger, chair; Pamela Bluh, Anne Kinney, Joyce Ogburn, and Helen Reed) did a superb job of building upon last year's highly successful President's Program in Atlanta, which focused on the theme of workplace. How do we reaffirm and build upon the need for a positive work environment? At the 2002 Annual Conference, Dr. Edward Hallowell and a panel explored interpersonal connection and disconnection in the workplace—the value of the human moment (how we connect) in an increasingly isolated technological environment. For the 2003 Annual Conference, we continued to explore the theme of a positive work environment. Lynne Lancaster (Bridgeworks) was the featured speaker, and Jessica Albano (of the University of Washington), served as a respondent. Lancaster, an author and consultant, described the characteristics of four generational groups and explored generational differences encountered within general and library workplaces in a highly enjoyable manner with thought-provoking examples. She offered pragmatic suggestions for ways that staff of all generations could work together effectively, be successful in recruiting individuals from all generations, and meet the needs for an effective work environment. Jessica Albano gave an equally enthusiastic response by personally underscoring Lancaster's points regarding the joys and, at times, difficulties in mixing generations within the library workplace. The program ended with

virtually all attendees remaining to participate in a lively question-and-answer period—a testament to their interest in and the quality of both presentations. Lancaster and her publisher, HarperCollins, generously provided the audience with free autographed copies of her latest book, *When Generations Collide* (coauthored with David Stillman).

At the Midwinter Meeting, we held our first-ever midwinter symposium, “Managing Electronic Resources: Meeting the Challenge.” It was a sellout according to the report written by Pamela Bluh and published in the ALCTS Newsletter Online (ANO) (14, no. 1): “On Friday, January 24, 2003, a bitterly cold Philadelphia morning, an attentive audience of approximately 150 librarians, vendors, publishers, and other industry professionals assembled to hear presentations from eight speakers on managing electronic resources . . . [which] provided a broad overview of the topic as well as a variety of specific options for organizing the universe of electronic resources.” ALCTS is planning a second midwinter symposium for San Diego that will also address the management of electronic resources.

#### ALCTS Awards

A vital part of any staff development program is recognizing excellence. ALCTS and its sections annually recognize significant achievements and accomplishments of its members. Our awards and their honored recipients for 2003 were:

##### *Best of LRTS Award*

Recipient: Richard Fyffe, University of Kansas

Article: “Technological Change and the Scholarly Communications Reform Movement: Reflections on Castells and Giddens,” *Library Resources & Technical Services* 46, no. 2 (April 2002): 50–61.

Sponsor: ALCTS

Award: \$250

##### *Blackwell's Scholarship Award*

Recipient: Richard Fyffe, University of Kansas

Article: “Technological Change and the Scholarly Communications Reform Movement: Reflections on Castells and Giddens,” *Library Resources & Technical Services* 46, no. 2 (April 2002): 50–61.

Sponsor: Blackwell's

Award: \$2,000 Scholarship recipient: Simmons College Graduate School of Library and Information Science (Michele Cloonan, Dean)

##### *Bowker/Ulrich's Serials Librarianship Award*

Recipient: Frieda Rosenberg, University of North Carolina at Chapel Hill

Sponsor: R. R. Bowker

Award: \$1,500

##### *First Step Award/Wiley Professional Development Grant*

Recipient: Dianne Ford, Elon University

Sponsor: John Wiley and Sons

Award: \$1,500

##### *Leadership in Library Acquisitions Award*

Recipient: Julia Gammon, University of Akron

Sponsor: Harrassowitz

Award: \$1,500

##### *Margaret Mann Citation*

Recipient: Thomas J. Delsey, recently retired from the National Library of Canada

Sponsor: OCLC

Award: \$2,000

Scholarship recipient: University of Western Ontario Faculty of Information and Media Studies (Catherine Ross, Dean)

##### *Esther J. Piercy Award*

Recipient: Karen E. K. Brown, State University of New York at Albany

Sponsor: Yankee Book Peddler

Award: \$1,500

##### *Paul Banks and Carolyn Harris Preservation Award*

Recipient: John F. Dean, Cornell University

Sponsor: Preservation Technologies, L.P.

Award: \$1,500

##### *Hugh C. Atkinson Memorial Award*

Recipient: Wendy Pradt Lougee, University of Minnesota

Sponsors: Association of College and Research Libraries, Association for Library Collections and Technical Services, Library Administration and Management Association, and Library and Information Technology Association

Award: \$2,000

In addition to these formal ALCTS awards, I had the honor of awarding three ALCTS Presidential Citations at our membership meeting. While each year ALCTS and its sections give several prestigious awards, the ALCTS president, beginning last year with Bill Robnett, also has the special opportunity to give Presidential Citations to recognize important contributions that would not easily fit the criteria used for other standing division and section awards. From many excellent nominations suggested by the ALCTS board of directors, Past-President Bill Robnett, President-Elect Brian Schottlaender, and I selected four outstanding individuals for recognition.

*John Attig*—in recognition of his leadership in the transformation of the communication processes for AACR2 rule revision, thereby enabling the Committee on Cataloging: Description and Access (CC:DA) to focus on content rather than mechanics; for his contributions to cataloging and his dedicated service on CC:DA; and for the example he has set of hard work, generosity, and passion within ALCTS and our professional community.

*Laura Sill and William Sill*—in recognition of their technical and creative work in building a database infrastructure to support the maintenance of the division's Strategic and Tactical Plan. The database facilitates tactical planning initiatives from conception through implementation. It ensures that the ALCTS leadership has access to more precise management information with which to guide the division's business activities.

*Ann Swartzell*—in recognition of her excellent leadership and enthusiasm as chair of the ALCTS Organization and Bylaws Committee, particularly through the discussions and documentation of the proposed bylaws changes involving interest groups. Even with these extensive time commitments to the division, she has contributed greatly to the leadership and programs of the Preservation and Reformatting Section.

I would also like to mention that an extremely valued and contributing ALCTS colleague, *Ross Atkinson*, was recognized as the Academic/Research Librarian of the Year by the Association for College and Research Libraries. Ross had just completed a three-year term as the ALCTS Division Councilor. The award committee chair, Susan Nutter, noted that "Ross Atkinson is arguably the foremost thinker in collection management in libraries today."

### In Memory and Recognition

The ALCTS board of directors also formally recognized three of our ALCTS colleagues through memorial resolutions: Seymour Lubetzky, Marilyn Nordstedt, and Ellen Rappaport. The complete resolutions may be found in ANO.

*Seymour Lubetzky* was an esteemed cataloging theorist, librarian, and teacher. His *Cataloging Rules and Principles* (1953), one of the most influential works in library and information science, was the foundation of the Statement of Principles adopted at the 1961 International Conference on Cataloguing Principles and formed the basis for the Anglo-American Cataloguing Rules. He was an admired and beloved professor at the School of Library Service at the University of California, Los Angeles from 1960 to 1969. In 1955 he received the prestigious Margaret Mann Citation, and in 2002 he received an Honorary Membership, ALA's highest honor that recognizes outstanding contributions of lasting importance to librarians and librarianship (ANO 14, no. 3).

*Marilyn Nordstedt* was an esteemed librarian and valued member of the serials cataloging community. She was an active participant in ALCTS, particularly in the Serials Section. She served as the chair of the Bowker/Ulrich's Serials Librarianship Award Committee and was a member of many ALA sections and divisions (ANO 14, no.2).

*Ellen Rappaport* was a long-standing member of ALCTS and the Serials Section and was nationally recognized in her work with serials and holdings standards. She served as cochair of the NISO Standards Committee AL that developed the standards for holdings statements, served as a member of the Committee to Study Serials Standards, and was a member of many other ALA divisions and sections. She also represented the American Association of Law Libraries as its liaison to the Book and Serial Industry Communication Committee (ANO 14, no. 4).

## Interaction and Information Exchange (Goal #5)

Our strategic plan calls for ALCTS to "create opportunities to interact and exchange information with others in the library and information communities" (*ALCTS Strategic Plan: 2001–2005*). We do this in numerous ways, including providing venues for informal interactions and promoting the use of technology to increase communication between conferences.

### Communications and Information Exchanges Structures

Improving communications is always a critical issue for organizations, no matter how small or large they might be. ALCTS has a membership of more than 5,000 individuals across the United States and from forty-seven countries. Moreover, it has probably the most expansive divisional/sectional committee structure within ALA. As such, a strong and extensive communications program is important for such a vital organization as ALCTS, and a focal point of activity this year was seeking ways to increase our abilities to interact and exchange information.

ALCTS Newsletter Online ([www.ala.org/alcts/alcts\\_news](http://www.ala.org/alcts/alcts_news)) increased its publication pattern from four to six issues a year. ANO provides announcements, columns, short articles, committee meeting and program reports, conference meeting schedules, and so forth. Miriam Palm serves as its superb and steadfast editor.

- Our new ALCTS Web site ([www.ala.org/alcts](http://www.ala.org/alcts)) was substantially changed with a new organization that provides clearer access to an extensive network of documents and information. It includes the *ALCTS*

*Manual*, notices of continuing education opportunities, publications, forms, membership rosters, and pivotal divisional, sectional, and committee governance documents (e.g., current and past agendas and meeting reports and minutes), links to the ALA Web site and other Web sites of interest to ALCTS members. Many thanks to Kirsten Ahlen (ALCTS office) for her creative technical Web work and design.

- All boards, committees, task forces, and other working groups may now use unique electronic discussion lists to assist their members in conducting business, particularly between conferences.
- There are now new membership brochures targeting law librarians and archivists that tell the story of ALCTS and its importance to these focused professional constituencies. New targeted brochures are in the works. The ALCTS board approved the ALA-ALCTS Joint International Membership proposal. Our ALCTS Membership Committee, under the strong leadership of its chair Manuel Urrizola, has been extremely busy this year.
- Also under the coordination of the Membership Committee, we jointly staffed a booth with LAMA at the ALA Annual Conference in Toronto. It was a successful opportunity for attendees to drop by and say hello to their ALCTS colleagues and learn about ALCTS initiatives.

### Publishing Program

Our publishing program, whether through *Library Resources and Technical Services (LRTS)*, the ALCTS Paper Series, Web publishing through ALCTS Publishing, or publishing our scholarship through Scarecrow Press, has made significant progress.

Two search processes were initiated for new editors of *LRTS* and the ALCTS Paper Series. While the search proceeds for the permanent *LRTS* editor, the ALCTS Executive Committee appointed Peggy Johnson, Associate University Librarian at the University of Minnesota and former ALCTS President, as the interim editor through volume 48 of 2004. Edward Swanson is serving as the *LRTS* book review editor during her tenure.

The Publications Committee, under the dynamic leadership of Genevieve Owens, continued its serious review of the publications program. The committee assumed oversight of the Library Materials Index (LMPI) Committee, now a subcommittee, and finalized an ALCTS Web site policy (subsequently approved by the ALCTS board of directors). The ALCTS publications catalog is now available on the ALCTS Web site, the “U.S. Periodicals Price Index and Serials Pricing” will be accessed through the ALCTS

Web site, and *LMPI* will be published via *LRTS*. The result of all this hard work is a revitalized, proactive, and forward-looking ALCTS publication program.

The Publications Committee also reviewed and approved several manuscripts for publication, two of which will be published by Scarecrow Press in its guide series:

- *2001 North American Title Count*.
- *Guide to Licensing and Acquiring Electronic Information*. Collection Management and Development Guide, no. 13. Scarecrow Press.
- *Guide to Out-of-Print Materials*. Acquisitions Guide, no. 12. Scarecrow Press.
- *Research Topics and Essay Suggested Methodology in Cataloging and Classification: A Summary of the Literature, 1995–*. Compiled by the Policy and Research Committee of the ALCTS Cataloging and Classification Section. ALCTS Publishing.

### Institutes, Preconferences, Conference Programs, and Other Educational Opportunities

As mentioned earlier in this report, ALCTS continued its extensive educational and staff development programming through the ALA conference structure and through an innovative Web-based course, *Fundamentals of Acquisitions*. The hardworking Education Committee (chaired by Peggy Johnson) and Program Planning Committee (chaired by Helen Reed) were responsible for guiding the division and sections in the creation of an impressive array of programs, preconferences, workshops, courses, and other continuing education opportunities—all of which fit comfortably in our tactical plan. For the first time, we held a symposium at the Midwinter Meeting, and at the Annual Conference we held a large number of successful preconferences and programs, despite concerns regarding conference attendance.

The Planning Committee is developing a “Program Planning Highlights” for future leadership orientation sessions and is preparing a much-needed survey to be sent to program planners for the 2004 conference. This is a new initiative that is designed to solicit input from program planners on how the process worked, where they ran into problems, and ways to streamline the process. All of this should help all program planners to be successful.

Perhaps the most sweeping governance change for promoting interaction took place when the ALCTS membership approved the ability for ALCTS members to form interest groups. This change ensures that “any group of ten or more individuals with a common interest within the scope of ALCTS may establish a forum to exchange ideas and experiences; sponsor formal conference programs, institutes, and seminars; or prepare publications” (“Procedures



for Establishing an ALCTS Interest Group,” ALCTS Web site).

### **Association Operations (Goal #6)**

Throughout the division, ALCTS governance received substantial attention this past year by developing the role and function of the board of directors, developing a governance mechanism to promote interaction and information exchange (interest groups), and creating a more focused legal definition for division officers. ALCTS is ending the year in good fiscal health and is blessed with an efficient, dedicated, responsive, and far-sighted office staff, under the excellent leadership of our executive director, Charles Wilt.

#### **ALCTS Elections**

Under the able leadership of Carlen Ruschoff as committee chair, the ALCTS Nominating Committee (Myron Chase, William Garrison, Linda Smith Griffin, Debra Hackleman, Karen Schmidt, and Nancy Stanley) identified a superior slate of nominations for ALCTS leadership positions. The ALCTS membership elected Carol Pitts Diedrichs as Vice President/President-Elect, John Duke as Member-at-Large, and Cynthia Clark as the Council for Regional Groups Vice Chair/Chair-Elect.

#### **Board Restructuring and Governance**

The board of directors and executive committee have spent much of the year exploring the future role of the ALCTS board of directors as part of divisional management and as it is articulated in divisional governance policies. The goal of the review was to enhance the board's policy role and lessen its functional management role with an outcome of more facile and agile division management (using the often repeated phrase of ALCTS Past President Bill Robnett).

To these ends, the board of directors approved the following governance changes at its annual meeting in Toronto. Several of them will be submitted for approval by the ALCTS membership with its first electronic vote later this fall:

- Add the chair of Organization and Bylaws Committee to the board of directors, thereby including three key business committee chairs as board members.
- Make the chairs of the Planning, Budget and Finance, and Organization and Bylaws Committees ex-officio, voting board members, thereby increasing the connection between the board and the committees. Nonvoting, ex-officio members would be the ALCTS Newsletter Online editor and the ALCTS executive director.
- At the end of each annual conference board meeting, the ALCTS president will turn the agenda over to the president-elect with all new board members in attendance. This should provide opportunities for the new board to discuss the next meeting agenda and initiate business topics for the forthcoming year.
- Change the officers of the association to be the president, president-elect, and past president. This would add the past president as an officer, thereby ensuring greater continuity for the officers, and streamlining the membership by removing the division councilor, chair of the Council of Regional Groups, and ALCTS executive director as officers.
- Assign board liaison responsibilities to the elected officers and directors-at-large for select divisional business committees. These liaison roles should provide more direct relationships between the board and these committees.

#### **Interest Group Formation and ALCTS Committees**

As mentioned above, the ALCTS membership approved the formation of interest groups (IG) with the spring ballot. The board of directors and the executive committee had begun serious discussions on the viability of adding interest groups as a new governance unit under the previous presidency of Bill Robnett. The interest evolved out of our strong emphasis on programming and our long-standing interest in bringing more people together who are interested in the same topics. Both groups, along with the Organization and Bylaws Committee (O&B), concluded that IGs could efficiently merge the best of the committee structure and the discussion group structure into one entity (i.e., the programmatic and publication functions of committees and the broad open-forum nature of discussion groups). Moreover, IGs could be easily created or dissolved as interests grow and ebb. At the request of the executive committee, O&B (under the enthusiastic and dedicated leadership of Ann Swartzell) prepared enabling language for IGs at the division and section level for the Midwinter Meeting and essential background information for the ALCTS membership. At the board's midwinter meeting, it was agreed to put forward enabling language for divisional and sectional interest groups on the spring ballot. The membership subsequently approved overwhelmingly the creation of interest groups.

At its annual meeting, the board recommended the discontinuation of seven ALCTS committees with the expectation that they would be reconstituted as either discussion groups or interest groups or dissolved permanently: Catalog Form and Function, Commercial Technical Services, Legislation, Media Resources, Networked Resources

and Metadata, Publisher/Vendor–Library Relations, and Research and Statistics. The board plans for these committees to remain constituted through the 2004 Midwinter Meeting with the expectation that the individuals present from each committee (and any others present) would decide whether or not to reconstitute the committee into an interest group or discussion group. The board changed the four ALCTS awards committees into juries (Best of *LRTS* Award, Blackwell's Scholarship Award, Esther Piercy Award, and Paul Banks and Carolyn Harris Preservation Award) and left the remaining ALCTS committees as currently constituted.

### Strategic and Tactical Planning

Strategic and tactical planning has been central to ALCTS for the past several years. The current planning process started under the past leadership of Brian Schottlaender when he chaired the ALCTS Planning Committee. The ALCTS Planning Committee (chaired this year by Laura Sill) worked closely with divisional committees and sections to identify and update tactical initiatives, including programming and education initiatives. The result was a broad-based continuing planning process that involved the entire divisional and sectional governance structure, thereby ensuring its overall success. This year the Strategic and Tactical Planning Database became operational, and it received positive feedback from users. Laura Sill and William Sill built the database infrastructure to support the maintenance of the division's Strategic and Tactical Plan. It facilitates tactical planning initiatives from conception through implementation. The committee is now working to develop qualitative measures for determining successful outcomes of our divisional and sectional initiatives as reflected in our Strategic and Tactical Plan.

### General Financial Condition

The overall financial state of ALCTS remains generally positive for the fiscal year ending on September 30, 2003. Executive Director Charles Wilt and the Budget and Finance Committee (chaired by long-term member Judith Niles) provided strong leadership and foresight for carefully managing the current budget and forecasting the needs for the following fiscal year. We continue to have a healthy reserve for unexpected financial shortfalls—an amazing accomplishment for a division with a recently constituted single-office structure. Given the positive state of the division finances, the Budget and Finance Committee (as part of its annual review of membership-based revenue) did not recommend any increases in the various dues categories.

In brief, the AACR2 and Metadata Institute and fund-raising successes were key reasons why the budget should remain on target this fiscal year. Overall registration rev-

enues were not as high as expected due to cancellation of two key preconferences, Knowledge without Boundaries for the Toronto Annual Conference and an anticipated preconference at the International Federation of Library Associations and Institutions (IFLA) annual conference held in Berlin. Membership and royalty revenues remain stable; however, advertising and subscription revenues remained below expectations. Strong reliance must be placed on an aggressive continuing education program, continued development of preconferences and institutes, a profitable publications program, a reliable increase of our membership base, and a successful fund-raising program.

### Fund-Raising Accomplishments

The Fundraising Committee (ably chaired by Pamela Bluh with Frank D'Andraia, Susan Davis, Harriet Lightman, Ann Sandberg-Fox, Basil Sozansky, and Dale Swensen) garnered outstanding successes in raising support for our midwinter reception, the midwinter symposium, and an extensive array of prestigious sponsors for our annual conference. Our partner sponsors included:

#### *The Business of Acquisitions*

Principal Sponsor: The Library Corporation

Sponsors: Casalini Libri, Majors Scientific Books, and Midwest Library Services

#### *ALCTS Midwinter Symposium*

Sponsors: Springer Verlag New York and Swets Blackwell

#### *ALCTS Membership Reception*

Sponsor: Yankee Book Peddler

#### *AACR2 and Metadata Institute, 2003—Berlin, Germany*

Sponsor: Harrassowitz

#### *ALCTS President's Program for 2003 Annual Conference*

Sponsor: Elsevier Science

Sponsor: HarperCollins (through providing copies of *When Generations Collide* to all program attendees)

#### *ALCTS PARS Film Fest*

Sponsor: Library Binding Institute

#### *ALCTS SS Program: Serials Pig in the Aggregator's Poke III*

Sponsor: Collection Development and Management Interest Group, Canadian Library Association

#### *ALCTS CMDS Program: New Seal of Approval:*

*Print and Electronic Approval Plans in the Twenty-First Century*

Sponsor: Collection Development and Management Interest Group, Canadian Library Association

The board of directors and the Fundraising Committee benefited from a superb workshop on ALCTS sponsorship fund-raising facilitated by Irene Hoffman. The outcomes were a much clearer view of fundraising opportunities and an awareness that all ALCTS members should assist in our sponsorship fund-raising efforts. The committee also drafted a revised list of giving levels and benefits of corporate sponsorship, which was approved by the ALCTS board.

### **ALCTS Office**

The ALCTS office staff have the challenging tasks of scheduling more than three hundred meetings in any given year; supporting one hundred committees, subcommittees, and task forces, thirty-nine discussion groups, and forty-seven electronic discussion lists (20 percent of all ALA-sponsored lists); managing an impressive array of staff development programs (in and out of conference as well as physical and virtual); and supporting the appointment process for all nominating officers and the annual election process. The staff also faced the enormous tasks of completely redesigning the ALCTS Web site (in concert with ALA's redesign) and implementing a new content management system for maintaining the ALCTS Web site. All these activities were accomplished by only four people: Charles Wilt (Executive Director), Julie Reese (Continuing Education and Meetings), Kirsten Ahlen (Publications and Membership), and Andrea Tobias (Administrative Services).

Furthermore, we have a staff that ALA looks to for leadership within the ALA organization. Kirsten Ahlen served on two ALA staff committees: Web Advisory Committee and Membership Marketing Committee. Charles Wilt served on a working group to examine distance learning possibilities (Web-based, audio, and other) for ALA, a working group to rewrite part of the ALA/division operational practices on telecommunications, and a task force to establish criteria for allowing ALA members to participate in electronic meetings. He also organized the ALA-sponsored division leadership program for division presidents-elect.

### **Concluding Remarks**

In conclusion, I am pleased to report that the ALCTS division is operating at full capacity, and it is due to the service of hundreds of talented ALCTS members and an energetic and dedicated office staff. Its accomplishments for 2002/2003 are clearly reflected by this report. The Association for Library Collections and Technical Services has a bright and demanding future ahead of it and a formidable infrastructure (a futuristic and practical planning process, technical know-how and systems, and financial backing) to ensure the continuation of its many challenging activities and strategic programming for an engaged membership and the professional communities it serves.

# Cataloging Electronic Books

Robert Bothmann

*Papers on the cataloging of electronic resources have focused on electronic journals and Internet resources such as Web sites and not on electronic books. Electronic books are nonserial monographic resources accessed with a computer either directly or remotely. Rules and standards for cataloging electronic resources have changed and continue to change. This article discusses the electronic book as a unique manifestation and provides practical instruction on the application of current cataloging rules. The cataloging elements covered are control fields and variable data fields, including classification, uniform titles, title information, edition information, type and extent of the resource, publication and distribution information, physical description, series statements, notes, and subject analysis.*

Cataloging in today's world is focusing more often on access and organization of electronic resources. Among these electronic resources is the electronic book (e-book), a media form that first appeared on the market in the fall of 1998.<sup>1</sup> Marketing to libraries began in 1999, most notably with the appearance of netLibrary as a vendor. As libraries began purchasing e-books, a whole new set of issues arose for libraries such as licensing, purchasing and ownership, and, of course, cataloging.<sup>2</sup> E-books have received a lot of attention in the last few years with regard to the publishing industry, niche markets, and viability as a product.<sup>3</sup> Many papers address cataloging bibliographic resources in electronic format for serials, Web sites, and other Internet resources.<sup>4</sup> A review of the literature has not revealed anything that focuses on the cataloging of electronic books. This paper will examine functional aspects of cataloging an electronic book.

## What Is an Electronic Book?

The first task is deciding if the resource to be cataloged is electronic. Generally, *electronic* is thought of as something stored on magnetic or optical media, such as a floppy diskette, a hard drive, or a CD-ROM, or remote access media stored on a distant server. The Merriam Webster online dictionary defines electronic as "implemented on or by means of a computer."<sup>5</sup> This definition works well for electronic books that are accessed either remotely or on a personal PC or pocket computer and also for those e-books that require an e-book reader device, which in and of itself is a type of computer. The challenge is deciding if the resource is a book. If it acts like a book, reads like a book, and generally "feels" like a book, except that it is electronic, then it probably is a book. In other words, if it fits the definition of a monograph as defined in the *Anglo-American Cataloguing Rules*, 2d ed., 2002 rev. glossary as a nonserial bibliographic resource that is complete or intended to be complete in a finite number of parts, it is a book.<sup>6</sup>

Defining mode of access required for reading the book is also important. There are two modes of access: direct and remote. Direct access may be an electronic file that is saved and stored on a hard drive, a CD-ROM, a floppy

diskette, a personal digital assistant (PDA) (e.g., PalmPilot), a pocket computer, or an e-book reader device. Examples of direct access books are CD-ROMs, which may accompany a print book as an electronic version, and e-books available for purchase from various vendors such as Palm Digital Media (formerly Peanut Press), Barnes and Noble, or amazon.com. These e-books are generally downloaded and saved to a disk drive. The other type of access, which may be more common for many libraries, is remote access. Remote access involves a connection to the Internet and an Internet browser to access the content of an e-book from a local area network (LAN) or a remote server. These types of e-books are offered by netLibrary, National Academy Press, and Project Gutenberg, among others.

### E-Books as Manifestations

AACR2 (1978) was written from a carrier-biased perspective, which worked well before the days of electronic media.<sup>7</sup> Books in print form follow the rules from chapter 2, serials follow chapter 12, cartographic resources follow chapter 3, and so on. The only type of reproduction catalogers had to deal with was the microform and the facsimile. Microform resources have their own set of rules in chapter 11, and the facsimile is handled with a specific note according to the AACR2 (2002) rule 1.11A, in conjunction with the corresponding *Library of Congress Rule Interpretations* (LCRI).<sup>8</sup> Chapter 9 of AACR2 (1998), formerly titled “Computer Files,” was devised to catalog electronic resources that are predominantly databases, software, or some other type of computer program or computer data.<sup>9</sup> While the concept of books, serials, cartographic resources, moving images, and the like in electronic form may have been considered, they did not exist in any significant number by which to construct rules that would accommodate the types of bibliographic resources catalogers now encounter. Times have changed, however, and the rules and standards by which electronic resources are cataloged will be changed, revised, discussed, and changed again over the next several years, as evidenced by the change of the AACR2 (2001) chapter 9 title to “Electronic Resources” and the continuing rule revisions beginning with the 2001 amendments.<sup>10</sup>

As defined by the *Functional Requirements for Bibliographic Records: Final Report* issued by the International Federation of Library Associations and Institutions (IFLA), e-books are manifestations of a work—that is, “the physical embodiment of an expression of a work.”<sup>11</sup> These manifestations may take the form of an electronic facsimile, such as the e-books distributed by netLibrary or many of the books distributed as portable document format (PDF) files, where facsimile means an exact image or copy with the intent to “preserve the look

and feel of the earlier manifestation.”<sup>12</sup> Manifestations also may be reproductions or close imitations that do not seek to preserve the look and feel of earlier manifestations, rather simply to reproduce the content. The Library of Congress defines reproduction as a “manifestation that replicates an item (or a group of items) or another manifestation (e.g., a reprint with no changes) that is intended to function as a substitute,” further noting that the physical characteristics may differ from the original.<sup>13</sup> An excellent example of a reproduction is the HTML versions of print books distributed by the National Academy Press. Each chapter is one HTML document and lacks pagination. Many of these National Academy Press HTML e-books also exist as electronic facsimiles in netLibrary, where the pagination and layout of the original print is preserved.

It is possible to describe an e-book in a catalog record in a variety of ways. One method, which follows the CONSER guidelines in Module 31, is called the multiple version record (also known as the single record approach), in which the electronic form is described on the same record as the print form (but only when the owning institution already holds the print manifestation).<sup>14</sup> A cataloger also may treat the e-book as a facsimile and catalog it as one would a microform following the LCRI 1.11A. Each method provides for different possibilities in management and presentation of e-book resources. However, these methods cannot be used exclusively. Only the treatment of an e-book as a unique manifestation may be employed at any time. In other words, any resource may be described uniquely and independently of its other manifestations. For the purposes of this paper, therefore, e-books and their cataloging guidelines are treated as a unique manifestation. What follows will describe the creation of a unique surrogate record for the resource. Facsimile cataloging and the multiple-version single record approach to cataloging e-books are not treated here.

### Cataloging the E-Book

The cataloging elements described hereafter are presented in the OCLC work form for books for display of MARC21 metadata using the MARC21 conventions for the delimiter (\$) and blank (#) indicators.<sup>15</sup> Description follows the rules in the 2002 revision of AACR2, chapter 9, “Electronic Resources,” and LCRIs for chapter 9. Figures 1–3 give full MARC21 examples for direct access e-books stored on a fixed disk, remote access e-books accessed via the Web, and direct access e-books accessed via a CD-ROM. Each of the twelve elements is described below and followed, when appropriate, by an example.

#### Control Fields

The e-book should be cataloged using the work form for books. That is to say, the record type in the leader is coded “a” for language material. The only other significant field in the 008 control field for books is the “Form of item” character in position 23. This field is coded “s” for electronic. Additionally, catalogers of e-books will need to add the 006 field for computer files/electronic resources. In the 006 control field, the record type is coded “m” to designate the resource as a computer file. The “type of computer file” for e-books will normally be “d,” meaning “document.” This can be thought of as the equivalent of the language material code “a” from the record type in the leader. The type of description code used may be described in textual form later in the 516 field.

```
006 [m d ]
```

Additionally, the 007 electronic resource control field should be added to describe the general material designation (GMD). The category of material code (\$a) for this field is “c.” Code the 007 field as defined in the *MARC 21 Concise Format for Bibliographic Data*, filling in for the specific material designation (\$b), color (\$d), dimension (\$e), and sound (\$f).<sup>16</sup> The remaining codes of the 007 field are specifically for digital images and archival purposes and are not necessary for the e-book.

```
007 c $b z $d b $e n (007 field coded for an e-
book used on a computer or hand-held device.)
```

#### Variable Data Fields: LCCN, ISBN, Classification

Variable fields containing the Library of Congress control number (LCCN), the ISBN, or perhaps a publisher num-

```

Type: a   ELvl: I   Srce: d   Audn:      Ctrl:      Lang: eng
BLvl: m   Form: s   Conf: 0   Biog:      MRec:      Ctry: nyu
Cont:     GPub:    LitF: f   Indx: 0
Desc: a   Ills: b   Fest: 0   DtSt: s   Dates: 2001,  ¶
▶ 1 010   #z 00-51859 ¶
▶ 2 006   [m d ] ¶
▶ 3 007   c #b z #d b #e n ¶
▶ 4 020   0345447131 (e-book) ¶
▶ 5 020   #z 0345434684 (print) ¶
▶ 6 050 04 PS3563.A255 #b S55 ¶
▶ 7 100 1  McCaffrey, Anne. ¶
▶ 8 245 14 The skies of Pern #h [electronic resource] / #c Anne
McCaffrey. ¶
▶ 9 250   1st Palm Digital Media ed. ¶
▶ 10 260  New York : #b Del Rey ; #a Santa Clara, Calif. : #b
[distributed by] Palm Digital Media, #c 2001. ¶
▶ 11 490 1  The dragonriders of Pern ; #v v. 13 ¶
▶ 12 516   Electronic text; file size: 497 kilobytes. ¶
▶ 13 538   System requirements: Palm ebook reader for Windows CE,
PocketPC, Palm OS, Macintosh or Windows operating
systems. ¶
▶ 14 500   Title from title page screen, viewed Mar. 18, 2003. ¶
▶ 15 500   Ed. and series statements from distributors Web site,
viewed Mar. 18, 2003. ¶
▶ 16 530   Also available in print. ¶
▶ 17 500   Maps on lining papers. ¶
▶ 18 650 0  Pern (Imaginary place) #v Fiction. ¶
▶ 19 650 0  Life on other planets #v Fiction. ¶
▶ 20 650 0  Space colonies #v Fiction. ¶
▶ 21 650 0  Dragons #v Fiction. ¶
▶ 22 655 7  Science fiction. #2 gsafd ¶
▶ 23 655 0  Electronic books. ¶
▶ 24 776 0  McCaffrey, Anne. #t Skies of Pern. #b 1st ed. #d New
York : Del Rey, 2001. #h viii, 434 p. : maps ; 24 cm.
#w (DLC) 00-51859 #z 0345434684 ¶
▶ 25 800 1  McCaffrey, Anne. #t Dragonriders of Pern ; #v v. 13. ¶

```

Figure 1. Example of direct access e-book stored on a fixed disk

ber are familiar, standard data common in monographic catalog records. Often e-books will contain the LCCN and the ISBN assigned to the print version of a resource. This information can be found most often in Cataloging in Publication (CIP) data on the screens following the title page screen. These screens may be considered the electronic version of the title page verso. Additionally, the ISBN for the e-book version of the resource, if one exists, may commonly be found either before the title page screen or after the CIP information. All of this information is valid on a record for an e-book as well, with a minor adjustment. In the 010 field for the LCCN, the cataloger should input the number, but code it with a subfield \$z to indicate that the number is invalid for the form of the item. Catalogers also should code the ISBN for the print resource with a subfield \$z, but code the e-book ISBN using the subfield \$a.

```

▶ Type: a   ELvl: I   Srce: d   Audn:      Ctrl:      Lang: eng
  BLvl: m   Form: s   Conf: 0   Biog:      MRec:      Ctry: pau
          Cont: b   GPub:      LitF: 0   Indx: 1
  Desc: a   Ills:      Fest: 0   DtSt: s   Dates: 2001,
▶ 1 006    [m      d      ]
▶ 2 007    c #b r #d c #e z #f u
▶ 3 050 4   RT51
▶ 5 245 04  The Lippincott manual of nursing practice #h [electronic
          resource].
▶ 5 246 3   Nursing practice
▶ 6 250     7th ed.
▶ 7 260     Philadelphia, Penn. : #b Lippincott ; #a New York : #b
          Ovid Technologies [distributor], #c c2001.
▶ 8 516     Electronic text.
▶ 9 538     Mode of access: World Wide Web.
▶ 10 500    Title from Books@Ovid opening page, viewed Nov. 12, 2002.
          ¶
▶ 11 500    Ed. statement from preface.
▶ 12 500    Sandra M. Nettina [editor].--Preface.
▶ 13 500    Electronic text contains search engine.
▶ 14 530    Also available in print.
▶ 15 506    Access restricted to subscribers.
▶ 16 504    Includes bibliographical references and index.
▶ 17 650 0   Nursing #v Handbooks, manuals, etc.
▶ 18 655 0   Electronic books.
▶ 19 700 1   Nettina, Sandra M.
▶ 20 856 40 #u http://gateway.ovid.com/autologin.html #z Select
          "Books@Ovid" from the menu and select the title from the
          list.

```

### Variable Data Fields of Note for Description of E-books

The variable data fields used for cataloging print bibliographic resources are also used for the description of electronic bibliographic resources, following the rules for description prescribed in chapters 1 and 2 of AACR2 (2002). This paper assumes basic familiarity with these rules and a basic knowledge of monographic cataloging. The discussion hereafter focuses on the application of the specific rules defined in chapter 9 for the description of electronic resources as they apply to e-books.

### Uniform Titles

Electronic books are not electronic serials. Catalogers should not create a uniform title merely because the electronic book has a print counter-

part. This is done in serials cataloging to differentiate various editions, manifestations, and publications when a title conflict occurs. This is not the case for monographic cataloging. Catalogers should refer to AACR2 (2002), chapter 25, "Uniform Titles," for more explanation on the use of uniform titles. For monographic cataloging, uniform titles for paperback editions, updated or numbered editions, or any other kind of difference are not created when the monograph in hand has the same title as another monograph, since these differences are reflected in other areas such as edition statements and publication dates. Catalogers should follow the rules in AACR2 (2002) chapter 23 for creating uniform titles when they are needed, as when a monograph is a translation or is better known by a different name, for instance, a book published under one title and republished under a different title. The National Authority File should be used to determine if a uniform title heading already exists. Catalogers should not create a uniform title for an electronic book by qualifying it with (Online) or similar terms.

**Figure 2.** Example of remote access e-book accessed via the World Wide Web

```

LCCN for print:    010 ## $z 0051859
e-book ISBN:      020 ## $a 0345447131
print ISBN:       020 ## $z 0345434684

```

Classification may be handled in different ways and should be based upon the subject analysis of the resource as it would be for any other kind of bibliographic resource. If the library has direct access materials that will be shelved using Dewey or LC classification, then catalogers may assign a call number. If the resource is remote, a call number is not necessary for location because this function is achieved with the uniform resource identifier (URI). However, a class number may be desired for other purposes, such as virtual browsing or collection development and management. Some institutions are organizing electronic resources on Web sites by various classification schemes. Examples of such sites are listed on the Web site Beyond Bookmarks: Schemes for Organizing the Web, maintained by Gerry McKiernan, Science and Technology Librarian at Iowa State University.<sup>17</sup>

### Title Information

As with any other bibliographic resource, the title must be transcribed from the chief source of information or appropriate surrogate when the chief source is lacking. For electronic resources of any kind, the chief source of information as defined in AACR2 (2002) rule 9.0B1 is the resource itself, meaning any information presented formally from a variety of different sources, such as the title screen, the "about" or "readme" file, menu screens, and metadata tags. Additionally, information provided by the publisher, creator, or distributor may be used when the information is not available from the chief source. This may include descriptive information, which is specific to the electronic resource, from the publisher's or distributor's Web site. Catalogers should supply the GMD in square brackets directly following the title proper. The approved GMD for e-books under AACR2 (2002) rule 1.1C1 list 2 is: [electronic resource]. Citing the specific source of information used for the title of the electronic resource in a note field is mandatory. The OnLine Audiovisual Catalogers, Inc. Cataloging Policy Committee's *Source of Title Note for Internet Resources* provides useful examples when the source term to cite is in doubt.<sup>18</sup>

245 14 \$a The skies of Pern \$h [electronic resource] / \$c Anne McCaffrey.

500 ## \$a Title from title page screen.

```

▶ Type: a   ELvl: I   Srce: d   Audn:      Ctrl:      Lang: eng
  BLvl: m   Form: s   Conf: 0   Biog:      MRec:      Ctry: mau
           Cont:      GPub:      LitF: 0   Indx: 0
  Desc: a   Ills:      Fest: 0   DtSt: s   Dates: 2001,  ¶
▶ 1 006    [m      d      ] ¶
▶ 2 007    c #b o #d c #e g #f a ¶
▶ 3 020    0072445203 ¶
▶ 4 050 4   T57.6 #b .H53 ¶
▶ 5 100 1   Hillier, Frederick S. ¶
▶ 6 245 10  Introduction to operations research #h [electronic
  resource] : #b interactive etext / #c Frederick S.
  Hillier, Gerald J. Lieberman ; cases developed by Karl
  Schmedders and Molly Stephens ; tutorial software
  developed by Mark Hillier and Michael O'Sullivan. ¶
▶ 7 250    7th ed., release 2.0. ¶
▶ 8 260    Boston : #b McGraw-Hill, #c c2001. ¶
▶ 9 300    1 CD-ROM : #b sd., col. ; #c 4 3/4 in. ¶
▶ 10 516   Electronic text of the print version which includes
  movie and sound clips, hypertext links, additional
  resources not included in the print, and makes use of
  spreadsheets and modeling software. ¶
▶ 11 538   System requirements: Pentium 133MHz or better; 32 MB
  Ram; Windows 95/98/NT; Soundblaster audiocard, CD-ROM
  drive, 640 x 480 x 256 color monitor; Acrobat 4.0, Quick
  Time 4.0 (both included on disc), Internet browser
  (Netscape 3.0 or Internet Explorer 3.0), Microsoft
  Excel, MPL Modeling System (included on disc). ¶
▶ 12 538   System requirements for Macintosh: PowerMac compatible
  (only the Excel files and OR Tutor will run on a
  Macintosh.) ¶
▶ 13 500   Title from "e-Text Main Menu" screen. ¶
▶ 14 500   Includes indexes. ¶
▶ 15 500   Distributed with print version of: Introduction to
  operations research. ¶
▶ 16 530   Also available in print. ¶
▶ 17 650 0  Operations research. ¶
▶ 18 655 0  Electronic books. ¶
▶ 19 700 1  Lieberman, Gerald J. ¶
▶ 20 700 1  Schmedders, Karl. ¶
▶ 21 700 1  Stephens, Molly. ¶
▶ 22 700 1  Hillier, Mark S. ¶
▶ 23 700 1  O'Sullivan, M. #q (Michael) ¶
▶ 24 776 0  #7 plam #a Hillier, Frederick S. #t Introduction to
  operations research. #b 7th ed. #z 0072321695 #w
  (DLC) 00025683 #w (OCoLC)43555349 ¶

```

Figure 3. Example of direct access e-book accessible via a CD-ROM

### Edition Information

Information about available edition statements should be stated in the 250 field as would be done for any other bibliographic resource. If the edition statement is taken from a source other than that of the title information, it is mandatory to cite the source of the edition statement in a note field.



250 ## \$a 1st Palm Digital ebook ed.

500 ## \$a Ed. statement from distributor's Web site.

### Type and Extent of Resource

Information about the type and extent of the electronic resource is given in the 256 field. The LCRI for rule 9.3B1 instructs catalogers performing original cataloging of an electronic resource to omit the type and extent of the resource altogether. However, institutions choosing to use this description area in the 256 field should use the term "electronic data" and provide any file characteristics that are readily available. Alternatively, one may record the information in a note following rule 9.7B8. In such a case, catalogers may use the 516 field. For e-books that may be downloaded, especially onto a pocket computer or PDA device for which file space may be limited, file size is especially useful information and should be recorded, if available. File characteristic information in the 256 field must be given in parentheses, separating records and bytes or file size by a colon. The 516 field does not have a prescribed format, so catalogers may use a free text note.

256 ## \$a Electronic data (1 file : 498 kilobytes)

516 ## \$a Electronic text; file size: 498 kilobytes.

### Publication, Distribution, Etc.

One explicit change to the revised chapter 9 rules is to consider all remote electronic resources as published. This is not important for commercially available e-books, but is very important for e-books produced by individuals and freely distributed over the Internet, such as HTML documents that could be considered e-books. The cataloger should be aware of rule 9.4F4, which instructs one to use the latest available copyright date when multiple copyright dates are presented on the resource. Furthermore, LCRI 9.4D1 instructs the cataloger to apply the optional provision of AACR2 (2002) rule 9.4D1, which is to give the name of the distributor. Qualify the distributor name using square brackets with either "[distributed by]" preceding the name or "[distributor]" following the name.

260 ## \$a New York : \$b Del Rey ; \$b [distributed by] Peanut Press, \$c 2001.

260 ## \$a Philadelphia : \$b Lippincott Williams & Wilkins ; \$a New York : \$b Ovid Technologies [distributor], \$c 2003.

### Physical Description

The physical description of an electronic resource will vary depending upon the type of resource at hand. For all electronic resources accessible remotely, omit a physical description. For electronic resources available on direct access media, give the number of physical units and the specific material designation (SMD). A new option for the physical description is the use of conventional terminology for the SMD. Catalogers may now use terms such as CD-ROM, Photo CD, or DVD. The revised LCRI for this rule, 9.5B1, instructs that the optional provision be applied to original cataloging. The cataloger also should give information about color or sound, if present. Finally, the amended rule for dimensions allows for the option of recording dimensions of media using metric units, which brings the physical description more in line with almost every other type of format description. However, LCRI 9.5D1 states that this option should not be applied, so the cataloger should continue to use imperial units for dimensions of direct access media.

300 ## \$a 1 CD-ROM : \$b sd., col. ; \$c 4 ¾ in.

### Series Statements

The rules for the transcription of series statements are not different for electronic resources. However, publisher information is allowed as a prescribed source of information for series statement information. This means that a series statement found on a publisher's or distributor's Web site, which does not appear in the resource itself or its container or other accompanying information, is valid for use in the record. Instances of this type of occurrence should be rare, and use should be judicious, especially if a Web site is used as the source of information. If the cataloger feels that recording the series information will be necessary or helpful in the description of the resource, he or she should record the series information along with its source and the date viewed in a note field just to be circumspect.

490 1# \$a The dragonriders of Pern ; \$v v. 13

500 ## \$a Series statement from distributor's Web site (viewed April 27, 2001).

800 1# \$a McCaffrey, Anne. \$t Dragonriders of Pern ; \$v v. 13.

### Notes for E-Books

Several notes are necessary for a full description of the e-book. These notes are presented in the order prescribed in AACR2 (2002). The nature and scope note is given in

a 516 field as the first note on the record. This note is not mandatory and may be repetitive of other information already given in the record. However, if viewed as necessary, the note may be presented in a straightforward manner. The text used for a nature and scope note is not prescribed, but it may be formed according to the same prescription given in the Type and Extent of Resource section earlier in this paper.

516 ## \$a Electronic text; file size: 498 kilobytes.

Notes about system requirements are, however, mandatory and must be included in the description of every full-level electronic resource record. For remote access resources, the mode of access must be described. For direct access resources, catalogers should give any specific hardware or software requirements that are readily available and identifiable.

538 ## \$a Mode of access: World Wide Web.

538 ## \$a System requirements: Palm ebook reader for Windows CE or Palm OS.

538 ## \$a System requirements: Internet browser.

Again, the source of the title proper and the edition statement, if it differs from the source of title information, always must be recorded and given as separate notes. If title or edition statement information is taken from a source (generally a Web site) that may change in the future, catalogers should provide the date on which the information was viewed.

500 ## \$a Title from HTML header on publisher's Web site (viewed July 16, 2000).

500 ## \$a Title from title page screen.

500 ## \$a Ed. statement from container.

500 ## \$a Ed. statement from publisher's Web site.

If the resource is available in another format, catalogers may state the format type in which the resource is available in a 530 field. For records submitted to national utilities, this note is particularly useful, but it is not necessary for local catalogs. An appropriate local practice also helpful to the patron is to use this note only when differing formats of the resource are owned.

530 ## \$a Also available in print.

### Subject Analysis

For all e-books, catalogers should assign subject headings based on the content of the resource. Catalogers should *not* use the free-floating form subdivisions Databases or Software. These terms are very specific and should only be used for true databases or software applications. Examples where these subdivisions are appropriate are the *Bibliography of the History of Art*, which is a database, or Microsoft Office 2000, which is software.

In addition to subject analysis, institutions may wish to bring out the form of the item by applying a form/genre term. These terms may be useful for post-coordinate searches or as hooks for types of electronic resources. The most common form/genre term in use for e-books is "Electronic books," which is borrowed from the Library of Congress Subject Headings (LCSH). The *MARC21 2002 Concise Edition* now requires that the 655 field second indicators parallel those of the other subject tags.<sup>19</sup> That is, if an LCSH term is used, code the second indicator as 0 (zero). When an appropriate form/genre term is not available in various thesauri, it is acceptable to create locally defined terms. In these cases, term sources must be cited in subfield \$2, and locally defined terms are cited as "\$2 local." Catalogers should take care to manage locally defined terms with an authority control system, and terms should not be created unnecessarily.

655 #0 \$a Electronic books.

655 #7 \$a Interactive textbooks. \$2 local

### Conclusion

Cataloging an e-book requires few extra steps beyond those required for a print book. Catalogers should remember to make good use of the tools at their disposal, specifically chapters 1, 2, and 9 of *AACR2* (2002), the appropriate *Library of Congress Rule Interpretations*, the *MARC21 Format for Bibliographic Data*, and, of course, other catalogers. The key points to remember when cataloging an e-book are:

- Cite the source of title and source of the edition statement if it differs from the source of title.
- State the mode of access or system requirements necessary for operation.
- Add the extra codes required for the electronic nature of the e-book.

Catalogers should also remember to make every effort to keep up-to-date with the current revisions of the various rules and standards. Consistent adherence to current rules and

standards to ensure uniform description of resources is very important. Following these steps provides a clearer description of the resource being cataloged, aids other catalogers in identifying the same resource, and provides the necessary information required for patrons to locate and use e-books.

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# Paper to PDF

## Making License Agreements Accessible through the OPAC

Marie R. Kennedy, Michele J. Crump, and Douglas Kiker

*In search of a cohesive tool for managing license agreements, the University of Florida Libraries has devised an in-house project. This paper tracks development of the project from its theoretical inception, which began in 1997. The project was intended to be an all-encompassing database that allowed tracking of license agreements from the time they were received in the Serials Acquisitions Unit to their final signature. The discussion follows the progress of the database development and details the current portable document format (PDF) project in place, which uses scanned license agreements linked to the OPAC (online public access catalog) title record for ease of access and tracking by libraries staff.*

The University of Florida Libraries, like other academic research libraries, strives to organize the selection, acquisition, and cataloging processes of the electronic resources it purchases with an ever-increasing portion of its materials budget. The libraries want to provide easy and reliable access for patrons and, at the same time, remain in compliance with the license agreements that accompany these resources. Creating a storage site for the organization and management of the licenses became a necessity as the University of Florida gained more electronic resources. In this article, the authors will share briefly the University of Florida Libraries' successes and failures in developing and maintaining a workable database for management of purchased electronic resources and their license agreements.

The database idea and design underwent revisions over the years as staff changes and reorganizations occurred. Commitment to completing the database waned as other library projects took precedence. Still, the desire to make the license agreements readily available to collection managers and acquisitions staff demanded attention, which inspired the Serials Acquisitions Unit's licensing agreement scanning project discussed in detail here. This scanning project links the license agreement directly to the title or publisher package through URLs located on the bibliographic record in the OPAC. The URL connects staff to a PDF copy of the license agreement and offers them immediate access to the executed license agreements they have a role in managing.

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### Review of the Literature

In recent years, the Massachusetts Institute of Technology (MIT) Libraries have been at the forefront of database design for license agreement tracking with the creation of Virtual Electronic Resource Access (VERA). The system was developed in-house using FileMaker Pro and serves a range of functions related to the acquisition and maintenance of information regarding the libraries' electronic

resources. Ellen Finnie Duranceau has described some of the stages and tools that preceded VERA.<sup>1</sup> During earlier years, an array of informative yet cumbersome lists and tables were used to house information regarding new electronic products. The burden for staff in maintaining the tools spawned the homegrown initiative at MIT to centralize and streamline the processing and reorganization. With VERA, MIT created a Web-based system that acts specifically as a single management tool for public display, proxy management, and license tracking of digital resources.

Gale Teaster's report on Emery and Ramirez's presentation "Tackling the Monolith" at the North American Serials Interest Group (NASIG) 2001 conference details many of the problems that arise with license agreement management in libraries.<sup>2</sup> From their experience at the University of Texas, Arlington, Emery, and Ramirez underscore the importance of making license information available to staff and librarians outside the acquisitions unit since many other departments also require access at times for purposes of renewal or possible renegotiating. The University of Texas, Arlington database, which includes with scanned PDF images of the license agreements, also allows for multiple simultaneous users as well as 24/7 access.

Susan Gardner cites an informal survey collected during 2000 in which correspondents on two electronic discussion lists, AcqNet-L and COLLDEV-L, reported that a range of departmental staff were involved in license negotiation; 36 percent reported acquisition unit involvement, 29 percent reported library director involvement, 21 percent reported collection development involvement, 17 percent reported assistant director involvement, and 15 percent reported systems involvement.<sup>3</sup> As part of her project for a master's degree in library science, Gardner published "The Impact of Electronic Journals on Library Staff at ARL Member Institutions: A Survey." Question 12 of her survey asks who negotiates license agreements for e-journals. The results confirm her earlier findings: 35 percent reported acquisitions unit involvement, 32 percent reported administrator involvement, 32 percent reported collection development involvement, 24 percent reported electronic resource involvement, 21 percent reported consortia involvement, 18 percent reported serials involvement, 6 percent reported reference, and 3 percent reported systems involvement, and thus require access to the licenses themselves.<sup>4</sup>

Carol Hansen Montgomery and JoAnne L. Sparks of Drexel University describe the overall impact of migrating to an electronic journal collection in "Transition to an Electronic Journal Collection: Managing the Organizational Changes."<sup>5</sup> Just as most libraries have discovered, Drexel's technical services staff has experienced the increased workload that accompanies the shift to purchasing electronic resources. In addition to being more volatile and changing than a print collection, the database maintenance and cata-

logging for digital resources requires a higher level of skill. This necessitates devoting more time and effort to retraining current staff to make sure the information is accurate and accessible.

Patricia A. Loghry and Amy W. Shannon provide a description in their paper, "Managing Selection and Implementation of Electronic Products: One Tiny Step in Organization, One Giant Step for the University of Nevada, Reno," of the methods used at the University of Nevada, Reno, for determining how to best track information regarding the library's selection and acquisition process for electronic products.<sup>6</sup> The library examined its own internal work flow and performed an evaluation of what would be necessary to streamline as well as manage the many steps, which are dispersed among many departments. Two separate forms are now used to first document the selection and purchase and then track the steps toward approval and eventual accessibility to users. The Loghry and Shannon report is an insightful look at a successful method of envisioning, organizing, and implementing the changes to work flow that are often continual for library acquisitions.

### **University of Florida's Database Design and Development**

The University of Florida Libraries have been spending over half their materials budget on serials publications for the last ten years. During the last five years, the Libraries have watched the electronic resources title numbers multiply and observed the steady climb in expenditures from 8 to 20 percent of the total materials budget for this category of collections. With the continual increase in the acquisitions of electronic resources, the Libraries have recognized the need for systematically tracking order requests, orders, publisher arrangements, and license agreements outside NOTIS, the University of Florida Libraries integrated library system.

In June 1997, the head of the Serials Cataloging Unit and an industrial engineering graduate student set out to design and create a Web-based database that would support management of purchased electronic resources at the University of Florida Libraries. Using Delphi software for the Web interface and Microsoft SQL Server for the database structure, the developers outlined a design for a database that would be a single source for tracking the order, negotiating the license agreement, and purchasing an electronic resource. The idea was to create an interactive system that would be accessible from the Web for inputting and reviewing data by directors, acquisitions, collection management, and cataloging staff. Like MIT's development experience, the designers discovered that the project's demands offered "limited return in terms of improved

work flows and management information.”<sup>7</sup> In the end, the libraries’ Systems Department assumed responsibility for the development plans and completed work on the inventory application of the database.

The Systems Department has had to compartmentalize the project and focus on only one section of its development—the inventory section that the Serials Acquisitions Unit uses. The database consists of two interconnected applications: the first application houses an inventory portion and the second application serves as a requesting portion (for purchase and handling). The requesting portion involves building tables to store applications for different library departments that eventually would have access to view or input information. It is this second application of the database project that requires development commitment in order to complete the full Web version as initially designed.

Serials Acquisitions Unit staff continue to use the inventory portion of the database to manage purchases of electronic resources with license agreements. Systems Department staff make changes to this Microsoft SQL server database when it is determined that upgrades would improve the database functionality. In the database, Serials Acquisitions Unit staff input resource title or publisher package title of purchases, dates of licensing agreement signature, renewal periods, and dates that current IP addresses were sent to the providers. The database functions as a warehouse for this type of information. Currently the database resides on the PC desktops of only a few library staff members, which restricts access to the information centralized there. The actual license agreements are maintained in paper files that reside in the director of collections’ office or in the Serials Acquisitions Unit’s duplicate file.

### Serials Acquisitions Paper File

Until a program is built that enables license agreement transactions to be electronic, the Libraries are required to maintain a paper file of the legal documents related to an electronic resource. This paper file documents the history of the Libraries’ relationship with the vendor or publisher and outlines usage parameters of the agreement. The Serials Acquisitions Unit houses a copy of the original license agreement, which is archived in the office of the director of collections. Serials Acquisitions Unit staff organize the license agreement files alphabetically by title of the resource or name of the publisher package, creating cover sheets placed at the front of the packet for quick viewing of essential information. As seen in figure 1, the cover sheet has a simple design with check boxes that are filled in to enable quick review of the file contents, such as license agreement requirements; director’s approval and vendor signature history; cost; payment fund; covered by “cost”; and IP address requirements.

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Filed under:   
 LUIS#:

LICENSE AGREEMENT CHECKLIST

LICENSE AGREEMENT IS REQUIRED

Sent to Deputy Director for signature; date: \_\_\_\_\_

Received signed copy from Deputy Director, filed here; date: \_\_\_\_\_

Received signed copy from Vendor, filed here; date: \_\_\_\_\_

LICENSE AGREEMENT IS NOT NECESSARY

FREE ACCESS

With print subscription

PAID ACCESS

Amount \_\_\_\_\_

Fund \_\_\_\_\_

Fiscal year \_\_\_\_\_

IP ADDRESSES NECESSARY

Date last sent \_\_\_\_\_

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Figure 1. Paper file cover sheet

### Scanning Project Development

Because the licenses are housed in files in two different offices, effortless access to these important documents has not been possible for the collection managers initiating license agreement negotiations. The archivist in the Serials Acquisitions Unit has taken a proactive approach with a proposal to open the files to collection managers by offering them copies of licensing agreements outside the realm of paper files. She implemented a project to scan the contents of license agreement folders into PDF files and then provide access to those files through links input in 599 MARC tags within the NOTIS bibliographic records for the electronic resource titles. With these links to the scanned documents, collection managers now can access license agreements through the OPAC for titles that they procure. The scanned files include current and historic license agreements, correspondence with service representatives, names and valuable contact information, and current title lists of publisher packages.

### Scanning Process and PDF File Creation

Starting with the cover sheet, Serials Acquisitions Unit staff scan the contents of a license file folder chronologically, from most recently received to oldest received, presently using a UMAX Astra 2000 flatbed scanner and Adobe Acrobat 5.0 software. Adjustments are made to accom-

moderate print format variety, such as faxed, handwritten, or small-type documents. After all the pages in the packet have been scanned, staff sets “document properties” options to simplify accessing specific pages in the files from the Web server. Bookmarks are created, as in figure 2, when the file is large and requires viewing discreet sections of information. Thumbnails are selected when the entire file contains just a few pages.

Once the scanning process is complete and the PDF is saved in the appropriate folder on the hard drive, staff upload the file from the hard drive to the established Web folder. They then notify the office of the director of collections. The office compares the PDF version of the license documents to those in its files and alerts the Serials Acquisitions Unit to discrepancies between the two files. The two groups work together to maintain the integrity of both the official paper files and the PDF copy of those files. The original paper file serves as the archival copy and remains in the office of the director of collections, as legally defined. Good communication between these two offices remains key to keeping the license agreement files held in each office current and accurate.

### Providing Access through URLs

Serials Acquisitions Unit staff then link the PDF file to the NOTIS record by locating the title in NOTIS and updating the notations regarding the license agreement location. The annotation for the paper file is changed to reflect the current location. Thus, “SEE BIB FOR LICENSE INFO” is entered in a note field in the order record and in the copy notes line, as shown in figures 3 and 4. Staff add the 599 MARC field to the bibliographic record, using the format “599::license found at (insert URL).” Because the PDF files are housed in a Web folder, the URL will follow the structure of the published Libraries’ Web page, as traced in figure 5.

Many of the electronic resources purchased are bundled in publisher packages, and these packages do not require a full bibliographic record in NOTIS. Serials Acquisitions Unit staff catalog the publisher packages using 9XX field tags. Staff then create URLs in a 945 field—the equivalent of a 599 in a fully cataloged record—to these bibliographic records. Bibliographic records created with the 9XX field tags are suppressed from public view in the OPAC. Serials Acquisitions Unit staff build order records on these records for acquiring and payment posting purposes; see the Springer link record illustrated in figure 6.

The libraries chose to use the 599 MARC field after discussion about where on the record the license information should be housed. Entering the information on the order record was first considered, because the Serials Acquisitions Unit staff already annotated that part of the

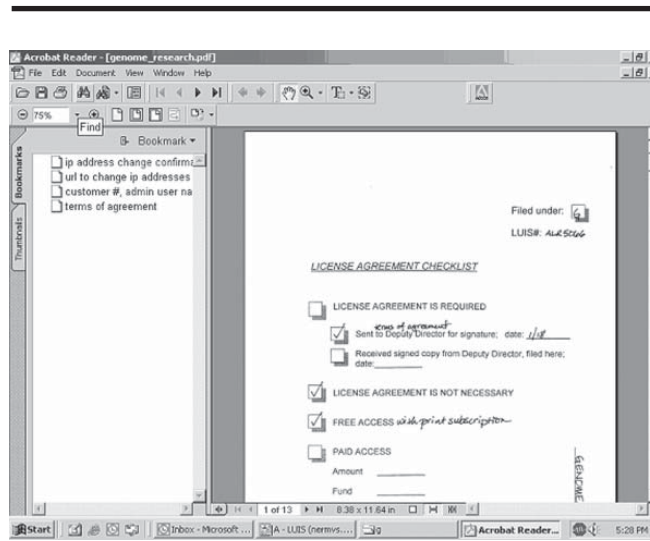


Figure 2. PDF bookmarks

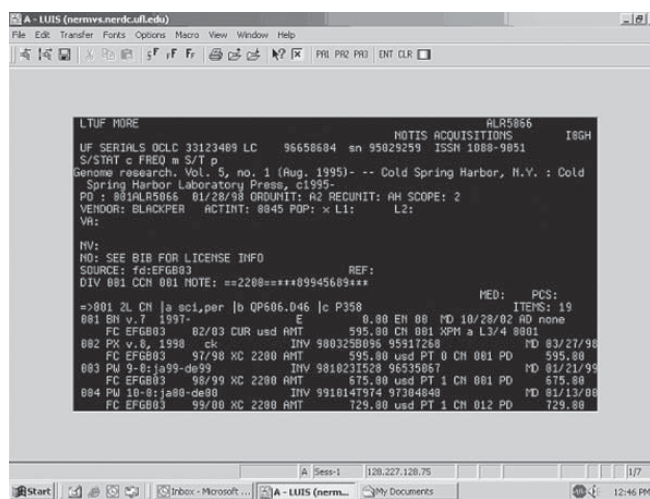


Figure 3. NOTIS order record

record with information about the location of license agreements in paper form. However, entering the URL link on the bibliographic record made it more readily available to staff outside technical services who usually search for title information in the public mode of the terminal emulation format of NOTIS. Also, the 5XX MARC field range is specifically designed for local notes. As such, the Libraries use the 599 MARC field traditionally for recording local information that should not display in the OPAC but could be viewed by Libraries staff. In addition, only staff who have security clearance would be able to alter the field, and, specifically in this case, only serials

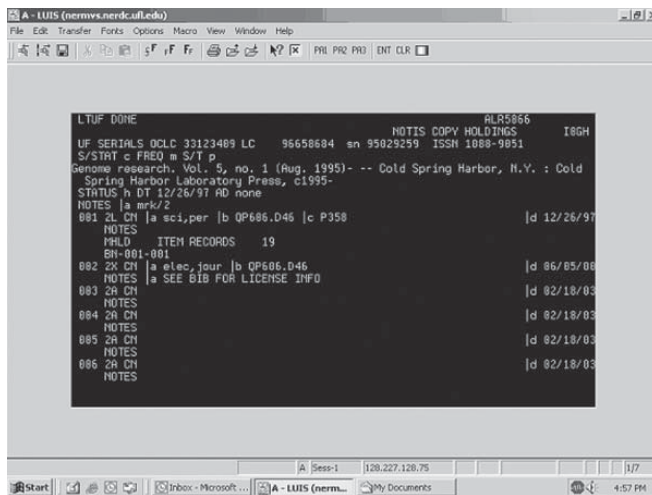


Figure 4. NOTIS copy holdings

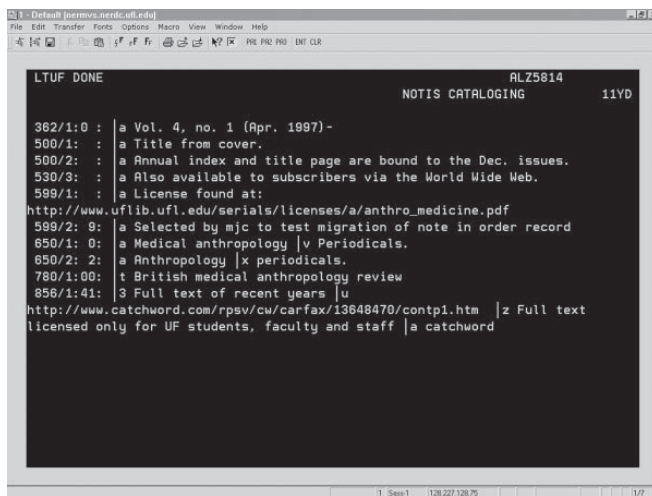


Figure 5. URLs example in 599 field

catalogers would be making changes to the records.

The Libraries' OPAC Web interface, unlike the terminal emulation format of NOTIS, provides patrons with the option to view title records in full MARC format, which includes the 599 field—a security issue that had not been determined when planning for the URL link. Fortunately, most patrons view only the brief record in the Web version of the University of Florida's OPAC, which is not in MARC format and does not display 599 fields. The Libraries will evaluate this security concern and take into consideration display options as the migration to a new library management system occurs during 2003.

### Additional Access on the Web Server

Because of the quantity of current files and needed room for certain growth, the Systems Department was consulted at the inception of the scanning project to ensure server space. The PDF files are large in size because they contain images and text; they therefore require an ample volume of storage space. The University of Florida Libraries currently has 266 files stored on the server, at a total size of 1.6 GB. The sizes of the files range from 136K to 25MB.

Storing the PDF files of license agreements on the Libraries' Web server offers an additional access option that was not considered or realized as a possibility when developing the project. Collection managers as well as other library staff may browse files on the server as if they were browsing a paper file. The "license" folder on the server contains files for each letter of the alphabet. Each PDF created is filed in the appropriate folder, according to the title of the publication or publisher package. For example, *Genome Review*, as shown in figure 7, is filed in the "G" folder.

### Conclusion

With the links to the scanned information, Serials Acquisitions Unit staff offer directors and collection managers easy access to licensing agreement information by way of links to PDF files produced from scanning historic and current publisher-provided information. The Libraries understand that simply moving paper to PDF does not resolve all the management issues concerning license agreements for electronic resources. As the libraries continue to use this work flow for storage, discussion is underway to store only current correspondence, license agreements, and IP addresses in the PDF files. Limiting the material stored in the PDF to current information would decrease the size of the files and the amount of material the user has to search through when making renewal decisions or resolving problems.

In the near future, the Libraries will investigate the benefits of making the inventory database accessible through the Libraries' Web server as has been done successfully with the PDF files of license agreements. At the same time, the libraries will consider the success of University of Texas at Arlington's project and look into copying the complete PDF files into the inventory database.<sup>8</sup> This would create an archival site for the license agreements and all other acquisitions information now housed in the PDF files, limiting the information in the OPAC-linked PDF files to the most current executed license agreement and provider contact information. This action would move the Libraries closer to the single source concept laid out in the database plan. In addition, collection managers would have access to additional acquisitions information, currently available only to



the few who have the database located on their PC desktops. By providing three points of access to the licensing agreement material—through the individual title or publisher package title on the OPAC, through the PDF file folders, and through the inventory database on the server—collection managers will have access to essential tools for monitoring renewal time lines and upgrade installations from the publisher.

As noted earlier, the University of Florida Libraries is in the process of migrating from NOTIS to a more flexible library management system, Aleph of ExLibris. Migrating the active URL links to the Aleph bibliographic records is planned so that accessibility continues. The Libraries hope to resolve any security issues about patron access to the license agreements and other file information before implementation of the library management system is complete. The migration experience offers the Libraries the opportunity to streamline work flow and re-examine the need for a single interactive database. With improved searching, reporting, and security functions in Aleph, added functionality, which might open the door to other possibilities, is expected.

The literature reviewed for this paper reports that other research libraries have successfully developed and implemented databases for managing electronic resource purchases and, in particular, tracking license agreements. Because the Libraries have to consider an ongoing commitment to time and file maintenance before undertaking further system or database development, other institutions' work on designing an integrated Web-based management system for electronic resources will be beneficial. The Libraries, when ready, will have a better understanding of the kind of management structure they need to develop for effective prolonged acquisition of electronic resources and will be ready to take advantage of database projects that are available through "an open source software product for other libraries to customize and use."<sup>9</sup> Meanwhile, the scanning project described in this paper offers a unique way to access executed license agreements through the OPAC with URLs located on bibliographic records. As an essential management tool, this scanning of licenses and supporting documents will remain in place until, and perhaps even after, the University of Florida Libraries realizes its dream database for managing electronic resources.

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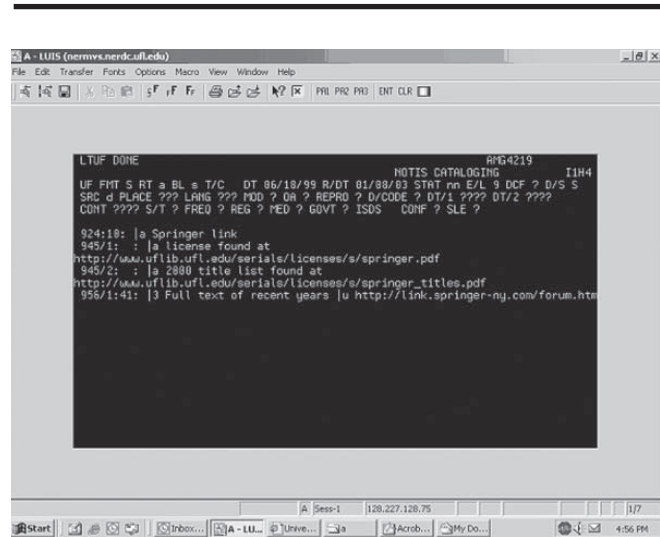


Figure 6. 9XX record with link to license agreement

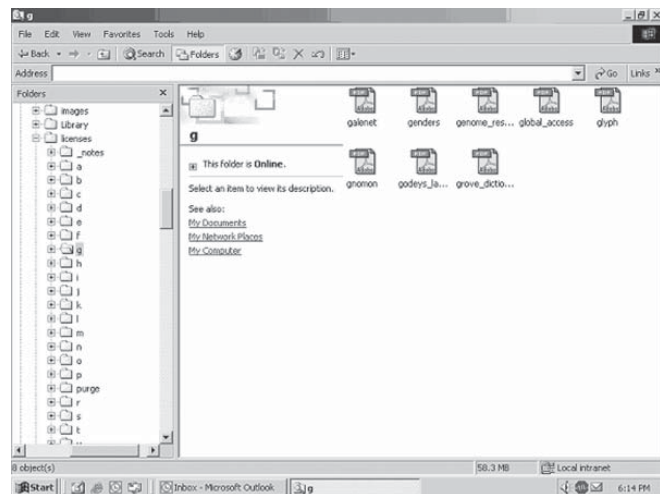


Figure 7. File structure on the Web server

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# Collection Development and Maintenance across Libraries, Archives, and Museums

## A Novel Collaborative Approach

Phillip M. Edwards

*Note: An earlier draft of this paper was presented on April 17, 2003, at the 2003 Popular Culture Association/American Culture Association Conference held in New Orleans, Louisiana, April 16–19, 2003.*

*This paper proposes guidelines for collaboration across libraries, archives, and museums that incorporate an understanding of how collections develop, the social systems that impart value to the collected items, and the needs of the research population. Future directions for professional practice implied by these general theoretical principles may enable collecting institutions to provide a high level of service to patrons while retaining their defined individual identities, expertise, and access (albeit sometimes indirectly) to the original physical objects.*

*The proposal relies on institutional relationships. To comprehend how relationships between collecting institutions can be used to preserve the historical record, one must understand why materials that document the historical record matter. The solution suggested here—that of a managed de-accessioning and accessioning cycle of selected and, therefore, historically important materials between different types of institutions—is an adaptation of the ideas presented by both Atkinson and Baker.<sup>1</sup> Emphasis is placed on fostering active relationships between individual institutions in order to preserve original documents that have attained significant contemporary social value and potential future usefulness. Reshaping day-to-day practice and designing systems modeled on the proposed themes could lead to Pareto-optimal outcomes for all participating organizations.*

In an electronic environment, preservation processes and the nature of collections maintained by libraries, archives, and museums are experiencing dramatic transformations. Traditionally, the types of materials collected and the research purposes that these materials support defined collecting organizations. Libraries “tend to collect material which exists in multiples, whereas other groups work with items which, by definition, are unique.”<sup>2</sup> The use patterns for libraries tend to center on content to a greater degree than the book- or text-as-artifact focus

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often observed in other collecting organizations. Increases in the volume of published material, the resulting competition for budgets and shelf space, and the promise of salvation through technology have led many collection administrators to make regrettable decisions—in hindsight—regarding the wholesale de-accessioning and destruction of primary materials from their institutions' collections in exchange for access to imperfect surrogates. These decisions were criticized in *Double Fold: Libraries and the Assault on Paper* by Baker, and a lengthy response to this critique, titled *Vandals in the Stacks? A Response to Nicholson Baker's Assault on Libraries*, was recently published by Cox.<sup>3</sup> General interest in the topic of long-term preservation in libraries, archives, and museums was generated as a result of this public debate.

In response to *Double Fold*, several members of the professional community mention editorially that libraries are not archives.<sup>4</sup> Librarians deal primarily with providing access to information, while archivists deal with information access and retention of evidence.<sup>5</sup> Museums, by comparison, “operate under a mode of indirect, mediated access” to the collected materials.<sup>6</sup> Despite these differences in function and focus, Levy and Marshall claim that contemporary “boundaries between libraries, museums, and archives, although intuitively clear, are not so easy to draw in practice.”<sup>7</sup> Each type of institution is subject to practical constraints on their actions as a result of budgetary, spatial, and scope limitations. These limitations result in both selection and weeding decisions, and the practices and processes through which materials are retained have implications for how these institutions function in the long term.

The relationship between practice and theory in collecting institutions, however, remains somewhat contentious, and specifically addressing how theoretical issues are reflected in the day-to-day operations of these organizations is often difficult. Interest in this complex issue has recently resurfaced in the professional literature, particularly within the archival community. Reinterpreting the nature of professional practice in light of social constructs, many researchers suggest a shift away from both passivity and objectivity of the archive-as-storehouse and archivist-as-neutral images in a postmodern environment.<sup>8</sup> Subjectivity of selection is recognized, isolationism is discounted, and the potential for collaboration within the discipline has not gone unnoticed. Stout has written, “We’re expecting to enter a world where discrete, stand-alone repositories are no longer ‘doing archives’ as they please. We envision our repositories as networked, connected, and observing broadly accepted standards.”<sup>9</sup>

An integrated picture of how theoretical ideas serve to shape practices across institutions is desperately needed if we are to fully understand the broad social impacts of networked collecting organizations. In order to develop this understanding, we must force ourselves to draw from

knowledge across different disciplines. The following analysis takes this approach and, at times, the connections that are suggested and the conclusions that are drawn may unnerve the reader. The intent is not to intentionally spark controversy; rather, these points are raised both to stimulate discussion about the relationships between collecting organizations in the modern environment and to illustrate the potential benefits of using theoretical constructs to inform daily professional practice.

### Semiotic Approach to Understanding Collections and Collecting Behavior

The characteristics of documents have been ardently discussed for centuries.<sup>10</sup> Collecting behavior is a similarly rich area of discourse and study. The ways in which meaning and value are ascribed to collecting activities and the subsequent actions taken to address these values can shape practices in collecting organizations. These actions and practices broadcast the value judgments of the librarians, archivists, curators, and collection users. Processes that convey value and meaning are suitable candidates for semiotic analysis; semiotics is a field of communication studies that focuses on the interpretation of meaning conveyed by cultural signs. Semiotic frameworks for understanding library and information science phenomena appear with increasing frequency in the published literature over the past four decades. The vast majority of these analyses, however, consider the application of semiotics to the meanings conveyed by professionals' choices of terminology within information systems rather than their selection and appraisal of objects. For example, Wagner, one of the few researchers taking this kind of approach with specific application to libraries, focuses on meaning ascribed to the relative placement and interior attributes of public library buildings.<sup>11</sup>

By comparison, the archives community has more quickly recognized the significance of meanings conveyed via collection decisions. Cook, among others, has considered record-as-sign and record-as-signifier concepts.<sup>12</sup> Another major theme that is often explored is that of record-as-dynamic-construct. Upward has written:

Records are in a constant state of becoming. They are stretched into new shapes and structures during the filing and aggregating processes that form them, and by disposal and new administrative patterns, which alter their physicality and the control and attention that they receive. Even disposition is cyclical and never final.<sup>13</sup>

A literature review suggests that semiotic analyses of this sort are absent in both library and museum literature,

despite the potential these methods hold for conceptualizing the social nature of collecting and the inherent value of collected objects.

### Selection, Movement, and Social Value of Objects within Collections

At the most fundamental level, the value of a collection rests with individual objects, and these objects have both physical and intellectual forms. Brabazon considers both aspects essential to understanding the significance of an object: “To emphasis [*sic*] content above form is to suggest that format is not actually part of the meaning structure. As the most basic semiotics informs us—the signifier (form) and the signified (content) are inseparable. Both make up the sign. Both shape meaning.”<sup>14</sup>

As mentioned previously, limitations with regard to acquisition and retention lead directly to selective rather than comprehensive collection building. Selection processes dictate that some materials are included at the expense of others. The very fact that one object enters into a collection rather than another conveys additional meaning regarding the perceived historical importance of both items.<sup>15</sup> Nesmith, speaking as an archivist, elaborates:

The decisions which archivists make shape this meaning-making context significantly. For example, when a record is designated archival, it is assigned a special status. It is circled, framed, or privileged for a particular type of viewing. . . . This very act of placing certain records on the pedestal of national progress, sacred memory, civilization, history, culture, democracy, or societal necessity often raises records which were once thought quite ordinary to this new special status as “archives” or, for some records, even higher yet, as archival “treasures.”<sup>16</sup>

Materials entering into a collection, therefore, are transfunctionalized, that is, the “technofunction” of the items shifts in meaning toward a “socio- or ideofunction,” thus attaining a greater social value than any excluded materials.<sup>17</sup> Parezo posits “materials to be saved take on the connotation of ‘that which is valuable,’ however value is defined.”<sup>18</sup>

In addition to the social value granted to each individual object as a result of selection, the nature of the collection itself conveys meaning. Leeds-Hurwitz has explored this concept in her book, *Semiotics and Communication: Signs, Codes, Culture*.<sup>19</sup> “It is not solely the attachment of a new meaning to an old object that is of interest here; there is also the creation of a new *set* of objects that when combined, convey new meanings not previously conveyed by any of the

objects separately.”<sup>20</sup>

Brabazon characterizes library collections both by the included and excluded materials.<sup>21</sup> The history of a collection provides a narrative that can be used to chart the value assessments of a society over time. Active acquisition of materials is characteristic of every library, archive, and museum; therefore, each collecting organization serves to chronicle a society’s judgments of value for the included and excluded objects.

The composition of collections, however, changes constantly as materials flow in and out of the collecting organization. In reference to museum collections, Akin observes:

Museums have always obtained materials from private sources, but the flow of collections is not a simple progression from private collector to museum to bigger museum (if the piece was “important” enough), rather there is an ebb and flow of ownership, a shifting back and forth between public and private hands.<sup>22</sup>

These shifts in materials are also informative. Movement of collected objects “can reflect a change in meaning (or the appreciation of a new meaning) of the material for the collector.”<sup>23</sup>

To summarize the above discussion, creation of social value is observable at several levels: through individual objects, through selection and exclusion decisions, through the composition of the collection, and through the movement of objects between collecting organizations. The significance of this dynamic value model is illustrated by Akin:

Certainly no study of material culture, past or present, can be called complete without examining . . . how the collection was subsequently broken up, reformed, and circulated through societies. Examining collecting behavior by looking at the collecting process, the motivating forces, and the principles of organization of collected material will, in turn, reveal new sources of information that can enhance our understanding of the past and increase our awareness of our own behavior.<sup>24</sup>

Archivists and other social scientists have attempted to model these changes in meaning and social value of objects over time. Ferrell discusses the effects of the processes of degradation and rehabilitation upon the derived social value of objects, and he posits that the life cycle of objects is a social process that consists of four stages: *new*, *old*, *used*, and *vintage*.<sup>25</sup> In contrast with the dynamic shift in meaning of materials as they move between collections, changes in social meaning among collected items lead to degradation and rehabilitation *within* the collection; all

selected materials are inherently subject to pass into and out of a particular collection as the holding institution re-evaluates the significance of these items. A mapping from Ferrell's stages to the roles of each collecting organization is possible, albeit imperfect and oversimplified: libraries' collecting philosophies place them near the *new* end of the spectrum, archives deal primarily with *old* and *used* materials, and both archives and museums present *vintage* objects to their users.

The records continuum model presents an alternative view of collection dynamics.<sup>26</sup> Despite differences in perspective and outlook, the overarching focus of both models is on understanding "continuity of processes."<sup>27</sup> A reasonable blending of these two schools of thought can be achieved if we view movement between stages as a fluid rather than a linear process. Regardless of the theoretical framework chosen, practical implications for scholarship arise from the analysis of socially valuable document attributes. One of the ways to address the effectiveness of preservation is by re-evaluating the ways in which materials with social value pass into, between, and out of these institutions. Because the social value of a single object is subject to change as it passes between collecting organizations, it is unwise to consider the objectives of one type of collecting organization as subordinate to those of others. Differences in collecting philosophies illustrate the underlying tension between libraries, archives, and museums over issues of *access* to content and *preservation* of object, but it nevertheless follows that our professional community must be prepared to manage objects during each portion of the life cycle or continuum.

Solutions to this problem have recently been proposed. The least noble proposal—that of selling unwanted items to the highest bidder through physical or online auctions—developed in response to the cash-strapped financial status of many collecting organizations.<sup>28</sup> Despite its practical benefits, this plan of action only addresses materials that have market value and ignores other attributes: future research value, evidential value, and so on. Clearly, this solution does not lead to the ideal "win-win situation" as claimed by its proponents.<sup>29</sup> As a community of professionals, librarians, archivists, and curators surely must be able to do better.

Cox suggests that selection decisions for preservation—determining which materials to focus on preserving—are best made at the level of the individual archivist or archive where context can be interpreted.<sup>30</sup> Although modern appraisal decisions do draw support from new methodological and theoretical frameworks, these decisions are nevertheless recognized as subjective, "regardless of accumulated experience, education, and expertise" of the archivist.<sup>31</sup> This position also is supported by Cook:

Nothing is neutral. Nothing is impartial. Nothing is

objective. Everything is shaped, presented, represented, re-presented, symbolized, signified, signed, constructed by the speaker, photographer, writer, for a set purpose. . . . And there is not one narrative in a series or collection of records, but many narratives, many stories, serving many purposes for many audiences, across time and space. . . . Archivists inevitably will inject their own values into all such research and activities, and thus will need to examine very consciously their choices in the archive-creating and memory-formation process. They will also need to leave very clear recorded evidence explaining their choices to posterity.<sup>32</sup>

Cook and Schwartz later continue on this theme:

Of course, these allegedly value-free tools—standards, templates, and so on—also impose their own rational, systematic way of seeing on a world of record keeping and records creators that is, in reality, inherently chaotic. . . . Postmodern archival thinking requires the profession to accept that it cannot escape the subjectivity of performance by claiming the objectivity of systems and standards. . . . And they should, above all, realize that there is no one answer, no right answer, and therefore accept the responsibility to be self-consciously accountable, for documenting their practice with open transparency.<sup>33</sup>

By having the ultimate determination of present and future social value rest upon a single organization, however well-informed, materials and narratives that no longer satisfy the organization's mission still have the potential to be lost forever. This criticism does not target the appraisal process, professional ethics, or even the idea of de-accessioning; rather, we should re-examine instances in which poorly documented decision making occurs *in isolation* from the rest of the collection-building community. Collaborative solutions among libraries, museums, archives, and other cultural heritage organizations designed to ensure access to collected materials have been suggested.<sup>34</sup> Collaborative solutions may also be useful for preservation and collection maintenance.

### Collaborative Solutions for Preservation of Physical Objects

In the October/December 1986 issue of *Library Resources and Technical Services*, Atkinson describes a collaborative system in which libraries could work together to slow the physical deterioration of their collected materials.<sup>35</sup> He

presents a system of classification in which low-use materials that may have potential use in future research are set aside for preservation at a regional or national level. His proposed system would enable this sort of coordination by focusing on enabling technology: "A shared bibliographic database with the capacity to identify items that have been preserved, such as RLIN and, in the near future, OCLC, is clearly essential for such a cooperative . . . program, since it will permit the library of record to avoid preserving items it holds that are already preserved elsewhere."<sup>36</sup>

In Atkinson's plan, "preservation" involves microfilming the original material with little mention of the survival of the physical object; access to content is held as paramount. Examples of similar collaborative projects are observable today. The Duplicates Exchange Union and EUROBACK, for example, facilitate the exchange of duplicate original materials between libraries.<sup>37</sup> However, these programs do not explicitly extend to other types of collecting organizations. If we begin to concern ourselves with the survival of physical objects, in addition to enhancing access through reformatting, we can envision an extension of Atkinson's plan in which an electronic union catalog serves to facilitate the transfer of materials between libraries, archives, and museums. If an enabling technology can provide us with a catalog of detailed bibliographic and holdings information, can we reasonably predict that the ability for an institution to electronically offer and claim de-accessioned volumes is not far behind? More importantly, should this matter to the libraries, archives, museums, and associated stakeholders involved in this extension across institutional boundaries?

If we are able to address the recent critiques of our collection development and preservation practices as a result, then the answer is "yes," and we have satisfied our professional objectives. Could we actively attempt to match a set of materials with an institution that is best equipped to monitor their condition? Could we reasonably maintain a system that allows original materials to be easily located, transferred, and tracked? Could we adequately document these transfers so we can provide justification for our actions and maintain transparency? Could we convincingly demonstrate that multiple narratives have an increased chance of being preserved? Could we, as a community of professionals, align some of our processes and practices in order to better serve the interests of society?

Current research into end-user behavior and expectations regarding collections can partially guide our responses. The identity of the institution that physically possessed a given item or artifact has been historically significant given the previously mentioned differences in research focus and collection composition between institutions. Analyses show, however, that researchers in the modern research environment are not particularly concerned with the identity of the individual institution physically holding a particular

item, thus the role of each of these institutions becomes less defined to end users.<sup>38</sup> If the previous claim is valid, then the policies promoted by Baker in *Double Fold* charging libraries with the responsibility to serve as guardians of original documents tells only a fraction of the story regarding how social meanings are ascribed to individual documents, collections, and institutions. Rather than redefining the duties of each of these institutions as implied by Baker's argument, a managed and well-documented accessioning/de-accessioning plan via institutional cooperation may potentially satisfy the needs of the nondistinguishing end user.

When a collecting organization acts in isolation, there is always the potential that some valuable materials will be prematurely lost. If the community of preservationists, however, view an object as valueless and adequately document this viewpoint, the decision to discard the original material is, at best, somewhat more justified and, at worst, reflective of value judgments made by society as a whole. Similar to the notion that materials never chosen to enter a collection are not considered for preservation, materials that are rejected by society *ex post* illustrate the changing social values of objects held by society at large.

### Guidelines for Collaborative Systems: Themes for Further Discussion

Collaborative systems require "commitment and investment of resources based upon a shared vision."<sup>39</sup> The following general guidelines are introduced to focus our thinking about both the movement of materials between collections and the potential for interorganizational collaboration.

*Understand the role of your organization within the community of collecting organizations.* Preservation can no longer be viewed as a process characteristic of a single institution. Recognizing that preservation and collection maintenance decisions can be made across institutional boundaries is essential in order to manage the flow of collected materials. Atkinson's words again prove to be relevant: "We must recognize that we cannot preserve cooperatively using the same values and procedures that we used to build a current local collection."<sup>40</sup>

*Increase accountability to the profession and the public via open information sharing.* Much of Baker's argument hinges on the relative obscurity in which de-accessioning policies operated. By offering de-accessioned materials widely to the collecting community, individual institutions may avoid the scrutiny that arose in *Double Fold*. When we make concerted efforts to reach out to other types of collecting organizations, we demonstrate our commitment to both fundamental values of our profession as well as the needs of the user communities that we serve. Documenting our actions allows us to leverage both transparency and

“reconstructability.”<sup>41</sup>

*The research value of objects must be conveyed to those responsible for preservation.* Enniss argues that “scholars simply need to be more vocal in articulating to library colleagues what materials are most important to them.”<sup>42</sup> We must keep in mind that discussions of research value are no longer limited to one’s home institution. As Akin has written:

The notion that an individual, institution, organization, or museum must have physical possession of an object in order to study, protect, and appreciate it is becoming an anachronism. Nonintrusive yet highly accurate methods of recording the physical characteristics of material culture are increasing rapidly. Although images and information can never substitute for the real object, many of the stated goals of museums, academic institutions, and private collectors—to preserve, protect, and present to the public their collections—can be accomplished without actual physical possession.<sup>43</sup>

Speaking for the archives and records management community, Whitman expresses a similar sentiment:

One of the outcomes of this more complex process of analysis, in relation to research records, may be for research communities and records or archives management interests to become ‘stakeholders’ relative to records management and archival processes. All stakeholders may demand a say in the orientation that governs those records management and archival tasks that affect them. . . . For these processes and relationships to be effective, some of the professional boundaries between researcher and records manager or archivist may need to be renegotiated.<sup>44</sup>

How effectively we renegotiate these boundaries will play a part in determining the continued relevance of our institutions to our clientele, even if our clientele are geographically distributed.

*Use Internet-based technology to enable transfer and tracking of documents between institutions.* Maintaining access to original materials may simply be a function of knowing the identity of the institution that possesses the physical object. We already see the positive effects of enabling technology to some extent; consider the success of bibliographic and holdings databases such as WorldCat among libraries. Technology alone will not solve our problems; however, it may enable us to collaborate across different types of institutions in ways that were heretofore impossible.

## Demonstrating Pareto-Optimal Outcomes

If we incorporate portions of the above analytical themes into our practices, how do we assess the outcomes of our efforts? Evaluating the impact of the behavior and choices made by our collecting organizations is essential if these institutions are to survive and flourish in the future. Borrowing from the economics literature, Pareto-optimality exists when the welfare of a single agent cannot be increased without harming the welfare of any other agent.<sup>45</sup> Rather than looking only for win-win situations, we should be able to demonstrate that our chosen actions exemplify the best of all possible win-win situations. In the context of this article, a Pareto-optimal solution would occur only when no additional societal benefits could be derived without a major corresponding increase in the amount of time, money, or resources spent by an individual institution.

Every collecting organization is responsible for accommodating, maintaining, and preserving the materials selected for its individual collection. When an institution decides, however, to de-accession materials, then the mind-set of this institution must change. De-accessioning is the result of a relative loss of local value for collected materials, but this local perception may not be identical to the view of society as a whole. As proposed, the best-case scenario results in a new home for a particular physical object; at worst, the material is discarded and has the potential to be irrevocably lost. This shift in paradigm—from local to societal value judgments—is clearly no worse than the outcomes under current practices. Participation in a collaborative system, i.e., serving as a “second opinion” for another organization’s decision, may have little effect on the work flow at a local level because participation is contingent on the capabilities of the individual institution at a given point in time. The social welfare generated from such a system, however, may be quite significant. It appears that the conditions for Pareto-optimality are satisfied from a qualitative perspective, but this concept remains to be addressed empirically in future work.

## Conclusion

The nature of document use differs across libraries, archives, and museums. The value of a documental object also changes over time, thus the relevance of that object to the user populations of various types of collecting organizations either increases or decreases. Rather than ignoring this shift in value and its implications for access and preservation, our profession must adopt practices and systems that support interorganizational collaboration with respect to collection maintenance. Coordinating the acquisition and weeding decisions of institutions appears to be both socially benefi-

cial and technologically possible.

It would be unwise, however, to assume the implementation of an information system alone would resolve coordination and cooperation issues. In order for such a system to enable change, we must rethink how our library, archival, and curatorial traditions relate to one another. Each of these institutions has certain strengths when dealing with objects at different stages of their life cycle. By ensuring that collecting organizations support each fluid stage of a documental object's life cycle, we can minimize the chance that materials will be discarded before society has deemed them valueless. Social theoretic constructs may provide a lens through which we may view our current collecting processes in order to reshape practice for the future.

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# The Administration and Management of Integrated Library Systems

## A Survey and Results

**Rosann Bazirjian**

*The Pennsylvania State University Libraries developed a committee organizational structure (composed of a steering committee and functional expert teams) to administer and manage its integrated library system. This paper will summarize that organizational structure and highlight management trends that were revealed as a result of a survey to CIC (Committee on Institutional Cooperation) libraries. Key patterns emerged in the areas of decision making, collaboration and reporting structure, and communication that may serve as standards in the discussion revolving around the best way to administer and manage an integrated library system. Decision making is being brought to the functional level, the need for positive collaboration between library departments is being realized, and the distribution of expertise throughout the libraries has facilitated the communication process.*

The Pennsylvania State University Libraries migrated to a new integrated library system (ILS) vendor in the summer of 2001. Prior to and during implementation, a myriad of committees and subcommittees focusing on specific functional areas of the various modules or clients were created. Once beyond implementation, the libraries needed to find a productive and efficient way of continuing to manage and administer their new ILS system. There was a strong desire to streamline the management of the system and to empower those who best understood the system and worked most closely with it, so that they could make decisions and move the libraries forward. The assistant dean for technical and access services worked with her colleagues in libraries administration, along with digital library technologies (a division of the university's information technology services), to devise a new structure to administer and manage the new system at functional levels, rather than in a more traditional, hierarchical structure.

To that end, a steering committee structure was created, composed of representatives from the various functional or module areas in the ILS system. These areas are circulation/academic reserves, acquisitions, cataloging, public access/WebCat, serials, and systems administration/technology support (see figure 1). This committee of seven has two cochairs: the head of cataloging services and a librarian from the Digital Library Technologies (DLT) unit. It was felt that sharing the chairmanship of the committee between the libraries and DLT would foster good communication and facilitate work flow. This steering committee

includes representation from Penn State's various campus libraries throughout the state as well as the Hershey Medical Center Library. The steering committee is empowered to make decisions regarding policies and new initiatives, such as interface issues and systems operation, including enhancement recommendations and problem resolution.

The steering committee also was asked to direct the activities of six "expert teams," representing the same functional areas identified above. These experts are individuals who are highly knowledgeable about the system. One member of each expert team is also a member of the steering committee to ensure that the proper communication channels are in place. Each expert team has several important and broad areas of responsibility. These include:

- Coordinating training
- Coordinating testing and evaluation of new releases, procedures, and initiatives
- Coordinating scheduling and implementation of new releases
- Serving as forum masters, which involves monitoring the ILS Web site and making enhancement requests
- Troubleshooting
- Determining time lines and new product development for DLT
- Coordinating scheduling and running of reports
- Creating documentation
- Providing product assessment

Thus, the steering committee provides the administrative nucleus of the new management structure, and the expert teams provide the knowledge base.

### **Survey of Literature on the Administration and Management of Integrated Library Systems**

During the last ten years, very little has been written on the topic of the administration and management of integrated library systems in the library literature. However, one excellent book that focuses on automation in general and the organizational change that it encourages was written by Peggy Johnson.<sup>1</sup> She covers issues such as communication, decision making, and the sharing of information in light of the changes that automation brings. A 2002 article by Corey Seeman emphasizes the need to focus on changing processes and established work flow once a new ILS system is implemented. Seeman points to the importance of taking advantage of new technology and systems to question established routines to maximize what the new system brings with it.<sup>2</sup> Julie Hallmark and Rebecca Garcia, in their 1996 article on automated library systems, focus on the training aspect of systems implementation and management and the need for

successful staff training in any new system.<sup>3</sup> A 1999 article by Ruth Salisbury deals with the implementation rather than management of a new ILS and also informs the reader that a very positive aspect of implementation is the new relationship that it fosters between libraries and information technology services (ITS) personnel.<sup>4</sup> Rhonda Ames summarizes a 1986 Association of Research Libraries SPEC Kit that surveys the role of systems librarians and offices in the management of ILS systems.<sup>5</sup> She finds that the duties and functions of systems librarians included providing backup, troubleshooting and repairs, new employee training, planning, installation, and maintenance. Ames also discusses the role of the library and academic computing centers, and the pros and cons of centralized and decentralized organizations. In her 1988 master's thesis on the selection, implementation, and development of integrated systems, Elaine Lois Day writes about the importance of staff involvement in the planning process. She identifies effective communication, the importance of involving staff members in planning and implementation committees, the importance of critically evaluating the system by staff members responsible for its operation, and the need to draw upon the technical expertise of individual staff members as essential elements for a successfully managed ILS.<sup>6</sup>

### **Survey Method**

The Penn State Libraries wanted to see how peer institutions were organized for the administration of their ILS systems in order to benchmark its new structure against its peers. Was Penn State doing something very different or, in fact, were peer institutions also moving toward functional rather than hierarchical management? Would research findings indicate new trends that could inform or be utilized by other institutions? In order to ascertain how peer libraries are organized to administer and manage their ILS, a survey was sent to the technical services directors of member libraries in the CIC (Committee on Institutional Cooperation) Center for Library Initiatives. The CIC is a consortium of twelve research universities (University of Chicago, University of Illinois, Indiana University, University of Iowa, University of Michigan, Michigan State University, University of Minnesota, Northwestern University, Ohio State University, Pennsylvania State University, Purdue University, University of Wisconsin–Madison) committed to advancing academic excellence by sharing resources and promoting and coordinating collaborative activities.<sup>7</sup> Thirteen libraries participate in the Center for Library Initiatives; both the University of Illinois at Chicago and the University of Illinois at Urbana-Champaign are participants.

As peer institutions, the information they could provide about the management of their ILS would be important



**Figure 1.** Visual representation of steering committee and expert teams structure

regardless of the vendor that they were using. Ten of twelve surveyed libraries responded to the survey; for the purpose of this evaluation and the numbers that are being reported, Penn State's organization and structure are excluded from the analysis.

The survey was divided into seven sections that comprised the essential components of the administration of ILS systems: background information gathering, management issues, testing and training, problems and troubleshooting, assessment, documentation, and communication. The survey was sent electronically to the CIC Technical Services Directors Electronic Discussion Group.

## Findings

Very clear patterns emerged from the survey results in the areas of decision making, communication and collaboration, and reporting structure. This paper will focus on key patterns that emerged from the survey responses rather than on individual survey responses and detailed statistical analysis. Individual responses to the survey can be found in the appendix. These patterns were ascertained primarily from a qualitative review of the summary responses and—to a lesser extent—a quantitative analysis. From the responses, it is clear that new standards of administration and management of integrated library systems are being developed that can serve as guidelines for other academic libraries.

### Decision Making

Decision making is made at the functional level whenever possible and is broadly distributed. Major funding investments, project management, and significant policy decisions tend to continue to be made by library administrators or systems units.

All of the libraries surveyed report having a management team or representative committee (steering committee) in place to manage and administer the ILS. The teams and committees represent key functional areas of the

library and tend to parallel the modules of the ILS. The committees are made up of both librarians and staff, many of whom are mid-level managers. Fewer than half of the libraries reported that a director or assistant/associate director (AD) sits on the committee, and only two libraries indicated that the committee reports to a director or an AD. The steering committee

is most often the group that is empowered to make decisions regarding ILS policies, guidelines, and development initiatives, thereby bringing decision making to functional levels across multiple departments. Four libraries report that subteams (or module teams) report to the larger representative committee. These subteams have a more detailed knowledge of how the ILS system works in their specific area of expertise. There is systems office representation on all of the committees, and a majority of libraries report that there is campus representation on the committee. Functional groups handle what are felt to be local decisions regarding policies and guidelines. Administrators most often are included in policy discussions when a decision requiring a large fiscal investment needs to be made. However, this is an area where library administration is more involved. (See answers to Management Questions 1 and 2 in the appendix.)

In all but two libraries, the decision regarding the implementation of new ILS software releases rests with an advisory or steering committee in consultation with the head of a systems office. This is a logical responsibility because the advisory or steering committee needs to be knowledgeable about the ILS system and what is included in new releases in order to properly test the system and to prepare for training. They also need to make these decisions based on an overview of the entire library's needs and priorities. In two instances, the AD for "systems" makes the decision in consultation with systems office or IT office managers. (See answers to Management Question 4 in the appendix.)

Product enhancements are usually suggested to the ILS vendor through the vendor's organized enhancement process. Nine libraries reported that they have empowered functional units or teams to suggest and vote on enhancements to the system. Two of those libraries specifically indicated that they consider library-wide input in the decision. Five libraries report that collaborative decisions from steering committees are funneled through a systems office to send along to the vendor. One library has a specially appointed Enhancement Team. (See answers to Management Question

5 in the appendix.)

Seven libraries reported that the functional areas of the library are responsible for staff training, be they departments or specific module teams. The responsibility for training is brought to the level where the knowledge of the ILS system and procedures of the department are best handled. One library reported that a human resources unit and an ILS committee train on new releases; however, systems office staff as well as specific departments provide training as appropriate. One library reported that the systems office manager plus department heads are responsible for training. (See answers to Testing and Training Question 1 in the appendix.)

### **Collaboration and Reporting Structures**

Collaboration exists laterally across units and departments in libraries and among staff, faculty, and administration. There are strong interdependencies between systems and library staff. Technological issues such as testing and troubleshooting rest with a systems office.

Use of steering committees and assignment of functional responsibilities between and among departments and between library units and systems offices are in strong evidence. The discussion regarding the intense relationship between systems offices and libraries is not new, yet despite the increasing collaboration the issue still exists.

The question of who in the libraries serves as liaison to the systems office produced varied responses. One library reported the appointment of a "contact person" to interact with systems personnel. In some libraries (three), everyone can communicate directly with the systems office. Still others handle this much more formally, indicating that only those in the library automation office or serving as online coordinators can interact with systems office personnel. One library reported that the head of the systems office holds a dual appointment: 80 percent in the library and 20 percent in the university computing center. Part of this individual's staff is in the library, and the rest are in the computing center. (See answers to Communications question 3 in the appendix.)

The testing of new releases is very much a collaborative effort, with a good portion of the responsibility coming from the systems office. Although most libraries reported that their systems office coordinates this type of testing, they work closely with appropriate functional areas or module teams, which help as necessary. Only one library reported that its working group is primarily responsible for testing, yet the library acknowledged that the systems office also does much work. (See answers to Testing and Training Question 2 in the appendix.)

For the most part, systems offices are responsible for troubleshooting the ILS. Five libraries reported that their

systems office is primarily responsible for this function. Two libraries reported that this is clearly the responsibility of the functional groups. In the case of the latter, it was felt that the functional areas could handle module-specific problems, whereas more technical problems would be dealt with in the systems office. One library reported that either the functional group or systems office would handle the problem, depending on the nature of the problem and who is better prepared to resolve it. (See answers to Problems/Troubleshooting Question 1 in the appendix.)

Project priorities appear to be handled collaboratively in all libraries, e.g., a steering committee working with input from functional units and teams in consultation with a systems office. There is an administrative voice in the process with, in one case, recommendations going from the steering committee to the university librarian for decision. One library reported that priorities are negotiated with the library's state consortium, as necessary. (See answers to Management Question 9 in the appendix.)

### **Communication**

New communication patterns have been created in order to respond rapidly to concerns, issues, and problems. Libraries have moved from very formal communications to more informal systems facilitated by technologies such as electronic discussion lists and help-desk software. Expertise is being distributed throughout the libraries to facilitate efficient response and communication.

Libraries appear to have found comfortable local mechanisms for facilitating internal communication, but external communication appears to be much more restrictive in terms of who can speak as the voice of the libraries to the vendors.

By far, the majority of internal communication is handled via e-mail, which was described as facilitating an easy flow of information from systems offices to the libraries. Most of the libraries are using electronic discussion groups and e-mail to communicate information, report and track problems, and facilitate questions and answers. This could take the form of a proprietary database such as Footprints or Bugzilla, or help-desk software that is internally grown. Libraries using Footprints and Bugzilla utilize this software to report problem resolution to the individual who reported the problem. This software can automatically send an e-mail back to the individual. For libraries not using this software, systems offices usually report back using e-mail. In most cases, staff is discouraged from directly contacting systems staff. They are asked to funnel questions either through their functional group or department head. Surprisingly, 50 percent of the libraries reported that the telephone is still a good form of communication between systems and other library staff. One library reported that the AD for library

technology schedules “all staff” update sessions two to three times a year. One library described the process as spotty and in need of improvement. (See answers to Problems/Troubleshooting Question 2 in the appendix.)

Nearly all libraries reported that external communication with the ILS vendor is handled through the systems office or its equivalent. Very clearly, individual departments or staff members are discouraged from directly contacting the vendor. Libraries reported variously that the AD for digital library systems, integrated library systems manager, systems implementation manager, library automation office, online catalog coordinator, and head of the systems office were responsible for external communication. (See answers to Communication Question 2 in the appendix.)

The survey indicates that new communication patterns have developed that allow efficient response to questions and problems regarding integrated library systems. When asked if library users are able to send feedback through the online catalog, all but one library reported yes. Eight out of ten libraries reported that there is a link in their OPAC (online public access catalog) that will refer a user’s question to either the systems office or to functional units and teams who are knowledgeable about specific ILS modules. However, 40 percent reported that the module experts rather than the systems office handle most responses. Four libraries reported a link from the library Web site rather than from the OPAC. These questions also are referred to either systems offices or functional teams. The one library that reported not providing a mechanism for feedback through its online catalog did say that users can complete written forms or send an e-mail to the manager or supervisor of the module involved. (See answers to Assessment Question 3 in the appendix.)

Written documentation of new procedures is provided by functional teams who are expert in module areas, or by individual departments responsible for implementing new procedures. Allowing individual teams or departments to write documentation brings the responsibility down to those who know the functionality of the specific modules best, as well as the work flow of the individual department. Individual teams or departments also understand the impact of the modules on departmental work flow. One library reported having allocated a 0.75 FTE in technical services to edit a locally developed online procedures manual. (See answers to Documentation Question 1 in the appendix.)

Public services units, including reference and access services, are responsible for developing most of the written documentation for users. This appears to have emerged as a clear public service responsibility. Two libraries maintain online help for users in their OPACs. Those that utilize teams to provide documentation have relied upon an OPAC issues group, publicity committee, user interface team, or OPAC working group. (See answers to Documentation Question 2 in the appendix.)

A question about how documentation is maintained

and archived in the library brought varied responses. One library indicated that it relied on the vendor’s Web site for documentation. Eight out of ten libraries reported that documentation is maintained on their intranet or Internet Web site. One library reported that documentation is not systematically or consistently stored or archived in any one location. The need for retrieval of documentation across the libraries is facilitated by using Web sites that are accessible by all who need to see them. The days of large print manuals are over. (See answers to Documentation Question 3 in the appendix.)

## Conclusion

The administration and management of integrated library systems is no small task. It involves a multitude of individuals and oversight and functional committees working together to make it successful. Although the survey group is small (ten CIC respondents), the responses suggest clear trends and patterns. It is possible to conclude that libraries have brought the decision-making responsibilities for and management of their ILS to the functional level to take full advantage of the expertise that is offered by both librarians and staff. Close interaction and collaboration between a systems office and functional and departmental areas is apparent and imperative for a productive work environment. New communication patterns that facilitate response and action and share expertise through formalized and informal systems are being followed.

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## Appendix ILS Survey Responses

### Background

**Question 1:** What integrated library system (ILS) are you currently using?

System	# of Libraries
SIRSI	1
Ex Libris	2
Innovative Interfaces	2
Endeavor	4
Dynix (Horizon)	1

**Question 2:** Who in your organization made the decision to choose the ILS in your organization?

Decision-maker	# of Libraries
Dean or director	0
Assistant/associate dean or director	0
A special committee of librarians and staff	6
A special university committee	0
A special committee comprised of librarians	1
Statewide consortium	2
Many committees with representatives from 26 campuses	1

**Question 3:** Is your "systems office" under your library's administration? If not, who does it report to?

Reports to:	# of Libraries
Reports to the dean/director of libraries	2
Reports to the university's CIO	0
Reports to an assistant/associate dean or director	7
Under the computer lab	1

**Question 1:** Do you have a management team in place to administer the ILS in terms of policies, guidelines, and development initiatives? If yes, what is the composition of that team? What areas of the library and/or systems office do they represent, e.g. public services, technical services, etc.?

Institution	Response
1	Steering committee under guidance of assistant dean for digital library services (DLS), who is not a member. Includes representation from functional (cataloging, acquisitions, circulation, systems, gateway, public services) areas. Functional teams report to the steering committee.
2	Support Team reports to Library Management Team (includes assistant dean, directors, heads of school and department libraries, Head of Technical Services, Access Services, Auxiliary Services) The Support Team includes people from Systems, Public Services, Cataloging and Authentication, Acquisitions, Circulation and Reserves, Media.
3	ILSAC (Integrated Library Systems Advisory Committee) includes representatives from Reference, Bibliographers, Cataloging, Acquisitions, Serials, Law, Science, Access Services.
4	Administration Committee chaired by the AUL for IT. Members are head of Library Management Systems Department, chairs of four module teams (Acquisitions, OPAC, Cataloging, Circulation) and Law, Medical.
5	Management Advisory Committee. Composed of head of Library Automation office, programmer, heads of major units, i.e., Access Services, Reference, Technical Services, Information Systems and Technology, Law Librarian, head of Law, Technical Services. Works with functional teams.
6	Committee representing Systems, Public Services, Technical Services.
7	State level: ILCSO Advisory Group, which includes representatives from Technical Services, Access Services, Public/Outreach, Hardware/Software Network Connectivity Services and Electronic Services. Local level: Circulation, Technical Services, OPAC.
8	Electronic Library Council (ELC) consists of directors of campus libraries (Health Science, Law, Engineering, Education), the director and assistant deans of General Library Systems (GLS). Chaired by the GLS assistant dean for library technology; addresses high level stuff. There are two dozen or so committees that report to the ELC.
9	Database Advisory Committee made up of mid-level managers representing all areas of library (Reference, Acquisitions, and Circulation, branch libraries, Database Management, Collections, Government Documents, Systems).
10	General committee made up of Technical Service, User Services, Collections, regional campus, Law, Health Science.

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**Question 2:** How are your assistant deans/directors and deans/directors involved in the management of the ILS? How about department heads? How about staff level positions?

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<b>Institution</b>	<b>Response</b>
1	ILS steering committee reports to assistant dean for digital library services and Executive Council (composed of three assistant deans and the director) are responsible for large issues.
2	Assistant dean is involved when expenditures (dollars) for ILS come into play.
3	Manager of the Integrated Library Systems Department reports to the associate director for information resources management.
4	The AUL for IT chairs the Administration Committee. AULs for Public Service, Technical Service, and Collection Management have no official role, but the AUL for IT always consults with them before the AC makes any major decisions.
5	Directors are involved in the Management Advisory Committee.
6	Is ad hoc and not easily described.
7	Library has a steering committee (comprised of administrators and department heads) that among other duties coordinates the integrated library system task forces.
8	Director and assistant deans of the GLS (General Library System) are on the Electronic Library Council.
9	Handled by the online catalog coordinator, who reports to the head of technical services, who reports to the assistant dean for systems and technical service. Other assistant deans give input but are not directly involved in management.
10	Some assistant deans chair committees. They approve policy.

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**Question 3:** Who attends the annual user group meetings of the integrated library systems vendor?

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<b>Institution</b>	<b>Response</b>
1	Representatives from each functional area who are on the ILS steering committee (approximately five or six people).
2	Various staff depending on the agenda and who would benefit the most. They write proposals, including cost, and submit to directors. The system implementation manager always attends.
3	Integrated Library Systems Department staff and sometimes staff from other parts of the libraries.
4	Send about 20 people depending on how much they can afford. All staff apply who want to attend.
5	Director in charge of the ILS Automation Office staff and library staff (department heads or lower) who have pertinent involvement.
6	Send approximately four people depending on budget. No formal policy or set list of attendees.
7	One or two systems staff. Other staff as pertinent.
8	Depends on program topics, but always LibOne liaison in Library Technology Group and staff from Technical Services and Public Services.
9	Online catalog coordinator and middle managers whose staff use the system.
10	Systems manager, technical services system manager: both report to assistant dean for Information Technology.

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**Question 4:** Who makes the decisions regarding the implementation of new ILS software releases?

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<b>Institution</b>	<b>Response</b>
1	Steering committee
2	Support Team with rationale sent to Information Technology Department.
3	Integrated Library Systems Department in conjunction with Integrated Library Systems Advisory Committee.
4	Administration Committee.
5	Management Advisory Committee (MAC), but much discussion and politicking takes place outside MAC so that MAC simply approves something that has already been decided.
6	Technical group consisting of members of the joint library/computer center library systems group.
7	The consortium in consultation with vendor, but only in cooperation with local staff.
8	Electronic Library Council makes final decision in consultation with the committees and library technical group—that is, the department responsible for monitoring the loading of the software and system maintenance.
9	Online catalog coordinator in conjunction with assistant dean for systems and technical service.
10	Systems manager in consultation with assistant dean for information technology.

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**Question 5:** Who is responsible for suggesting product enhancements to your ILS vendor?

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Institution	Response
1	Steering committee, but high price tags to Executive Council.
2	One of clerical staff members is on a vendor enhancement team (vendor has teams of enhancement users); otherwise staff funnel through systems.
3	Integrated Library Systems (ILS) Department.
4	The module teams decide. Administration Committee (AC) affirms that is good for entire organization then the AC asks the LibOne or TechOne (official spokespersons to vendor) to communicate with vendor.
5	Annual users group enhancement process exists. Institutions vote and prioritize from nationally submitted lists of enhancements.
6	Two of the people in systems moderate the Web discussion groups and report when enhancement suggestions are made.
7	Vendor's Web site available to all staff that are empowered to make suggestions.
8	Functional committees make suggestions.
9	Database Advisory Committee with input from staff they represent.
10	Committees submit through systems manager to users group. Others work directly with vendors, especially Technical Services.

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**Question 6:** Who is empowered to make decisions regarding your ILS policies, guidelines, and initiatives?

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Institution	Response
1	Executive Council with input from steering committee.
2	Usually Support Team, but if big issue, i.e., portal or when significant funding is needed, then goes to dean.
3	Integrated Library Systems Advisory Committee.
4	Administrative Committee for system-wide decisions; module teams for module specific things.
5	Management Advisory Committee, but probably also the director and assistant deans.
6	Committee made up of representatives from Systems, Public Services, Technical Services units with option to refer decisions to library directors.
7	Combination of ILCSO staff (who owns the software and hardware), the Director (who owns local money), and library staff at all levels who can influence the consortium and University Libraries.
8	Broad policies are domain of Electronic Library Council (ELC). Functional departments make others. ELC has right to review all policies, especially if significant workload implications.
9	Online catalog coordinator in conjunction with assistant dean for systems and technical services.
10	Committees and some department heads along with Information Technology office.

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**Question 7:** How is your integrated library system funded? Who pays for the product?

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Institution	Response
1	One-time allocation from provost. Rest is part of library base budget.
2	Part of library budget. The director of information technology controls the budget; dean has a voice.
3	Library operating budget.
4	University paid for initial purchase (hardware & software). Library pays for maintenance of software & client hardware. University computing pays when they need a new server.
5	Library.
6	Separate line in library budget.
7	The state and consortium members.
8	Library technology fund has been established; is managed by the General Library System assistant dean for library technology. Initial procurement was a library system-wide initiative.
9	Library.
10	Library for most. Occasional items paid by state consortia.

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**Question 8:** How is project management handled?

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Institution	Response
1	Resides under steering committee.
2	Case-by-case basis. Usually systems implementation manager oversees.
3	ILS (Integrated Library Systems) Department provides project management.
4	Administration Committee is responsible, but LMS is often the place where work needs to take place, so they have loudest voice and most responsibility.
5	Head of the Library Automation Department.
6	By the manager of a library team within the computer center.
7	Systems or systems related staff in cooperation with consortium system staff.
8	Depends on size and scope of project, but would go to a committee or work unit.
9	Online catalog coordinator.
10	Combination of Information Technology staff and library department involved.

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**Question 9:** How are priorities handled?

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Institution	Response
1	Steering committee.
2	Support Team, Information Technology Department Council, director of information technology.
3	Projects are proposed and prioritized by the Library Computing Council.
4	Administration Committee is responsible, but Library Management System (LMS) plays a big role.
5	Functional working groups send priorities to the MAC (Management Advisory Committee), which prioritizes and works from list. Politicking takes place outside committee; so MAC is really only approving a priority.
6	Units within libraries requesting a project must fill out a project management form that contains complete functional requirements. It is anticipated that the steering committee of three library directors will take greater responsibilities for assigning priorities among projects.
7	Negotiated with the consortium as necessary. Locally, requests go from steering committee to University Librarian.
8	Electronic Library Council handles campus wide priorities.
9	Online catalog coordinator based on input from Database Advisory Committee.
10	Combo of Information Technology staff and library department involved with input from assistant dean of information technology.

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## Testing and Training

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**Question 1:** Who is responsible for training staff when a new release is implemented?

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Institution	Response
1	Immediate supervisor.
2	Team/department member.
3	Systems office staff.
4	Human Resources.
5	Human Resources, but functional areas responsible for training. Human Resources is developing "train the trainer."
6	Integrated Library Systems Advisory Committee and Human Resources train on new releases. Integrated Library Systems staff provide some training; specific departments do as appropriate.
7	Module team.
8	Individual functional areas.
9	Combination of committee members of modules and resource persons in the department who lead the training classes.
10	Technical services systems manager plus department heads.

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**Question 2:** Who coordinates the testing of new releases?

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Institution	Response
1	Steering committee with support from functional departments.
2	Systems implementation manager, who works in Information Technology Department.
3	ILS (Integrated Library Systems), who reports to associate director for information resources management.
4	Administration Committee and module teams coordinate within modules.
5	Library Automation Office working closely with functional groups and, as needed, heads of functional units of the library.
6	Working groups have prime responsibility, but much is also done by systems office.
7	Systems, in cooperation with ILSCO computer systems office, affected department heads and their staff, and Circulation, Technical Services, and Security Task Force.
8	Library Technology Group takes the lead working with departments/committees who are most affected by the software changes.
9	Online catalog coordinator.
10	Systems manager.

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## Problems/Troubleshooting

### Question 1: Who is responsible for troubleshooting the system?

Institution	Response
1	Depends on problem—either functional department or systems department.
2	Systems implementation manager.
3	Integrated Library Systems Department, which reports to associate director for information resource management.
4	Administration Committee and module teams coordinate within modules for functional troubleshooting. Library Management Systems Department works on more technical things.
5	The two systems librarians in the Automation Office, the information technology system programmers, and library staff (particularly members of the functional teams).
6	Systems office.
7	Consortium plays lead role. At local level, users report problems to electronic discussion lists and staff to relevant task forces.
8	Functional problems to appropriate functional committee. These groups send to Library Technical Group, which reviews it and forwards to vendor. Technical problems to Library Technology Group.
9	Online catalog coordinator.
10	Systems manager plus Technical Services systems manager.

### Question 2: How are problems reported to those who are responsible for the system?

Institution	Response
1	Identified by functional groups. They are developing a trouble-reporting database with SQL.
2	Footprints for reporting problems. Also, systems implementation manager will be called directly. Also, have a call desk in Information Technology Department.
3	Phone, e-mail, or Bugzilla (a problem tracking system).
4	E-mail, phone, in person. Anything that translates into a bug report or enhancement goes to relevant module chair. LibOne or TechOne reports problems to vendor or university computing.
5	Funneled thru Automation office. Staff members are encouraged to use forms. Head of Library Automation and the systems librarians forward problems to vendor.
6	Help desks using problem tracking software. End users are discouraged from reporting problems directly to systems.
7	Local e-mail electronic discussion lists managed by ILCISO. Department heads report to systems.
8	Through functional groups to Library Technology Group.
9	Phone or e-mail.
10	Phone, e-mail.

### Question 3: How does the person who reported the problem get feedback about the resolution?

Institution	Response
1	Looking at Footprints for tracking problems; use tickets that report back.
2	Feedback via Footprints via e-mail or personal notices.
3	Bugzilla. It tracks and automatically e-mails people who have reported problems. Also, they put out e-mail information concerning fixes for each release.
4	Vendor or university computing center communicates with LibOne or TechOne who communicates to module team chair, who reports to other teams.
5	From Automation Office to that individual via e-mail.
6	From systems or via help desk.
7	Consortium feedback is immediate, but spotty. Local users can count on direct responses. Staff feedback is spotty and can be sent via e-mail or electronic discussion lists.
8	Via e-mail.
9	Online catalog coordinator works with vendor and follows up with staff about the outcome.
10	Have feedback forms; also verbally.

## Assessment

**Question 1:** Who provides assessment of the product on the staff side when a new release is implemented?

Institution	Response
1	Functional departments.
2	No formal assessment when new release is implemented. Problems are reported to systems implementation manager, but no formal assessment.
3	Integration Library Systems Advisory Committee.
4	Administration Committee coordinates work of module teams and the Library Management Systems Department.
5	Functional working groups supplemented by staff that regularly work with specific functions and are called upon to help do pre-implementation testing.
6	No process for assessing after new release is implemented, but before it is implemented, it is thoroughly tested.
7	General assessment is at consortium level, but all who use a new release are empowered to report problems.
8	Library Technology Group initially, followed by library staff knowledgeable on the functions included in a new module.
9	Department managers.
10	Library department staff/faculty.

**Question 2:** Who provides assessment of the product on the public side?

Institution	Response
1	Public services departments and formal user assessment.
2	User surveys and usability studies.
3	Subgroups of the Integrated Library System Advisory Committee responsible for public interface decisions.
4	Administrative Committee coordinates work of OPAC or circulation team.
5	OPAC working group has primary responsibility, but all staff involved in testing a new release are encouraged to review the public side as well as staff side.
6	No process after implementation.
7	Reports of local user questions and problems are monitored by a statewide library computing systems office staff, as well as library staff. A local WebVoyager Task Force monitors OPAC functionality.
8	PAC issues group assessment on basis of their own experience, and problems/questions reported by the public.
9	Reference staff, usually.
10	Users Services Committee.

**Question 3.** Are your patrons able to send feedback, questions, etc., through your online catalog? How are these handled and by whom?

Institution	Response
1	Yes. Staff from public services and technical services Web staff and systems staff respond.
2	Not through online catalog. Is on library's Web site, but not vendor's site. Goes to library webmaster who forwards to system implementation manager. Feedback ends up in Information Technology Department and answered or forwarded.
3	There is a Web address. Goes to list of functional departments, i.e., circulation, reference, as well as ILS. They all see the message and are copied on the response.
4	There is a link on the OPAC screen to e-mail. OPAC team refers questions or complaints to other module teams as necessary.
5	Not directly through online catalog. There are links to forms that can be filled out (e.g., requesting in-process item), but all of the information must be keyed in and form does not interact with OPAC record.
6	Yes. One person in the systems office reviews and responds to feedback.
7	The library Web page has a "Contact the Library" link that goes to a triage in library administration and then to experts around the library system. The OPAC has a link that goes to the same electronic discussion list, plus to a list of those who were most involved in the implementation of the ILS.
8	From e-mail launched from icon in OPAC. Members of OPAC issues group respond. Also phone number for library technology group help desk.
9	No. These come to us via written forms or by e-mail to the manager/supervisor of the module involved.
10	Yes. Public services monitors and refers as needed.

## Documentation

**Question 1.** Who provides written documentation of new procedures?

Institution	Response
1	Functional teams reporting to the steering committee.
2	Within given department or various functional teams.
3	Individual departments implementing the procedures.
4	Individual units that are implementing new processes.
5	Functional working groups provide high-level documentation, but function-specific local documentation comes from appropriate libraries unit.
6	Highly decentralized. Sometimes done by the individual functional “working groups”; more often it’s the responsibility of individual units.
7	Task forces or departments as appropriate.
8	Developed by committees. Technical services has allocated a .75 FTE to edit a locally developed online manual.
9	Department managers.
10	Departments.

**Question 2.** Who provides written documentation for the users?

Institution	Response
1	Gateway functional team.
2	User interface team (are mostly faculty members).
3	Staff users have access to vendor documentation online. Public users have access to help files in the system, and Web pages of instructions maintained by reference and access services staff.
4	Individual librarians or public service units. Most user documentation is incorporated into the Web interface to the system.
5	OPAC working group and reference department.
6	We rely on online help in the OPAC, which is created by an OPAC working group. Individual librarians may or may not create their own end-user document.
7	Public service librarians through the Web Task Force.
8	OPAC issues group provides online help information.
9	Publicity committee or reference staff.
10	Information technology librarian.

**Question 3.** Do you keep internal documentation about your system? If so, where does it reside (Internet Web site, intranet Web site, paper documentation, etc.)?

Institution	Response
1	Rely on vendor’s Web site.
2	Is on library’s LAN and circulation team’s file intranet.
3	Web site, staff Web.
4	Older documents are on paper. Other documents reside on computers, some shared and some exclusive to LMS or computing center staff. Module teams also have documents maintained by module team chairs.
5	On libraries’ intranet Web site.
6	No single central repository.
7	User documents available via Internet and in print. Local staff documents available on internal Web pages.
8	Intranet Web site.
9	Not much. Technical services has an intranet site where it posts all written procedures.
10	Web site—usually password-protected.

**Question 4.** Who is responsible for collecting, managing, and providing statistics on system use?

Institution	Response
1	Library systems department.
2	Don’t do a lot of this.
3	Individual departments using MS Access reports that they have designed themselves. ILS does some special reports on demand. Proposing two-year project to examine all statistical reporting.
4	Library Management Systems Department (LMS)
5	Library automation office, although other library units may request them.
6	Two people in systems office whose jobs consist entirely or in large part of generating reports, including statistics.
7	Library systems.
8	Staff in various departments in collaboration with library technology group, which oversees actual report development.
9	Online catalog coordinator.
10	Informational technology librarians.

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**Question 5.** Who is responsible for reports generation?

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<b>Institution</b>	<b>Response</b>
1	Library Systems Department, but will build data warehouse.
2	Systems implementation manager; one staff in technical services; circulation supervisor; some faculty do collections reports; some support staff do circulation reports.
3	Individual departments, Integrated Library Systems Department will sometimes script reports or assist with creation of MS Access reports.
4	Some generated centrally by LMS. More are generated by the units that want them, using third-party report writer. This is difficult, however, and a few experts around the libraries tend to get involved in most report generation.
5	Library automation office, although libraries' functional units provide resources to write the specs and test reports they are interested in.
6	Two people in systems office whose jobs consist entirely or in large part of generating reports, including statistics.
7	Library systems, although routine reports are generated at the department level after they are written by systems.
8	Functional committees draft functional specifications. Library technology group involved in running and scheduling. Reports using Access are run by library technology group or by skilled staff. A separate copy of the Oracle database is maintained on separate server enabling report requests by individual staff without affecting performance of production server.
9	Online cataloging coordinator, although everyone has access to the system and [can] create own reports, if they want.
10	IT librarians and almost anyone. Vendor's reports are used by most staff and faculty.

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## Communication

**Question 1.** How is communication handled between your "systems office" and/or systems staff and the libraries?

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<b>Institution</b>	<b>Response</b>
1	Systems staff is internal to library, so simply as needed via informal relationship and easily handled.
2	E-mail, Footprints database, help desk (by phone).
3	Staff Web and e-mail, phone calls for systems performance issues if required.
4	Systems office is part of the library. They communicate with rest of library using e-mail, meetings, and in person.
5	Head of library automation office and the library director report to the university's ITS. For special projects, staff work directly with information technology systems.
6	E-mail is heavily used. Systems office also communicates via its participation in the working group chairs' policy-making committee.
7	Via e-mail as needed and systems electronic discussion list.
8	E-mail. Assistant dean for library technology schedules all staff updates session two to three times per year.
9	Online catalog coordinator, who uses e-mail, phone calls, and meetings.
10	Informal—lots of e-mail and electronic discussion lists.

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**Question 2.** Who is responsible for liaison with the ILS vendor?

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<b>Institution</b>	<b>Response</b>
1	Assistant dean for digital library services and ongoing through steering committee.
2	Systems implementation manager and top administrators as appropriate.
3	Integrated library systems manager.
4	Two official contacts—the LibOne and the TechOne.
5	Library automation office and the library director in charge of automation.
6	Head of systems office.
7	Consortium responsibility.
8	Staff in library technology group.
9	Library via the online catalog coordinator.
10	Mostly informational technology, but some departments allowed to contact them, as well.

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**Question 3.** Who, in the libraries, is responsible for liaison with your "systems office" and/or systems staff?

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<b>Institution</b>	<b>Response</b>
1	Moot issue.
2	Each library or unit has a contact person who is supposed to interface with systems office. Try not to have everyone report stuff.
3	Integrated library systems and Digital Library Development Center report to the associate director of information resources management. Administration and desktop systems report to assistant director of science libraries. Also, all three groups use the services of the university computing network services and information technology. Every other month there is a joint meeting with NSIT and library systems staff.
4	The library's information technology staff do most of the communicating with university information technology on the library's behalf.
5	Head of the library automation office.
6	Head of systems office holds a dual appointment: 80 percent library; 20 percent university computing center. Part of library "systems office" staff are in the library and part are in the computing center.
7	Informally, everyone. Formally, systems reports to the university librarian and participates in steering committee and information technology deliberations.
8	Staff who are assigned to do troubleshooting, supervisors, and committee chairs.
9	Online catalog coordinator.
10	Everyone talks to them.

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# Evaluative Study of Catalog Department Web Pages

Kavita Mundle, Lisa Zhao, and Nirmala S. Bangalore

*Web page development is an important aspect of library practice, and evaluative studies can confirm further development and upgrades in the performance of Web pages. To date, there have been no published reports about Web pages of library catalog departments. So, the present study was undertaken to develop a model for the evaluation of catalog department Web pages. The present study examined the catalog department Web pages of institutions within the consortium of the Committee on Institutional Cooperation (CIC). A performance index was devised to assess the usability or workability of these Web pages based on four parameters: accessibility, design and structure, internal documentation, and external resources. The performance index for the Web pages studied revealed significant differences among them and illustrated the potential of this model for further studies of this nature.*

Today organizations and institutions of all kinds use Web sites to serve their clients and carry out their internal functions. Libraries are no exception to these trends; they use their Web sites for both their patrons and their staff. Besides libraries as a whole, individual departments within each library have started relying on their Web sites to provide users and staff with a variety of information and access to their digital library services. Technical services or catalog departments also have developed their own Web sites. However, to date, studies reporting on technical services and catalog department Web pages have been uncommon. Chressanthis and Wesley surveyed 158 technical services Web sites and observed that “some institutions use their web page like a business card . . . include[ing] content-rich resources to assist staff in performing their jobs and promote departmental efficiency.”<sup>1</sup> Harizan and Khoon described the steps that were undertaken to create the cataloging home page at Nanyang Technological University in Singapore.<sup>2</sup> These authors attempted to answer such questions as “[w]hy catalogers should create homepages, how can the pages be used to enhance their job and what are the benefits of having a home page.”<sup>3</sup>

With the growing size of department Web sites, designing, organizing, updating, and maintaining user-friendly Web sites is a challenge. Because the assessment of existing Web pages can inform future developments, the present study was undertaken to compare the catalog department Web pages of the Committee on Institutional Cooperation (CIC) member libraries in terms of their accessibility, design, structure, maintenance, and type of information provided. The study aimed to develop an evaluative model that could be used for a future larger study. The following text describes the present study in detail.

## Background

This is a comparative study of the catalog department Web sites at CIC libraries. Established in 1958, CIC is an academic consortium of thirteen major teaching and research universities in the Midwest. Among CIC’s strategic goals is to “max-

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imize the benefits of existing infrastructure such as information technologies and libraries.”<sup>4</sup> Included in the eighteen programs listed on the Web site is the Center for Library Initiatives (CLI). The CLI, established in 1994, functions as a cohesive consortial organization, guided by a vision of the information resources and services of the CIC as a seamless whole.<sup>5</sup> The CLI strives to help the thirteen research libraries at CIC member universities to advance their missions. The authors of this study selected CIC member libraries for the study group because these consortial members constitute a preselected peer group and share a common vision by virtue of membership in the CIC. Appendix A lists the CIC member libraries and the URLs of the sites studied.

To date, Web site evaluation studies have highlighted the importance of the “usability” or “workability” of the Web page, yet the volatile nature of the Web itself makes having firm standards for usability difficult. Agingu explained, “Because the Web itself is still developing and Web sites are in a constant state of development, the current literature on what makes a Web site useful is still scanty. Even though many guidelines and recommendations on what makes a good or useful Web site now abound, especially on the Web, no concrete standards have been set yet.”<sup>6</sup> A lack of concrete standards for the usability of Web sites, coupled with a desire to identify benchmarks for effective catalog Web sites, led the authors to investigate the design and maintenance of the Web sites of catalog departments of the CIC member libraries. The size of the consortium provides well-defined boundaries for an initial study such as reported here. Inevitably, the sample size is limited. Also, given the dynamic and volatile nature of the Web, this study constitutes only a snapshot in time. Hence, the data in the present study are drawn from the updates seen only during the study period.

## Literature Review

Understanding the basis of Web page development is essential for a Web page evaluation study. Guidelines for creating Web sites are widely available. One example of a comprehensive step-by-step manual is Yale University’s *Web Style Guide: Basic Design Principles for Creating Web Sites*.<sup>7</sup> Before building a Web site, the guide advises one to identify the target audience, have a statement of purpose, know one’s main objectives, and have a concise outline of the information the site will contain. These principles of Web page design have been important in comparative evaluations of Web pages.

Stover and Zink compared the design of forty higher education home pages.<sup>8</sup> In order to measure and quantify the relative quality of home pages in terms of design and organization, the authors assigned a twelve-point scale to various features. Overall mediocre scores led to the conclusion that a “lack of knowledge of hypermedia and a sketchy, emerging

literature pertaining to Web page design principles” may be partly to blame for poorly designed, incomplete, and substandard home pages.<sup>9</sup> King compared design similarities and differences in the home pages of 120 libraries in the Association of Research Libraries (ARL).<sup>10</sup> King found that “the typical ARL library home page is approximately one printed page long, and can be found from the parent institution’s main home page in one or two steps.”<sup>11</sup> Johnson researched thirty-one acquisitions Web sites.<sup>12</sup> He concluded that “even though ‘Web presence’ is considered prestigious, mounting poorly designed pages can have the opposite effect. . . . Above all else, keep your pages as simple and straightforward as possible.”<sup>13</sup> The impact of Web page design on its “usability” is thus vivid from the aforementioned studies.

To keep Web sites active and dynamic, maintaining and updating them regularly is imperative. Nielsen contended that “the usability of a Web site is more a function of how it is managed than of how good its designers are.”<sup>14</sup> As newer resources evolve and network technology and standards change, reorganizing and altering the design of any site becomes important. Garlock and Piontek suggested four ways to maintain a library Web site: update information routinely, check hyperlinks, add new or delete dead Internet links and resources, and reorganize or change the site’s design.<sup>15</sup> Having adequate resources to design and maintain Web sites is of crucial importance to the credibility of an institution.

Considerable effort has to be devoted to maintaining library Web sites. Mach and Kutzik emphasized: “In designing second and third generation library Web sites, most librarians now realize that Web site management is 80 percent people and process, and 20 percent technical issues. No matter whether a library is large or small, public or academic, special or school, it must figure out how a library Web site fits into its organizational structure and how to support it continually.”<sup>16</sup>

In the development of Web sites in general, webmasters play an integral role. The education, training, and roles of these individuals in developing and maintaining library Web sites also have been studied. Taylor surveyed webmasters of ARL libraries.<sup>17</sup> Out of eighty respondents, “just over half . . . shared their positions with others, with almost this entire group sharing it with one other person. Most (81 percent) of the respondents worked with a Web committee or team. The committees ranged in size from three to twenty-nine members, with a median of eight members.”<sup>18</sup> Whether two webmasters manage a Web site or an entire team shares responsibilities, timely maintenance of library Web sites is critical.

The importance of user-centered Web sites is a common thread running through library literature. Cockrell and Anderson studied Web usability in the context of users’ success in finding an article and commented, “The implicit message of the user-centered approach is that

each situation is unique. The design of a site is inseparable from its content, and Web designers must design for the particular clientele who will be using the site.<sup>19</sup>

## Method

The literature about Web page design and evaluation underscores the critical of design, content, structure, and maintenance as important factors in the success of a Web site. Web page evaluation criteria reported by Smith, Wyman et al., Clausen, and Rettig and LaGuardia helped the authors of the present study design their evaluation instrument.<sup>20</sup> These studies indicated that the usability or workability of a Web page is considerably affected by accessibility or connectivity, visibility of the purpose and scope, currency and updates, search capability, browsability, organization and aesthetics, interactivity, and definition of audience and links that are useful to the intended audience.

The specific queries of the present study's evaluation instrument were categorized under four major parameters: (1) accessibility, (2) design and structure, (3) internal documentation, and (4) external resources. The study instrument takes into account both public and professional workability perspectives suggested by Charles McClure in his study on evaluating federal agency Web sites.<sup>21</sup> The specific questions under each category in the study were raised to obtain well-rounded information for the individual parameter. For example, accessibility was assessed in two ways: link through direct URL and whether this page provided links to the library's other Web pages. Similarly, the queries raised to assess design and structure were intended to evaluate (besides physical appearance) the relevance of aesthetic markers such as graphics, the interactivity of the page, search capabilities, and navigational facilitation. The third study parameter, internal documentation, was added to evaluate the richness of the Web page content. The assessment of the richness of the Web page content was based on its reflection of departmental activities, organization, and availability of relevant documents such as departmental policies, procedures, and ongoing projects. The investigators also felt that the evaluation of usability of the Web page should consider professional enrichment of cataloging staff. Hence, the fourth study parameter, external resources, was included. This parameter enlists queries intended to see what additional information might be helpful for professional enrichment, including any links to professional journals, links to general reference sources such as dictionaries and encyclopedias, and links to technical services Web pages of other institutions. Finally, a performance index was devised based on the scores for each of these four study parameters to compare the catalog

department Web pages of individual institutions. The findings of the study described below have laid a foundation for a future larger evaluative study.

A template (see appendix B) for gathering data from the Web sites studied was developed and consists of the four parameters of the study: accessibility, design and structure, internal documentation, and external resources. The template is in the form of a questionnaire. Every question is answered "yes," "no," or "somewhat." The three investigators individually answered the questions for each study parameter for each Web site. Then the reviewers' individual scores were compared, differences were reconciled through discussion, and single scores were devised. This study constitutes a snapshot in time; hence the authors tested these Web sites during a two-week period, from December 2 to 13, 2002. In this period, each Web site was tested only once by each reviewer. Any subsequent updates made to the Web sites have not been taken into account.

The Web pages studied are from the thirteen libraries of the CIC consortium. Appendix A lists the institutions, the Web sites, and their URLs. In a few instances, the technical services department head or university library director was contacted to get Web access to the catalog department's Web page because the page was not accessible from the main library Web pages or by using a Web search engine. The Web pages of three CIC libraries could not be accessed due to institutional policy and password restrictions. These are the University of Iowa, the University of Michigan, and Michigan State University.

For multicampus institutions, only the main campus library Web sites with corresponding catalog department or technical services Web sites were considered. The study aimed at evaluating the Web site of the catalog department. In those institutions that did not have a separate Web site for the catalog department, the technical services Web pages were evaluated with respect to information related to cataloging.

Results were scored on a rating scale. "No" was scored as 1, "yes" as 2 in all study parameters. In addition, a score of 1.5 was used in the case of design and structure to denote a somewhat indeterminate response between "yes" and "no" for questions like "Are the graphics adding any relevancy to the page?" A score of 1.5 also was used in the case of accessibility when (instead of a dedicated catalog department Web page) the pertinent departmental information was observed indirectly as a part of an organization's broader Web pages. Initially, in every study parameter, a relative proportion of responses were determined by using the normalized percentages. Subsequently, for every participating institution, an average score was calculated for a specific study parameter based on the response to various questions asked. These average scores are shown in table 1.

Statistical data analysis was performed to assess the validity of the study instrument and to understand interrelationships among individual study parameters. First, correlation between two study parameters across the group of ten institutions was assessed using the Pearson correlation test. Subsequently, to test the workability or usability of individual institutional Web pages with objectivity, a performance index was devised, which is the mean of scores for the four study parameters as shown in table 1. The performance index varied among different institutions. In order to determine if this variability was significant, Friedman's chi-square test was used. This test simultaneously compares mean values of multiple groups for the significance of variability. Once the overall differences in the performance indexes were found significant, individual institutions were compared with the lowest scoring institution E. A paired sample *t* test was employed for this purpose. A "*P* value" of <0.05 was considered significant in all the statistical applications.

## Results

The present study evaluated catalog department Web sites of CIC institutions based on the parameters described in the method section. The accessibility parameter forms the basis for the analysis of results. Although the study sought to assess Web pages of the thirteen CIC institutions, three of the Web pages could not be accessed. Hence, no further analysis was possible in these three specific cases. Only in the case of the accessibility parameter were all thirteen Web pages taken into consideration. For the other study parameters (design and structure, internal documentation, and external resources), analysis was possible in ten cases. In order to normalize the responses and assess the relative proportion of different response types in individual categories, percentage responses were plotted. See figures 1–4.

### Analysis of Individual Study Parameters

**Table 1.** Comparative profile of scores for four study parameters in different institutions

Study Parameter	Institution										Median Scores
	A	B	C	D	E	F	G	H	I	J	
Accessibility	2	1.8	2	2	1.3	1.6	1.6	1.9	2	2	1.95
Design and Structure	1.7	1.6	1.2	1.7	1.4	1.6	1.4	1.4	1.4	1.4	1.4
Internal Documentation	1.6	1.6	1.6	1.9	1.3	1.6	1.5	1.5	1.5	1.4	1.55
External Resources	1.8	1.6	1.4	2	1.2	1	1.2	1.4	1.6	1	1.4
<b>Performance Index</b>	<b>1.775</b>	<b>1.65</b>	<b>1.55</b>	<b>1.9</b>	<b>1.3</b>	<b>1.45</b>	<b>1.425</b>	<b>1.55</b>	<b>1.625</b>	<b>1.45</b>	<b>1.55</b>
<i>P</i> value	<b>0.019</b>	<b>0.012</b>	NS	<b>0.012</b>	NA	NS	NS	NS	NS	NS	NS

Key: Performance Index = mean of 4 study parameters; *P* value = statistical significance of difference in mean performance index of other institutions versus that of institution E (the lowest scoring institution); NS = non-significant; NA = not applicable.

### Accessibility

As can be seen from the bar diagram in figure 1, just over 75 percent (9 of 13) of the Web pages provide access to outside users. Ninety percent (11 of 13) of the cases indicated that the catalog department page is linked to the main library Web page. However, it was found that the converse may not be necessarily true. Instead of having a separate page for the catalog department, slightly more than 30 percent (4 of 13) of the libraries have opted to have a centralized page, which serves as a consolidated Web page for the entire technical services department.

### Design and Structure

The majority of the Web pages are seen to be uniformly designed with respect to their background color and the information given in the header and footer (each Web page was checked three levels deep starting with the front page). One of the striking features seen is that in 90 percent (9 of 10) of the cases, the Web pages do not have any relevant graphics, which may or may not describe the theme of the page (figure 2). As a result, the Web pages appear to be very simple. Although graphics are not vital to the usability of the Web site, "[t]he design, or the layout of the Web site, including graphics and text, as well as links, is important to the effective delivery and use of any Web-based information, even though it does not affect the quality of information per se."<sup>22</sup> Furthermore, 70 percent (7 of 10) of the cases did not have any search capability function, which could lead users into easily accessing the desired information. Except for one, all the pages had reportedly been updated within the last two to four months. Of ten Web pages, seven were designed by the department staff, two were designed by the library systems staff, and in one instance the researchers could not determine who designed the page. This query being qualitative, it could not be scored and plotted in figure 2.

### Internal Documentation

Individual names and titles, phone numbers, and e-mail addresses were available consistently on all the Web pages examined. Mailing address information was not given in the majority of the cases, but it was alternatively given at the bottom portion of the page on the catalog department/technical services Web page. Although links to the "Department Newsletter" were not found on any of the catalog department Web pages, this information was seen on the main technical services Web page in many cases. As shown in figure 3, in 80 percent (8 of 10) of the cases, local policies and procedures information was furnished in great detail. This type of information was arranged either by format, by subject, or alphabetically by subject or title. Moreover, links to various cataloging tools for catalogers' consultation were seen prominently on 90 percent (9 of 10) of Web pages. Among the more frequently linked cataloging tools were Library of Congress (LC) cataloging tools, National Library of Medicine (NLM) cataloging tools, Online Computer Library Center (OCLC), MACHine-Readable Cataloging (MARC), Cooperative Online Serials program (CONSER), Monographic Bibliographic Record Component (BIBCO), and Name Authority Component (NACO) of the Program for Cooperative Cataloging (PCC).

### External Resources

A remarkable disparity was found in providing links to external information pertinent to catalogers, which may have significant bearing on the enhancement of their professional expertise, academic research, and day-to-day activities (figure 4). In 60 percent (6 of 10) of the cases, links were provided to reference tools like dictionaries and encyclopedias. Only 30 percent (3 of 10) of the pages provided links

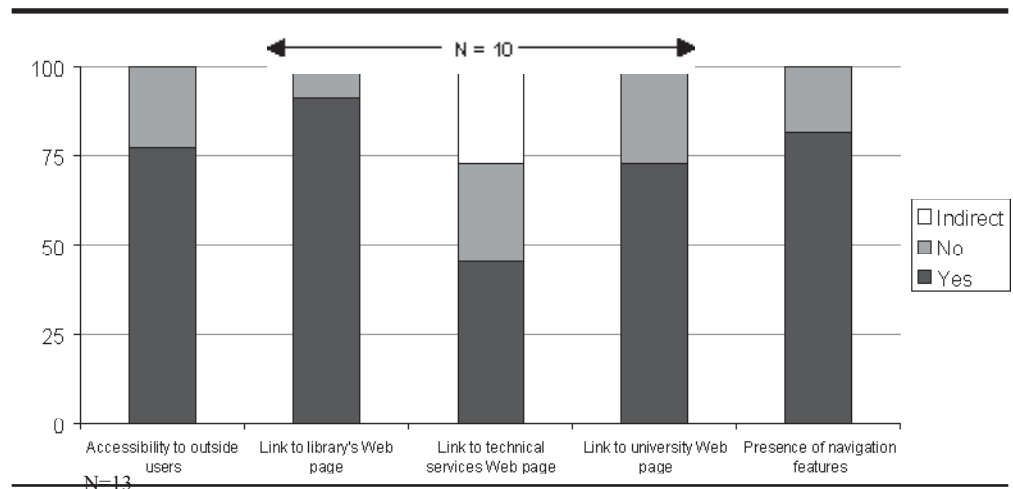


Figure 1. Accessibility

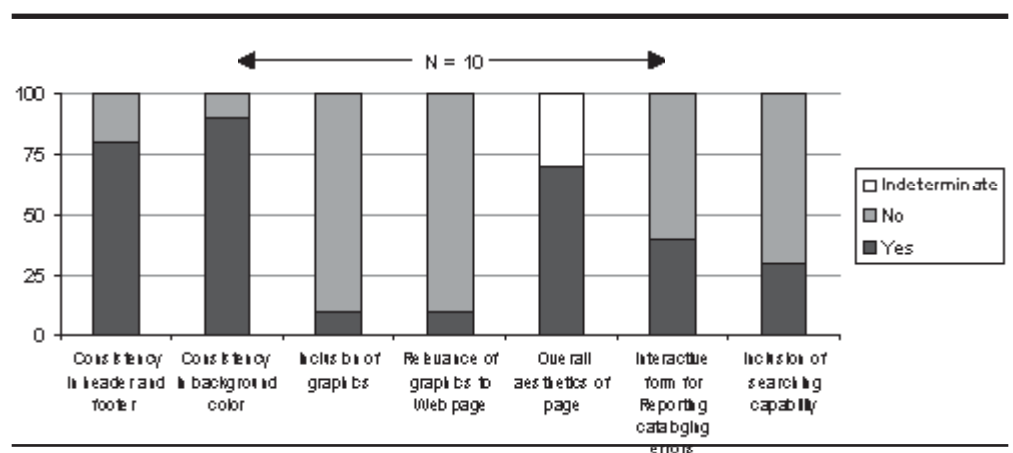


Figure 2. Design and structure

to professional journals and literature. Links to professional organizations related to cataloging were seldom encountered (only 20 percent, or 2 of 10) of the Web pages provided such useful links). Furthermore, links to electronic discussion lists were uncommon; 40 percent (4 of 10) of the pages were linked to very helpful and practical electronic discussion lists, like AUTOCAT.<sup>23</sup>

### Assessment of Interrelationship of the Study Parameters

Table 1 shows the average scores for individual study parameters in different institutions. A significant direct correlation was observed between the scores across different institutions for the internal documentation and external resources study parameters (correlation coefficient " $r$ "=0.697,  $P \leq 0.025$ ,  $n=10$ ). Moreover, the score for accessibility was significantly higher than other parameters ( $P \leq 0.001$ ).

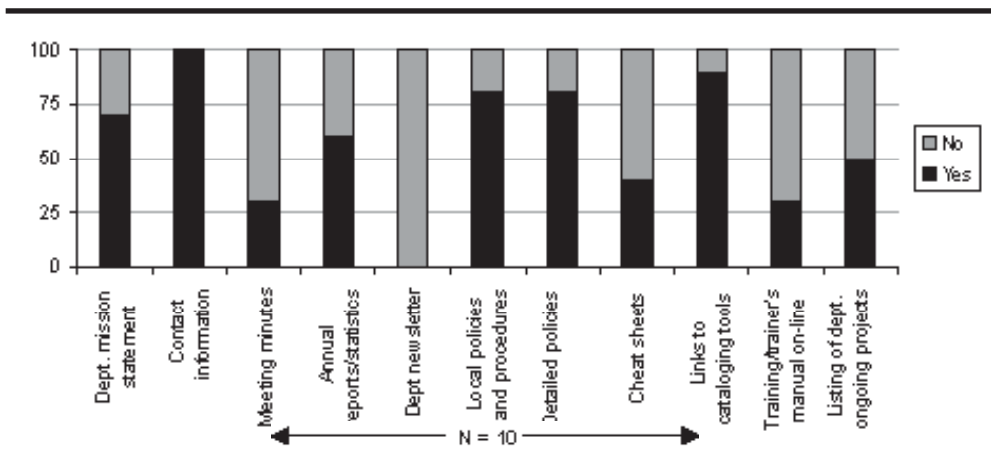


Figure 3. Internal documentation

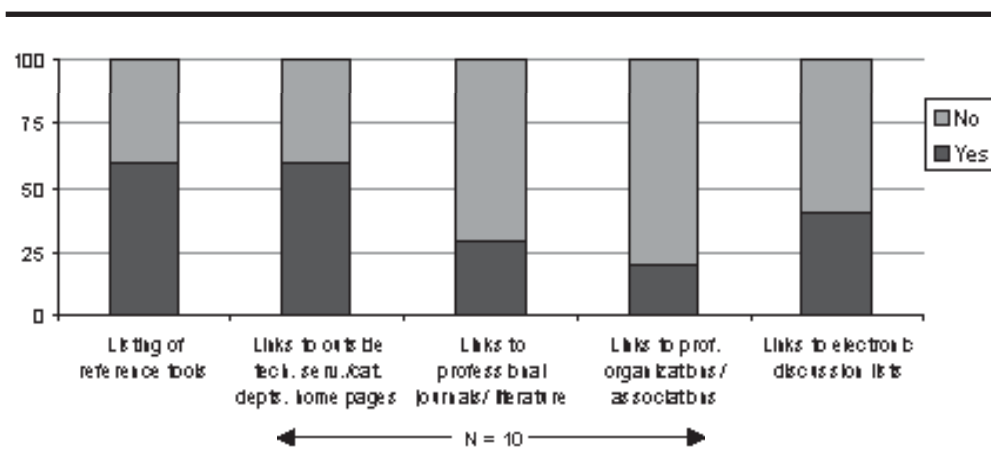


Figure 4. External resources

### Determining the Performance Index

As described in the methodology, a performance index was calculated and is presented in table 1. The Friedman's test revealed a significant difference in the index for individual institutions. A subsequent comparison of different institutions revealed that the three top-ranking institutions D, A, and B (respectively) differed significantly from the lowest index of institution E ( $P \leq 0.012$ ,  $P \leq 0.019$ ,  $P \leq 0.012$  respectively). The other institutions' indexes were very close to the median performance index of 1.55.

### Discussion

The present study of the catalog department Web sites highlights the significance of a multiparametric assessment, development of an objective performance index, and recognition of unique features that enhance the performance

index. The following discussion provides details of these salient contributions of this study.

At the turn of the millennium, electronic media have emerged as the major administrative tool in almost every walk of life. The cataloging facet of library operations is no exception. As is the case with any other electronic source of information, catalog department Web pages should undergo continuous, thorough assessment, amendment, and advancement. No one has studied such pages previously, and this study has aimed to fill that gap in the literature. The authors examined the catalog department Web pages of thirteen CIC member libraries. The overall success of the Web page was established as the performance index. A mean score of the four study parameters chosen in this study comprised the performance index of each Web page exam-

ined.

The success or performance of a Web site is determined by its effectiveness, efficiency, and user satisfaction. In assessing Web sites in general, therefore, many authors have used the term "usability" to measure the overall effectiveness, efficiency, and user satisfaction encompassing the accessibility of a Web page, its overall design, ease of use, organization and usefulness of its content, use of graphics, good navigation, and provision of valuable links that furnish necessary ease in using the specific Web site.<sup>24</sup> Usability is, therefore, inclusive of all the parameters used in the study. Some of the previous reports, however, use the term "usability" in a very restrictive sense reflecting navigational ease only.<sup>25</sup> In this study, therefore, to avoid such confusions the authors devised an objective measure, termed "performance index," that denotes effectiveness, efficiency, and satisfaction of the intended users or audience.

The performance of the majority of the Web sites was

close to the median. Three Web sites performed exceptionally well (institutions D, A, B in the order of their ranking) and one Web site (institution E) showed below average performance. Web site D is the only site that makes use of graphics, which definitely has enhanced the aesthetic value of the page. Surprisingly, no other Web site uses any graphics. As every institution is administratively different, certain norms and guidelines are set for the creation of a Web page by the parent organization, in this case, the university and the library. The fact that Web pages with graphics take longer to load could be the reason for not including any graphics on the Web page in most cases. Second, no link to the "Department Newsletter" was seen on any of the Web sites, including the highest performing institution D. As the catalog department is a section of technical services in the majority of libraries, the researchers found that such a link existed on the main technical services Web page rather than on the catalog department Web page.

The top ranking Web sites (D, A, and B) differ from each other in some aspects, while each of them has some unique features. Web site D scored high on all four study parameters, and among its most salient features are:

- Use of graphics
- Overall appeal of the page
- Uniformity in the design
- Addition of interactive forms for reporting cataloging errors
- Listing of ongoing projects in the department
- Good navigation features
- Availability of a training manual online

The absence of a search function capability for searching the site was the only negative point noted. In the case of Web site A, less uniformity in the design, inconsistency in the usage of header and footer information, absence of a separate mission statement on the catalog department, and some outdated and broken links in the external resources parameter lowered the performance. This Web site did have a search function capability.

Web site B ranks third because it did not have a search function capability on the catalog department page, and it was not linked to the technical services Web page. However, this page had links to professional journals and a listing of ongoing projects in the cataloging department.

The lowest scoring Web site (E), on the other hand, scored poorly on all study parameters. There was only one page for the entire technical services department with no separate pages for sections or divisions. The page appeared to be focusing more on cataloging services than other possible sections of technical services. Lack of information on who designed the page and when the page was last updated; absence of any local policies, procedures, or practices for the department; poor navigation features; and absence of links to

professional journals and literature contributed to the poor rating of this Web site. Table 2 presents a list of features on the catalog department Web sites of CIC member libraries.

An interesting finding highlighted in table 1 should be noted. A direct correlation was found between the internal documentation and external resources study parameters. Statistically, such a correlation usually is seen because the two parameters either complement or mirror each other. In this case, these two parameters complement each other. Information about interdepartmental activities such as ongoing projects in the department, current local policies and procedures for handling various kinds of materials, or having a trainer's manual online brings awareness of day-to-day activities and enhances job efficiency of catalogers. Complementary to this, as depicted in the research tool, questions included under external resources sought diverse information ranging from presence or absence of links to reference tools like encyclopedias or dictionaries, cataloging-related professional literature, and professional organizations. These questions provide information regarding professional enrichment of catalogers. Thus, the internal documentation and external resources study parameters complement each other and provide catalogers with excellent information that enhances their job efficiency and enriches their professional competency.

The content of a Web site usually relies heavily on the nature of its intended audience. In the case of catalog department Web sites, the primary user is a cataloger, a very specialized audience. To serve this group of users, this study breaks up the content into two parameters, internal documentation and external resources. These two complementary parameters are examined independently due to the specific and different purposes they serve of helping in day-to-day cataloging job efficiency or functionality and professional enrichment, respectively. In contrast to this study, some of the earlier reports assessing primarily library Web pages discussed queries similar to those in the internal documentation and external resources parameters used in the present study under a common heading of "content."<sup>26</sup> This may be due to the difference in the intended audience, which, in the case of library Web pages, is more general and less specialized as opposed to catalogers, who represent a more specialized and narrow user group. Furthermore, it is quite logical that the institutions that scored highly in the internal documentation category also scored highly in the external resources category. The congruence emphasizes the institutional attention to professional development of catalogers. The correspondence between external resources and internal documentation parameters that forms the basis for a significant correlation observed between the two parameters needs to be explored further in a later, larger study.

Among the four study parameters examined, the median score for accessibility was significantly higher when com-

**Table 2.** Profile of features present on all versus some catalog department Web sites**Features Present on All Web Sites Studied**

Link to library Web page  
 Contact information  
 Local policies and procedures of the catalog department  
 Presence of navigation features  
 Consistency in the use of background color for the Web page

**Features Present on Some Web Sites Studied**

Use of relevant graphics  
 Search function capability  
 Links to professional organizations and literature  
 Links to cataloging tools  
 Interactive reporting of cataloging errors

pared to others. This was true for every individual institution except one and suggests that accessibility is the most well-addressed issue in designing the catalog department Web page. However, in many cases, not having direct access to the catalog department Web page through the main library Web page posed difficulties in their direct access. A special effort made in the present study to access such Web pages through a professional contact prevented a demerit in accessibility in the respective cases. In three institutions, access was totally denied. Such restriction on direct access to the catalog department Web pages may stem from specific institutional policies.

### Conclusion and Future Research

The library is not a quiet, inert warehouse of collections. Rather, it has to function as a lively, dynamic institution providing information and services to on-site as well as remote users. This is especially true of academic libraries, which are actively engaged in teaching, service, and research in partnership with faculty on campus and scholars everywhere. Catalogers, who work behind the scenes (rather than at visible public service desks) to create and maintain databases for the public, need to have accurate, up-to-date, and reliable information regarding their specialization. Setting up and maintaining relevant information online for catalogers via Web sites is one key to libraries' achieving and maintaining this position.

A catalog department Web site is, by its very nature, geared to a particular, narrow, specialized audience. It is meant to be used by catalogers on a day-to-day, ongoing basis. In one neat package, it must function as a reference tool, a procedures manual, a directory of expertise, and a link to resources both within and outside the department, library, and university. Library and information science literature has stressed the importance of credibility and reliability among other criteria for Web site evaluation. Rettig and LaGuardia emphasize, "Every good Web resource should immediately identify itself in terms of where it comes from to establish its credibility and reliability."<sup>27</sup> Catalogers have proved that they have the requisite credentials for being credible and reliable through the wealth of bibliographic, authority, and holdings data they create

and maintain.

Do catalog department Web sites exhibit this credibility and reliability? This study has shown that, as evidenced in CIC catalog department Web sites, many libraries have made a good beginning. While acknowledging that technical services Web sites may be restricted from public view or access, based on this study, the authors recommend that a catalog department Web site should have:

- Access through the library Web site (when permitted)
- Intuitive navigational features
- Relevant and updated content through internal documentation (including contact information and local policies and procedures)
- Links to external resources (including cataloging tools and professional organizations and literature)

The following factors would enhance the usability and appeal of a catalog department Web site:

- Search function capability
- Interactive reporting of cataloging errors
- Uniformity in design and appearance of Web pages within the site

The authors intend to follow this research with an expanded study covering member institutions of the Association for Research Libraries. A larger sample, using this study as a prototype, likely will yield useful information that can benefit the profession in general and catalogers in particular.

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## Appendix A CIC Consortium Libraries

(All sites accessed June 25, 2003.)

- University of Chicago Library. Cataloging Department. [www.lib.uchicago.edu/staffweb/depts/cat](http://www.lib.uchicago.edu/staffweb/depts/cat).
- University of Illinois at Chicago Library. Catalog Department. [www.uic.edu/depts/lib/staff/catalog](http://www.uic.edu/depts/lib/staff/catalog).
- University of Illinois at Urbana-Champaign Library. Cataloging Policies and Procedures at UIUC. [www.library.uiuc.edu/techserv/cpac/cpacmain.htm](http://www.library.uiuc.edu/techserv/cpac/cpacmain.htm).
- Indiana University Bloomington Libraries. Cataloging Division. [www.indiana.edu/~libtserv/staff/cat/index.html](http://www.indiana.edu/~libtserv/staff/cat/index.html).
- University of Minnesota Libraries, Twin Cities. Materials Acquisition and Control Homepage. <http://staff.lib.umn.edu/mac/index.html>.
- Northwestern University Library. Catalog Department. <http://staffweb.library.northwestern.edu/catalog>.
- The Ohio State University Libraries. Cataloging Department. [www.lib.ohio-state.edu/catweb](http://www.lib.ohio-state.edu/catweb).
- Pennsylvania State University Libraries. Cataloging Services. [www.libraries.psu.edu/tas/cataloging](http://www.libraries.psu.edu/tas/cataloging).
- Purdue University Libraries. Technical Services Department. [www.lib.purdue.edu/techservices](http://www.lib.purdue.edu/techservices).
- University of Wisconsin–Madison Library. Central Technical Services. [www.library.wisc.edu:4000/dept/cts](http://www.library.wisc.edu:4000/dept/cts).

The following three institutions restricted access to staff members and, therefore, are not represented in the study.

- University of Iowa
- University of Michigan
- Michigan State University



## Appendix B Template for Evaluating Cataloging Department Web Pages

### Accessibility

Can outside users access the Web page?		Yes	No
Is the page linked to library's Web page?		Yes	No
Is the page linked to technical services Web page?		Yes	No
Is the page linked to university Web page?		Yes	No

### Design and Structure

Is the page uniformly designed?			
Does each page have the same header and footer?		Yes	No
Does each page have the same background color?		Yes	No
Does it have any graphics?		Yes	No
Are the graphics adding any relevancy to the page?	Yes	Somewhat	No
Do fonts and background color add aesthetics to the overall design of the page?	Yes	Somewhat	No
Who designed the Web page?			
Dept.			
Lib.			
Outside agency			
Can't decide			
Staff systems			
When was it last updated?			
Does the page have any interactive form for reporting cataloging errors?		Yes	No
Does it have a searching capability?		Yes	No
Are any navigation features present?		Yes	No

### Internal Documentation

Does it include:			
Description/mission statement of the department?		Yes	No
Contact information?			
E-mail			
Phone #			
Fax #			
Mailing address			
Meeting minutes?		Yes	No
Annual reports/statistics?		Yes	No
Department newsletter?		Yes	No
Does the page have local policies and procedures?		Yes	No
If yes, proceed further			
How detailed are the policies laid out?		Detailed	Brief
How are they organized?			
Format			
Subject			
Alphabetical			

Are any “cheat sheets” provided?	Yes	No
Does it provide links to cataloging tools such as: OCLC LC NLM MeSH DDC and/or any others_____		
Does it have training/trainer’s manual online?	Yes	No
Are ongoing projects in the department listed?	Yes	No

#### External Resources

Are there:		
Any reference tools listed?	Yes	No
Any links to outside technical services/cataloging depts. home pages?	Yes	No
Links to professional journals/literature?	Yes	No
Links to professional organizations/ associations?	Yes	No
Links to electronic discussion lists?	Yes	No

# Cataloging and Metadata Education in North American LIS Programs

Ingrid Hsieh-Yee

*This paper presents findings of a survey on the state of cataloging and metadata education in ALA-accredited library and information science programs in North America. The survey was conducted in response to Action Item 5.1 of the "Bibliographic Control of Web Resources: A Library of Congress Action Plan," which focuses on providing metadata education to new LIS professionals.<sup>1</sup> The study found LIS programs increased their reliance on introductory courses to cover cataloging and metadata, but fewer programs than before had a cataloging course requirement. The knowledge of cataloging delivered in introductory courses was basic, and the coverage of metadata was limited to an overview. Cataloging courses showed similarity in coverage and practice and focused on print materials. Few cataloging educators provided exercises in metadata record creation using non-AACR standards. Advanced cataloging courses provided in-depth coverage of subject cataloging and the cataloging of nonbook resources, but offered very limited coverage of metadata. Few programs offered full courses on metadata, and even fewer offered advanced metadata courses. Metadata topics were well integrated into LIS curricula, but coverage of metadata courses varied from program to program, depending on the interests of instructors. Educators were forward-looking and agreed on the inclusion of specific knowledge and skills in metadata instruction. A series of actions were proposed to assist educators in providing students with competencies in cataloging and metadata.*

Organization of information in the twenty-first century has become more urgent and challenging because of the rapid increase of information on the Web, a strong interest in digital resources, and the emergence of new formats. The field has also become more competitive because many nonlibrary information professionals and other professionals who used to be end users are getting involved in information organization, and many of them use metadata schemas developed for a specific domain or discipline. In addition, machines have played greater roles in organizing information in the networked environment. For instance, the Open Archive Initiative's Protocol for Metadata Harvesting (OAI-PMH) is designed to harvest metadata from various sources and enable users to search distributed repositories through one single interface.<sup>2</sup> In the digital era, the options for information organization have expanded, and competencies in cataloging and metadata have become critical for library information professionals to be effective and competitive.

Catalogers probably experience the challenges of the digital age more directly than other library professionals do. The trend in integrating Web resources into collections means catalogers need to master the cataloging of digital and integrating resources. They also need to learn more about nonli-

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brary-based metadata schemas because many individuals and corporate bodies are interested in using such schemas to bring their resources onto the Web. As a result of such interests, more and more catalogers find themselves involved in digital projects. Furthermore, new developments in metadata have resulted in more interaction between online catalogs and other metadata repositories.<sup>3</sup> Libraries have integrated data from a variety of resources for users, and knowledge of metadata integration and management has become more important than ever.<sup>4</sup>

It is against this background that the Library of Congress held the Bicentennial Conference on Bibliographic Control for the New Millennium in November 2000. The intent was to investigate options and tools for controlling electronic and digital resources. Many action items emerged from the conference. Action Item 5.1 is concerned with providing students with core competencies in technical services and management skills, and with producing creative and resourceful catalogers. Library information professionals' competencies in metadata is an area of particular concern, and the action item sets out to promote "the understanding and use of metadata standards for describing and managing electronic and digital resources, with the goal of enabling greater participation of new LIS professionals in the development and refinement of metadata standards used both within and outside libraries."<sup>5</sup>

In the process of responding to this action item, the author conducted a survey of ALA-accredited library and information science (LIS) programs in North America to understand the extent of cataloging and metadata education. This paper presents the findings and describes a series of proposed actions based on the findings to help prepare catalogers for the control of information resources in the digital era.

## Literature Review

Many practitioners and educators have investigated cataloging education. They analyzed course offerings, examined course contents, discussed trends, and described teaching philosophy and strategies.<sup>6</sup> They also identified areas of concerns. MacLeod and Callahan surveyed employers and found cataloging education inadequate for preparing students for cataloging positions.<sup>7</sup> Vellucci and Spillane noted reduced emphasis on cataloging in LIS programs.<sup>8</sup> In a paper prepared after the American Library Association Congress on Professional Education, Hill and Intner described the evolution of cataloging to knowledge management and expressed concern over LIS programs' neglect of cataloging education.<sup>9</sup> Gorman deplored some LIS educators' move to replace cataloging with metadata.<sup>10</sup> Intner expressed continuing concern over the inadequate treatment of nonprint

materials in cataloging courses.<sup>11</sup>

Over the years, many practitioners and educators have recommended topics for cataloging education. In a study by MacLeod and Callahan, educators reported that they considered the needs of practitioners when they developed courses, but practitioners felt their concerns were not heard.<sup>12</sup> In spite of such differences in perspective, two recent studies found educators and practitioners agreed on many cataloging competencies for entry-level academic librarians.<sup>13</sup> Professional associations also provided guidance on professional competencies. In 1995, the Association for Library Collections and Technical Services (ALCTS) Educational Policy Statement offered a comprehensive list of competencies for technical services functions, including cataloging.<sup>14</sup> The ALA Task Force of Core Competencies presented a draft document in 2002 reiterating the importance of cataloging to library services and the need for competencies in information organization.<sup>15</sup>

As a specialty, cataloging has been affected heavily by technology and economy.<sup>16</sup> After reviewing twenty-five years of cataloging education, Taylor concluded technologies had increased the content burden of cataloging courses.<sup>17</sup> Frost and Hsieh-Yee described the impact of the Internet on cataloging courses and the need for cataloging courses to evolve.<sup>18</sup> Interests in metadata led to a Delphi study on metadata's implications for LIS curricula, reports on metadata coverage, a discussion on how to integrate metadata into LIS curricula, and an assessment of metadata education.<sup>19</sup>

Interestingly enough, technologies and the need to organize digital resources did not seem to result in greater emphasis on cataloging education. Vellucci found 63 percent of the schools examined required cataloging.<sup>20</sup> Spillane reported 55 percent, Joudrey found 48 percent, and Saye found only one out of the top ten programs rated by *U.S. News and World Report* requiring cataloging.<sup>21</sup> Educators and practitioners alike are concerned about the preparation of future catalogers, and a recent volume of *Cataloging and Classification Quarterly*, edited by Janet Swan Hill, was devoted to education for cataloging and the organization of information.<sup>22</sup> The volume covers a wide range of issues related to cataloging instruction, including opinions on issues that have challenged cataloging instruction, the information environment, impact of the information environment and needed changes in cataloging curricula, and alternatives for delivering cataloging instruction. As a whole, the literature on cataloging and metadata education provides helpful background, but little is known about LIS programs' coverage of cataloging and metadata issues. As a result, a survey was conducted to fill this gap.

## Study Objectives

The objectives of the study were to understand the coverage of cataloging and metadata in LIS programs in North America and to collect the views of faculty members on how to provide students with competencies in cataloging and metadata in order for them to be effective and competitive.

## Method

A survey instrument was designed and informally pretested for requirements. The final version consisted of three parts: Part A focused on coverage of cataloging, Part B on metadata coverage, and Part C on faculty opinions on cataloging and metadata education. Directors of 52 ALA-accredited LIS programs in North America were invited to name a few faculty members who could speak to their programs' coverage of cataloging and metadata to participate in the survey. Forty-seven directors responded, resulting in a response rate of 90 percent. Four programs had 2 faculty members responding to the survey, so the total number of usable responses was 51. The survey was conducted through e-mail attachment from April to May 2002. The survey instrument is not included in this article because of its length. Interested readers may contact the author for a copy of the study instrument.

## Findings and Discussion

### Coverage of Cataloging

Responses from 51 educators in 47 LIS programs were compared with findings of three previous studies to identify trends in cataloging education. Vellucci examined 156 courses from 52 schools, Spillane analyzed 221 courses from 56 schools, and Joudrey reviewed 199 courses from 48 schools.<sup>23</sup> The difference between the latest survey and these studies is that data were provided by educators instead of being extracted from course syllabi or program catalogs.

#### Increased Reliance on Introductory Courses

The number of programs covering cataloging concepts in introductory courses has increased steadily (table 1). Such increase becomes even more impressive when course requirement is factored into the analysis. The 1997 study found 38 percent of the programs offered an introductory course that covered cataloging topics. By 2002, 79 percent of the programs studied not only offered such a course but also required it. This suggests an increased appreciation for cataloging. Educators reported a total of 44 introductory courses. These courses fell into several categories, with 68 percent of the courses focusing on the organization of information or knowledge (table 2).

This heavy reliance on required introductory courses to cover cataloging means more students were exposed to

cataloging concepts. Topics covered in these courses suggest that educators introduced many aspects of cataloging, such as bibliographic control, ISBD, descriptive cataloging, MARC, authority control, and subject cataloging, to give their students an overview of cataloging.

The coverage of metadata topics followed a similar pattern (table 3), with 34 (72 percent) of the programs surveyed covering metadata in their required introductory courses.

Educators in 34 schools reported a total of 40 introductory courses in which metadata was covered, and 29 of the courses were included in the 44 introductory courses that covered cataloging topics. Analysis of course titles revealed that most programs relied on a required course on the organization of information or knowledge to cover metadata topics (table 4).

What these data suggest is a trend in introducing cataloging and metadata concepts in a required course so that all students were exposed to the principles and processes of information organization. It should be pointed out, however, that introductory courses usually covered many topics and often did not provide as much cataloging instruction as courses devoted to cataloging. This problem became obvious when topics were analyzed.

#### Cataloging and Metadata Topics in the Introductory Courses

Data show that topics covered in these introductory courses varied from course to course. Preliminary analysis found a large number of cataloging topics, and topics in eight areas received more coverage than others did. The eight areas are (1) subject cataloging (including subject analysis, controlled vocabulary, subject headings, classification schemes, thesauruses), (2) descriptive cataloging, (3) MARC and encoding standards, (4) authority control, (5) metadata (including overview, specific schemas, crosswalks, and potential), (6) principles and purposes of catalog and cataloging, (7) bibliographic records, and (8) bibliographic utilities. Only three educators said they discussed the relationship between cataloging and metadata, and two educators said they related cataloging to other information organization methods.

Metadata topics covered in the introductory courses also varied from school to school. Three topics (metadata schemas, metadata overview, and encoding schemes) were covered more often than others were. Only one educator discussed the relationship between cataloging and metadata.

#### Fewer Programs Requiring Cataloging Courses

The reliance on required introductory courses to cover cataloging topics becomes an issue of concern in light of the statistics on cataloging courses. The percentage of programs offering cataloging courses remained high (table 5); however, the number of programs requiring

such courses showed a downward trend, with slightly over half of the programs surveyed requiring a cataloging course and only 57 percent of the programs with cataloging courses making it a requirement. Data since the 1980s confirm such a trend.<sup>24</sup> Educators and practitioners have lamented the situation and expressed concerns that while the need for graduates with knowledge and skills in cataloging has increased, fewer and fewer programs have required cataloging.<sup>25</sup>

Comments from educators in the latest study shed some light on the real picture of requirement. Nine educators indicated that although cataloging was not required in their programs, the basics of cataloging were required in one of their introductory courses, such as "Organization of Information" or "Information Storage and Retrieval." As a result, students did receive basic education on cataloging. Five educators explained that cataloging was required only of students in a particular track of study, such as school media or information organization. Four educators reported that although cataloging was not required, a large number of students recognized its importance and took the course. These comments show that many educators are aware of the importance of cataloging education, but the concern remains that the lack of requirement of cataloging probably has resulted in fewer students graduating with sufficient preparation for cataloging positions.

#### Similar Coverage of Cataloging Courses

The content of cataloging courses remains fairly similar across programs. Topics in three areas were covered (table 6), and principles of cataloging and the catalog, authority control, descriptive cataloging, and subject cataloging were taught at most programs. Educators provided twenty-four additional topics: eleven of them were related to technical details of cataloging such as shelflists, five were on metadata issues such as crosswalks, three on management, three on social and ethical aspects of knowledge organization, and two on formats of resources.

#### Lack of Coverage of Nonprint Resources

Data also reveal that most courses focused on the cataloging of print resources, with 61 percent reporting coverage of electronic resources and 51 percent covering nonprint, nonelectronic resources. Park found 7 of the 45 schools analyzed covered Internet cataloging, while Joudrey reported only 5 of 54 schools did that.<sup>26</sup> Intner expressed concern over the cataloging of nonprint resources. Survey data seem to justify such concerns.<sup>27</sup>

#### Lack of Coverage of Metadata Topics in Cataloging Courses

**Table 1.** Introductory courses covering cataloging

Study	Courses	Percentage	Required	Percentage
Vellucci (1997) N=52	20	38	20	38
Spillane (1999) N=56	15	27	NA	NA
Joudrey (2002) N=48	26	54	22	46
Hsieh-Yee (2002) N=47	37	79	37	79

**Table 2.** Introductory courses covering cataloging

Course Title	Org. of Info./ Know.	Bib. Control	Storage and Retrieval	Cat. and Class.	Tech. Services	Total Number
Number	30	7	4	1	2	44

**Table 3.** Courses covering metadata

	Schools (N=47)	Percentage
Req. Intro	34	72
Metadata	15	32
Advanced Metadata	9	19

**Table 4.** Introductory courses covering metadata

Course Title	Org. of Info./ Know.	Storage and Retrieval	Cat. and Control	Other	Bib. Control	Total
Number	29	3	3	3	2	40

Table 6 also reveals that while 71 percent of educators provided an overview of metadata, slightly more than 50 percent of them discussed the relationship between cataloging and metadata, or the relationship between cataloging and other information organization methods such as indexing or abstraction. Similarly, only 53 percent of the educators covered the potential of metadata for information organization. Three additional topics on metadata were reported by educators, including CORC (OCLC's Cooperative Online Resource Catalog research project), Dublin Core, and crosswalk between Dublin Core and MARC. It seems that many educators covered metadata in cataloging courses, but only the most general topic, metadata overview, was discussed.

#### Hands-On Practice in Cataloging Courses

The issue of theory and practice in cataloging has been debated for several decades. Lubetzky stressed that cataloging should not be considered "a how-to-do-it routine outlined in so many rules," and Intner pointed out that cataloging should not be treated as a rote, mechanical process.<sup>28</sup> The latest

survey found that educators indeed offered a wide range of activities to give students practical experience (table 7).

Creation of bibliographic records by AACR and in MARC format topped the list, reflecting educators' objective for students to create records.

Searching, however, did not receive as much attention. Furthermore, fewer than 30 percent of the educators included exercises for students to create metadata records using non-AACR schemas or making use of CORC's searching and record creation features. In addition, educators named forty-seven activities for hands-on practice, most of them related to subject cataloging activities such as assigning classification numbers and subject headings. Record editing, searching information systems, experience with nonprint formats, policy writing, and indexing were the other hands-on practice students received.

#### Offering of Advanced Cataloging

The number of programs offering advanced cataloging courses has remained stable, with the latest figure at 72 percent (table 8). Topics covered in these courses reflected a focused approach among educators. Table 9 presents cataloging topics covered, and table 10 presents metadata topics covered in such courses. It is clear that educators provided in-depth coverage of topics related to subject cataloging, and many of them focused on the cataloging of nonbook resources; but few educators dealt with management issues or metadata topics. Among the metadata schemas discussed, Dublin Core was clearly the more popular one, reported by 56 percent of the educators.

#### Coverage of Metadata

While it is encouraging that metadata topics were covered in required introductory courses, the number of courses devoted mainly to metadata was small, with only 15 of the 47 (32 percent) programs surveyed offering such courses, and only 9 of the 47 (19 percent) programs offering advanced metadata courses (table 3). In-depth coverage of metadata in LIS programs seems to have just begun.

#### Lack of Consensus in Coverage of Metadata

Many metadata topics were included in introductory courses. Most educators covered metadata schemas, metadata overview, and encoding standards such as MARC and

**Table 5.** Offerings of cataloging courses

Study	No. of Schools Offering Cat.	Percentage of Schools Offering Cat.	No. of Schools Requiring Cat.	Percentage of Schools Requiring Cat.
Vellucci (1997) N=52	48	92	33	63
Spillane (1999) N=56	56	100	31	55
Joudrey (2002) N=48	40	83	19	40
Hsieh-Yee (2002) N=47	44	94	25	53

**Table 6.** Topics covered in cataloging courses

Topic	Respondents (N=51)	Percentage
<b>Cataloging knowledge</b>		
Authority control	48	94
MARC	48	94
Cat. objectives & principles	47	92
Descriptive cataloging	47	92
Subject headings	45	88
Classification systems	45	88
Subject analysis	42	82
Controlled vocabulary	41	80
Bibliographic networks	41	80
Evolution of the catalog	40	78
Management of the catalog	26	51
<b>Cataloging of various formats</b>		
Print resources	45	88
Electronic resources	31	61
Nonprint, nonelectronic resources	26	51
<b>Metadata issues</b>		
Metadata overview	36	71
Relationship between cataloging and metadata	32	63
Relationship between cataloging and other info. org. methods	28	55
Potential of metadata for info. organization	27	53

**Table 7.** Practice in cataloging courses

Practice	Respondents (N=51)	Percentage
Creating records by AACR	48	94
Creating MARC records	46	90
Searching OCLC WorldCat	34	67
Searching a local OPAC	31	61
Creating authority records	28	55
Creating MARC records in OCLC	22	43
Searching CORC	15	29
Creating records in other metadata schemes	11	22
Creating Dublin Core records in CORC	9	18

XML. But the coverage of metadata at the next two levels reflected great variation, probably because metadata and advanced metadata courses were fairly new. Only 11 educators reported the topics of their metadata courses, and only 5 educators described the coverage of their advanced metadata courses. Several metadata courses did not focus on

**Table 8.** Advanced cataloging offered

Study	Schools	Percentage
Vellucci (1997) N=52	38	73
Joudrey (2002) N=48	27	56
Hsieh-Yee(2002) N=47	34	72

**Table 9.** Cataloging topics covered in advanced cataloging courses

Topic	Respondents (N=28)	Percentage
Subject analysis	28	100
Cataloging of nonprint resources	20	71
Descriptive cataloging	19	68
MARC	12	43
Metadata issues	11	39
Authority control	5	18
Bib. utilities	4	14
Management	3	11
Misc. <sup>a</sup>	8	29

<sup>a</sup> This category includes topics such as information technology, syntax encoding schema, technical services in digital libraries, controlled vocabulary and natural language, and cooperative programs.

**Table 10.** Metadata topics covered in advanced cataloging courses

Topic	Respondents (N=25)
Dublin Core	14
Metadata types, usage, future	8
Metadata schemas	6
Relationship between cataloging and metadata	6
Crosswalk, interoperability	5
CORC	4
XML, RDF	2
Misc. <sup>a</sup>	7

<sup>a</sup> This category includes topics such as classification scheme, comparison of metadata and MARC in cataloging Web resources, guideline development, metadata tools, management of metadata, search engines, and integrated catalogs.

metadata per se, but placed metadata in a particular context and discussed their applications. For example, one educator offered a one-credit workshop focusing on metadata alone, while another educator examined the use of metadata for the cataloging of Web resources, and a third educator covered metadata and the organization of Internet resources. Many topics were mentioned for metadata courses, with metadata schemas being taught more often than other topics. Topics mentioned by more than one educator included encoding standards, MARC, metadata history and overview, crosswalks, search engines, technologies for metadata, metadata architecture, management of metadata, metadata and information retrieval, and evaluation of metadata. At the advanced level, topics were similarly diverse, with encoding standards and individual schemas covered by three of the

five respondents. Two educators reported their advanced courses to be essentially hands-on classes. Data suggest the offerings of metadata in current LIS programs depend on the knowledge and interest of instructors.

#### Limited Coverage of Cataloging Topics in Metadata-Related Courses

Further analysis revealed that, except for “controlled vocabulary,” fewer than 50 percent of the instructors of metadata courses covered cataloging topics listed in the survey, and only 40 percent discussed the relationship between cataloging and metadata (table 11).

As for exercises, educators gave students practical experience in creating metadata records, mapping concepts across metadata schemas, developing metadata for a project, and others (table 12). The list is short but impressive and suggests some educators are cognizant of critical issues in the metadata world, but the number of educators with such background and understanding seems very small. To ensure coverage of metadata topics and issues in greater depth, more faculty members need to have expertise in this area.

#### Extent of Integration of Cataloging into LIS Curricula

To ascertain the extent to which cataloging has been integrated into LIS curricula, educators were invited to list all the courses that covered cataloging. Forty-five educators representing 43 schools named a total of 166 courses; the average number of courses covering cataloging topics per school is 3.9. This number, however, may be an underestimate because at least one educator mentioned that almost all of their courses had something to do with cataloging, and there were too many courses to mention.

#### Extent of Integration of Metadata into LIS Curricula

Educators also named courses that covered metadata. Twenty-nine educators representing 28 programs named a total of 91 courses. The average number of courses covering metadata topics per school is 3.3. This number, however, may be an underestimate because at least two educators indicated that metadata topics were taught in a large number of their courses, and it was impossible to list them all. Nonetheless, the number of courses covering metadata shed some light on the extent to which metadata topics were integrated into LIS curricula.

Interestingly enough, 65 of the 91 courses (71 percent) were included in the 166 courses that also covered cataloging topics. The extent to which cataloging and metadata topics were integrated into LIS curricula and the extent of overlap between the two groups of courses are summarized in table 13.

Spillane reviewed program bulletins to identify catalog-



ing-related courses and found an average of 4 courses was offered per school.<sup>29</sup> Joudrey examined course descriptions and syllabi of 48 programs and found the average number to be 4.15.<sup>30</sup> The latest study used data provided by educators, and the average number of courses that covered cataloging (3.9) was fairly close to the figures reported by Spillane and Joudrey. These figures suggest the integration of cataloging topics into curricula has remained stable. It is worth noting that 65 of the 166 (39 percent) courses named also cover metadata. Metadata came on the scene around 1995, and it is remarkable that in less than a decade it was taught in 91 courses at 28 programs.

### Educators' Views on Cataloging and Metadata Education

The final part of the survey included a series of statements to assess educators' views on cataloging and metadata education. Many educators believed cataloging played an important role in information organization and was a good

**Table 11.** Cataloging topics in metadata courses

Cataloging Topic	Responses (N=15)	Percentage
Controlled vocabulary	8	53
Authority control	7	47
Classification schemes	6	40
Indexing	6	40
MARC	6	40
Relationship between cataloging and metadata	6	40
Subject analysis	6	40
Descriptive cataloging	5	33
Purposes and principles of the catalog	5	33

**Table 12.** Hands-on practice in metadata courses

Practice	Responses (N=15)	Percentage
Creating metadata records	11	73
Concept mapping	8	53
Developing metadata for a project	8	53
Implementing a metadata project	7	47
Evaluating a metadata scheme's effectiveness	7	47
Searching with metadata records	7	47
Creating MARC records	6	40
Other	6	40
CORC	5	33

**Table 13.** Integration of cataloging and metadata topics in curricula

	Responses	Schools	Courses	Average Course per School	Course Overlaps btw Two Groups	Percentage of Overlaps
Cataloging topics	45	43	166	3.9	65	65/166=39%
Metadata topics	29	28	91	3.3	65	65/91=71%

example of metadata. To some of them, cataloging is metadata, so there is little need to do more about metadata. But others appreciated the similarities and differences between cataloging and metadata. They recognized metadata is broader in scope than cataloging and believed students need metadata education in addition to cataloging education. Table 14 summarizes educators' support for the given statements, using a five-point scale, with five meaning "strongly agree." Educators showed a strong preference for not splitting cataloging and metadata into two separate tracks of study for students. They also agreed on the areas where students ought to have specific knowledge and skills (table 15). It is worth noting that most of them considered many of the topics equally relevant to students who aspire to be catalogers and those aspiring to be metadata specialists.

This need for students to know about metadata and cataloging as related subjects is important. Even Gorman, who has defended cataloging from metadata advocates' attacks, acknowledged the role that metadata schemas such as Dublin Core could play in the control over Web resources.<sup>31</sup> Thomas commented on the potential of the catalog as a portal and urged catalogers to make explicit the applications of cataloging principles and practice in the digital environment.<sup>32</sup> What the literature and survey data suggest is that all students should have a good understanding of the relationship between cataloging and metadata, and should understand that many cataloging practices and standards can contribute to the implementation of metadata. For aspiring catalogers and metadata specialists alike, competencies in cataloging and metadata are essential.

## Conclusion

LIS programs increased their reliance on introductory courses to cover cataloging and metadata, at the same time fewer programs required cataloging. The knowledge of cataloging delivered in these courses was basic, and the coverage of metadata was usually limited to an overview. Current cataloging courses showed similarity in their coverage, but less than two-thirds of the courses dealt with the cataloging of electronic resources, and only slightly more than half of them covered other nonprint resources. Metadata overviews were provided in cataloging courses, but few educators went beyond that. The hands-on practice of cataloging courses was similar across programs, with

an emphasis on creation of bibliographic records and subject cataloging, but less on searching; fewer than 30 percent of the educators included exercises for metadata record creation using non-AACR schemas.

**Table 14.** Educators' views on cataloging and metadata education

Statement	Average Score	Mode
We may want to design two tracks of study, one for students interested in cataloging and another for those interested in metadata.	2.4	1
While cataloging and metadata are similar in some ways, there are enough differences for us to devote at least one course to each subject.	3.6	5
The relationship between cataloging and metadata should be clarified in courses devoted to cataloging and metadata.	4.1	5
We need to stress the value and purposes of cataloging and show students the application of cataloging principles and concepts to the organization of resources in various formats.	4.6	5
We need to have some coverage of metadata in cataloging course(s) because both cataloging and metadata are about information organization.	4.6	5
Students need the knowledge and ability to place metadata in a larger ontology of knowledge management methods, and have an understanding of the role of metadata vis-à-vis cataloging metadata, classification, subject analysis, authority control, controlled vocabulary, and other similar practices.	4.6	5

The number of cataloging courses making use of CORC was also very small. In advanced cataloging courses, educators provided in-depth coverage of topics related to subject cataloging, and many of them focused on the cataloging of nonbook resources, but few of them included management and metadata topics. The coverage of metadata in advanced cataloging courses tended to be limited and was uneven across programs.

Few programs offered full courses on metadata, and even fewer offered advanced metadata courses. Topics again show a wide range, and two of the five respondents indicated their advanced metadata courses were hands-on courses. There seems to be a small number of educators with a strong background in metadata. Data suggest that the offering of metadata courses is related to the knowledge of instructors. One way to strengthen the coverage of metadata in LIS programs is to help faculty members develop expertise in this area. Since most of the development and implementation of metadata take place outside LIS programs, it will be beneficial to involve practitioners in enhancing faculty knowledge in metadata. This will improve the teaching of metadata across the board and provide students with a more consistent coverage of topics and issues related to metadata. Last but not least, the latest survey also found that the integration of cataloging topics into curricula remained steady and that metadata were well integrated too, with 91 courses from 28 programs covering metadata. Although

**Table 15.** Relevance of metadata knowledge and skills

Statement	Average Score	Mode	Percentage Yes
We need to give them the knowledge and skills to identify areas for metadata development, application, and evaluation. This topic is equally relevant to aspiring catalogers and aspiring metadata specialists.	4.2	5	62
We need to help them understand issues of cross-collection, cross-domain searching and various approaches for ensuring interoperability between metadata schemas. This topic is equally relevant to aspiring catalogers and aspiring metadata specialists.	4.2	5	76
We need to give them a thorough understanding of a variety of metadata schema and markup languages, their applications, strengths and weaknesses, and impact on library systems. This topic is equally relevant to aspiring catalogers and aspiring metadata specialists.	4	5	64
We need to give them experience in implementing a metadata project, including needs assessment, project management, metadata scheme adoption and adaptation, metadata creation, etc. This topic is more relevant to aspiring metadata specialists. This topic is equally relevant to aspiring metadata specialists and aspiring catalogers.	3.9	5	49
			51

metadata received much attention only in the last five years, LIS programs have rapidly incorporated metadata into their curricula. What remains to be analyzed is the nature of the integration.

Educators agreed that we should cover metadata in cataloging courses, clarify the relationships between metadata and cataloging, and explain how topics such as classification, subject analysis, authority control, and controlled vocabulary are related to metadata. They supported the idea of preparing students to identify areas for metadata development, application, and evaluation. They recognized the need to explain issues of cross-collection and cross-domain searching and address interoperability issues. They also endorsed

the effort to help students understand a variety of metadata schemas and markup languages, their applications, strengths and weaknesses, and impact on library systems. It is reassuring that many educators are forward-looking. Survey data show that not all of them were able to put these ideas into action, but these views clearly suggest a strong interest in preparing LIS graduates well in cataloging and metadata.

Organization of information is the foundation of the profession. Digital technology will advance rapidly and new formats will continue to emerge. The cataloging profession has demonstrated its ability in handling changes. Rules have evolved and practices have been revised to accommodate changes brought about by new media formats. To remain relevant to information management in the twenty-first century, the LIS field must incorporate new developments in information organization quickly into curricula and provide students with expertise in cataloging and metadata. Survey data indicate that more coverage of nonprint resources, digital resources, and metadata-related topics is needed. As a result, in a response to the LC Action Item 5.1, several actions were recommended.<sup>33</sup> To help educators develop their cataloging and metadata curricula, three levels of technical expertise in cataloging and metadata were specified, and leadership and management competencies in six areas were presented. The report recommends an information package on metadata basics to ensure a basic level of understanding of metadata among educators and trainers; an online discussion group for educators to exchange teaching experiences and concerns; a Web clearinghouse to facilitate access to lesson plans, exercises, and research; and a one-day conference on teaching strategies for educators and practitioners. From 2003 to 2005, these actions will be implemented and evaluated. It is hoped that they will help educators chart the future course of cataloging and metadata education. When LIS graduates become capable of using whatever standards are appropriate to manage and organize information within and outside libraries, information will be better organized and users will have better success in finding and accessing information in the networked environment.

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# Notes on Operations

## Gold Rush

### Integrated Access to Aggregated Journal Text through the OPAC

Elizabeth S. Meagher and Christopher C. Brown

*Faced with the challenge of providing access to full-text content offered through journal aggregator services, the University of Denver found a better way to integrate costly aggregator journal titles with traditional information resources through Gold Rush. Gold Rush is a database maintained by the Colorado Alliance of Research Libraries that allows the serials unit to populate the local OPAC with a single URL for each journal title with aggregator content. With one URL to maintain, the unit limits the amount of time devoted to electronic journals management.*

#### Problem Statement

Serials management is undergoing a period of unprecedented change, which has been brought on primarily by the rapid proliferation of electronic journals and a host of exciting and complex technologies to support them. As the library strives to provide access and use information for the digital environment, connecting to online journals takes on new dimensions and urgency. Users continually identify full-text electronic access as a high priority, and access serves as a crucial component in supporting distance education. No longer able to survive as economic silos, libraries are joining forces in consortia to obtain access to large databases with full-text content offered through journal aggregator services. Libraries also are searching for better ways to integrate these costly aggregator journal titles with traditional information resources.

The problem is widespread and growing. The challenge of managing electronic journal (e-journal) resources has been characterized as threatening to overwhelm us.<sup>1</sup> Linda

Ashcroft and Stephanie Melvor state that “[t]he flood of new electronic resources released in the last several years has been too powerful to moderate. The result is a world in which electronic information is still poorly integrated, in which multiple interfaces need to be navigated in order to find information, and in which the interfaces themselves do not communicate.”<sup>2</sup> The difficulties of serials management for the technical services areas are accentuated for library users. The inability to represent consolidated library holdings is exasperating and misleading to users.<sup>3</sup> Promoting discovery of the thousands of journals embedded in aggregator databases simultaneously presents a challenge and opens opportunities for libraries.

#### Aggregators

An aggregator is a single entity that provides electronic access to multiple publications, particularly journal titles. According to Simon Inger, there are three types of companies that are termed aggregators.<sup>4</sup> These are:

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- Companies that provide a hosting service for publishers—the content host. These are often called “digital presses.” Entities such as Project Muse and the American Institute of Physics provide such services to publishers.
- Licensed full-text content aggregators are companies that create databases of full-text articles defined by subject area and sold as a single product rather than as individual subscriptions or components of the database. Some companies that provide full-text aggregation are Ebsco with its EbscoHost product and Bell and Howell (UMI) ProQuest.
- Gateways are companies that index disparate content on other content host services. The gateway is a large collection of links to publisher’s full-text content. The gateway usually does not host the full-text content. An example of a gateway is Ebsco’s Electronic Journal Service (EJS).

It is helpful to isolate specific problems encountered when dealing with aggregator services. Duplication of titles within aggregator services complicates the situation.<sup>5</sup> A title can be available through more than one aggregator. In addition, coverage often differs from source to source. Some aggregators provide access to citations only, others to abstracts, others to full text, and still others to full content with graphics, photos, and tables included. Embargo periods on full text are not uncommon. If this is not complex enough, the title coverage lists supplied by aggregators usually are replete with minor errors often involving incorrect scope of coverage. Reference librarians will hear from users when holdings are not represented properly and users cannot find the articles for which they are

looking.

### Cataloging Challenges

Providing individual, title-level access to thousands of remote access electronic journals contained within aggregator databases through an online catalog is the challenge for the digital environment. Deciding to promote the Online Public Access Catalog (OPAC) as a key finding tool for information resources and as a first resource for teaching and learning is critical to making the most of the investment in these databases. Catalogers have advanced online catalogs closer to the one-stop-shopping concept for both print and aggregator-provided full-text journals.<sup>6</sup>

The online catalog is a gateway to a myriad of individual resource materials and databases held by the library. The “mulver style” or multiple versions on one bibliographic record is CONSER approved and has been a common practice for libraries dealing with microform holdings added to print records.<sup>7</sup> This allows catalogers to choose either a single or multiple record approach. CONSER currently is examining the role of aggregators in relation to single versus separate records.<sup>8</sup> Thus, appending electronic journal holdings to an existing print record is legitimate practice. Reference librarians often argue that one record per journal title is more efficient, ensures that users find the appropriate copy, and enhances usage of electronic journals. On the other hand, the multiple record option is favored by some catalogers who see the complications of the lack of bibliographic description for the electronic element.<sup>9</sup> Even after cataloging decisions are made, the reality is that the vendor situation changes weekly. Bibliographic records require editing to reflect these changes, and the task of editing these records is enormous. The approach taken here favors a single record for all formats.

Even if electronic formats were

added to every applicable bibliographic record, periodic maintenance still would be necessary. At a minimum, every title would have to be checked at least semiannually to ensure that the specified aggregator coverage was still available. With new titles being added and old ones being removed on a regular basis, it is doubtful that any one technical processing unit could keep up with this task. Maintenance comes at a cost. The thousands of bibliographic records that reside in a typical online catalog require a significant amount of time to verify the integrity of links to aggregated content. The cost to verify links even minimally, on a quarterly basis, is expensive.

In their size and complexity, aggregator titles are analogous to the major microfilm sets of the 1970s and 1980s.<sup>10</sup> They present the same problems. Collection-level records for the microfilm sets served little use in a catalog. A collection-level record for an aggregator, such as Project Muse, presents the same problem of access.

### Multiple Places to Search

If catalogers are concerned about how to handle the complexity of aggregated serial content, consider the plight of the user. In what one place can a user go to check the availability of a journal? The online catalog? Will the user find only print resources there? How will he or she find online content? Users who are weaned on the “Google approach” face too many choices.

Just as there is a need for a single, comprehensive place to find information about print subscriptions, so there needs to be a single place to find information about all formats.<sup>11</sup> Can the user expect to go to a Web-based list of electronic journals on some occasions but then to the OPAC for others? Will users understand that library OPACs may or may not contain all relevant information pertaining to all available formats? The ongoing saga of journal name changes and URL changes only

complicates the idea of multiple places to search.

### Proposed Solutions

Optimal service would provide information about all aggregation services and cataloging records for e-journals for inclusion in local OPACs and would make reference to tangible formats (print, microform, CD-ROM) for a particular serial. Aggregators provide the means for libraries to integrate full text into online catalogs by collecting the data from many publishers into a single location.<sup>12</sup> It is important first to examine methods used by libraries to deal with the complex world of aggregated journal content. For purposes of analysis, these methods are presented separately. In reality, libraries may utilize these methods in combination.

#### Develop a Web List of E-Journals

One of the most popular e-journal tracking methods is a library Web page containing a listing of e-journals. These lists are of several types. Very often they contain journal titles to which direct publisher subscriptions are held or titles that are contained in collections like JSTOR and Project Muse. Usually, however, the thousands of titles in journal aggregation services are not covered in these lists. Users, then, receive a false impression of electronic availability. Also, when patrons access the record for a print or microform format in the OPAC, electronic formats are not always designated. In other words, users might expect that the absence of electronic holdings in an OPAC record means that the library has no way to access full-text or aggregated content for that journal title. It strains user abilities to expect them to access online catalogs to find print holdings, but even more so to know enough to access Web lists located elsewhere to discover online holdings. The use of these Web lists places the burden of

knowledge on the user. The user must know to check one place for tangible formats (the OPAC), and another place for electronic formats (the Web list).

Serial tracking services such as Serials Solutions can provide libraries with integrated content for each of the aggregated services, producing Web pages for libraries complete with holdings of journal e-content.<sup>13</sup> Yet, these services encourage dual maintenance: one authority for e-content (the list) and another authority for tangible materials (the catalog), sometimes with no integration between the two. The user must know to check both places to find a complete answer regarding journal access. Figure 1 shows a title in a library's e-journal list, but electronic coverage is not noted in the catalog record.

Lists of e-journals, distinct from the online catalog, are as misleading as they are helpful, since there are invariably some electronic resources in the OPAC that are not on the Web list. For example, many libraries that are also federal depositories own dozens of records, whether from Marcive or from another source, that contain links to online serials that are freely available. Users will generally not find these in the Web list and will not know they are available. While these lists can be used as a temporary stopgap to get a job done quickly, they should not be the desired goal.

#### Catalog All Electronic Resources Title by Title

Viewing the catalog as the place to track all electronic resources, some libraries catalog each aggregated resource. This approach places all versions on one record. The obvious problem with the approach is how to maintain such an enormous number of hyperlinks within each of the MARC (MACHINE-Readable Cataloging) records. What happens, for example, when the library decides to drop one vendor and change to another vendor? Each of the records

with the dropped vendor would have to be amended. Some libraries have employed locally housed persistent uniform resource locator (PURL) resolvers to accomplish this, at greater time and expense, of course. Figure 2 shows each aggregator represented in a single MARC record.

#### Load Batch Records into OPAC

Sometimes representing aggregator content in the catalog is done by loading groups of records on a regular basis, deleting or overlaying records as updates necessitate.<sup>14</sup> Several libraries that have tried this approach ended up with one record in their catalog for a tangible format and as many as four to six records for electronic formats, one for each aggregator.<sup>15</sup>

The advantage of loading a group of records is the obvious ease of management. Records can easily be loaded, deleted, and overlaid, depending on system capabilities, on a periodic basis. No individual record editing needs to be done. Consideration also should be given to the disadvantages for reference services and for the user. Unless one searches using a title search in the OPAC that collocates all possible tangible and electronic resources, one will not see all available records and possibly miss the best method of access. Most users tend to perform keyword searches, which offer no guarantee about the record on which they will land. Figure 3 shows a separate catalog record for each aggregator.

#### Use Specialized Databases to Track Electronic Resources

Many libraries, particularly academic libraries, have an even greater need to track their electronic content providers, given the volume of databases to which they subscribe. A common solution to this management problem is using a specialized database, either one developed in-house, or an external

database, such as jake.<sup>16</sup>

The Jointly Administered Knowledge Environment (jake, see <http://jake.med.yale.edu>) was created at the Cushing/Whitney Medical Library at the Yale University School of Medicine in early 1999 to help solve these kinds of problems [i.e., track electronic content providers]. jake tracks relationships and collects and records facts about journal titles in one place so that librarians in individual institutions will not have to create and maintain separate records.<sup>17</sup>

The jake database acquires journal title lists from aggregators, using the International Standard Serial Number (ISSN) as the control field. The searchable interface provides libraries and librarians a source for aggregator content.<sup>18</sup> Other libraries, however, believe that jake is not suitable for their use. For instance, jake does not provide library-specific database and journal subscription information tailored for individual libraries, nor can it provide individualized log-in information for libraries using proxy servers.

Table 1 presents a comparison of the four approaches to manage and track electronic resources.

### Gold Rush: The University of Denver Solution

The Colorado Alliance of Research Libraries, a consortium of academic libraries in Colorado, developed a central digital registry of databases called Gold Rush. The database was developed to "offer improved patron access to electronic resources and to offer better administrative tools for managing contacts and collection overlap analysis."<sup>19</sup> Gold Rush contains title lists from each of the aggregator and

<a href="#">Carbohydrate Research</a>	present
<i>Coverage varies. Usually current 9-12 months</i>	
<a href="#">Carcinogenesis</a>	Jan. 1999 - present
<a href="#">Cardiovascular Research</a>	present
<i>Coverage varies. Usually current 9-12 months</i>	
<a href="#">CATENA</a>	present
<i>Coverage varies</i>	
<a href="#">Cell and Tiss</a>	<b>Cardiovascular research.</b> London : British Medical Association,
<b>LOC</b>	Valley RC681.A1 C3
<b>LIB. HAS</b>	*Unbound issues in display area* v.1 (1967) - *Lacks some issues*
<b>Latest Received:</b>	July 1, 2003 v.59 no.1
<b>LOC</b>	<b>CALL #</b>
<a href="#">Valley Compact Shelves</a>	<a href="#">RC681.A1 C3</a> v.1-2 (1967-1968) [incomplete]
<a href="#">Valley Compact Shelves</a>	<a href="#">RC681.A1 C3</a> v.3-4 (1969-1970)
<a href="#">Valley Compact Shelves</a>	<a href="#">RC681.A1 C3</a> v.5 (1971)
<a href="#">Valley Compact Shelves</a>	<a href="#">RC681.A1 C3</a> v.6 (1972)
<a href="#">Valley Compact Shelves</a>	<a href="#">RC681.A1 C3</a> v.7 (1973)

**Figure 1.** Titles appear on library's e-journal list, but electronic coverage is not noted in the catalog record

<b>Title</b>	<b>Journal of black studies [electronic resource]</b>
<b>Publisher</b>	Thousand Oaks, CA : Sage Publications,
<b>Click on the following to:</b>	
<a href="#">Address for accessing the journal through UMI ProQuest Direct</a>	
<a href="#">Address for accessing the journal using authorization number and password through OCLC FirstSearch Electronic Collections Online</a>	
<a href="#">Address for accessing the journal from an authorized IP address through OCLC FirstSearch Electronic Collections Online</a>	
<a href="#">Connect to Journal of Black Studies (Online : Ingenta)</a>	
<a href="#">Connect to Journal of Black Studies (Online : JSTOR)</a>	
<b>Identity</b>	Electronic Journal - Ingenta
<b>Location</b>	Electronic Journal
<b>LIB. HAS</b>	Vol. 1, no. 1 (Sept. 1970)-
<b>Identity</b>	Electronic Journal - JSTOR
<b>Location</b>	Electronic Journal
<b>LIB. HAS</b>	Vols. 1-29 (Issue 2), 1970-1998
<b>Location</b>	Electronic Journal
<b>Frequency</b>	Bimonthly

**Figure 2.** Each aggregator represented on a single catalog record

stand-alone journal sources. Originally populated by title records from jake, Gold Rush has exceeded jake in both number of titles and currency of data. Gold Rush staff continually retrieve journal title lists from vendors, add value to these lists, and maintain the combined database.

While Gold Rush was originally designed for the enhancement of

Alliance member libraries, the full service is currently available by subscription to other libraries or consortia. Limited functionality of Gold Rush is available to the public at <http://gold-rush.coalition.org>.

#### Gold Rush Components

Subscription Management  
in Gold Rush



Setting up access to databases within Gold Rush is fairly easy. First, the vendor is selected from the list of available vendors within the Gold Rush management module. Next, each database offered by a given vendor can be customized with a generic URL for that database. This works for databases that do not allow drilling down (access) to the journal-title level. Usually, however, each specific journal title will have its own journal-level URL to facilitate access directly to the journal title.

The management portion of Gold Rush allows subscribing libraries to add or subtract aggregator collections as well as to modify specific journal titles within those collections. When a library changes vendors for whatever reason, the Gold Rush subscription information can be changed to the new vendor in a matter of minutes.

### Database Holdings

Gold Rush currently has more than 400 aggregator services representing more than 50,000 unique titles.<sup>20</sup> Individual Alliance libraries have the option of enabling databases to which their library subscribes. Further, within each database, journals may be suppressed if the library does not want

to provide access through Gold Rush. Access to databases can easily be controlled with these powerful features. Figure 4 shows the link from a serial record to the aggregator that is available in Gold Rush.

### Journal Holdings

In Gold Rush, individual journal titles within aggregators, by default, take the generic URL that was assigned to the database. However, a journal-specific

URL can be assigned when it is possible to access a journal title directly. In some cases, suppressing certain titles is necessary because the holdings information for that title would be misleading. However, the quality of the data is only as good as the lists supplied by the vendors. The quality and timeliness of the list remain in the control of the aggregator.

### Journal Indexing

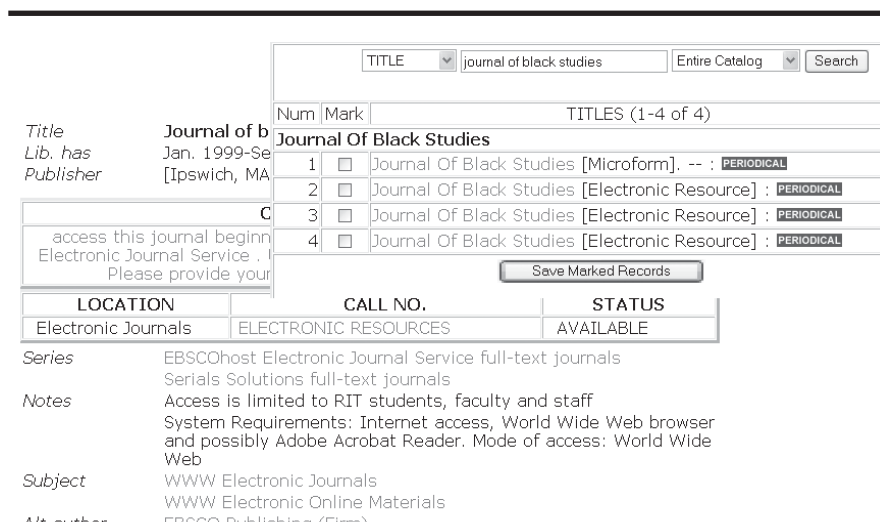


Figure 3. One catalog record represents each aggregator

Table 1. Comparison of possible solutions

	Pro	Con
Develop Web List of E-Journals	Convenient for serials unit Subscription services can provide customized content	Dual maintenance (list and OPAC) User must check two places to find full journal holdings Emphasis of full-text sources, but ignores indexing and abstracting sources (unless a list of those also is kept)
Catalog E-Resources Title by Title	Brings various aggregator information together	High maintenance
Load Batch Records into OPAC	Easy to maintain	User sees multiple records for one journal title User may not find the appropriate information
Use Specialized Databases	Tracking resources in one place is easier to maintain May be available by subscription	May not easily integrate with catalog

While a number of services provide either full text availability, for example, Serials Solutions, or indexing information, for example, *Ulrich's International Periodicals Directory*, few, if any, provide both. This is the principal advantage of the approach used by Gold Rush. Within Gold Rush, one can locate not only full-text sources, but also indexing sources. This information, normally conveyed in field 510 in MARC records, can now be more reliable than the information provided in the 510 field. The MARC 510 field indicates where the journal is indexed. Gold Rush offers a 510 field with new dimensions. Using Gold Rush is similar to consulting *Ulrich's International Periodicals Directory*, with the added value of being able to instantly launch a search.

#### Other Gold Rush Features

Several features set Gold Rush apart from other similar services. Gold Rush is not housed on local library servers, but on a central server at the Colorado Alliance for Research Libraries headquarters. OpenURL technologies are currently being tested through Gold Rush, with results expected later in 2003. The Gold Rush management module offers subscription tracking and notification services, which assist serials acquisitions units.

#### Integration with the OPAC

Although the original intent of Gold Rush was to serve as a searchable database for journal aggregator content, the University of Denver wanted to "drill in sideways" to access the content. The 856 MARC field in serial records could now point to the Gold Rush content. The objectives were twofold. Users would consider the OPAC to be the final authority for all journal locations, regardless of format, tangible or electronic, and there would be no lists of aggregated serial holdings in a separate place from the catalog, creating silos of information. Separate lists force users

The screenshot shows a web interface for Gold Rush. At the top, there is a table with columns 'Title' and 'Reason.'. Below this, a heading reads 'The links below are for electronic versions of this publication:' followed by a link 'Gold Rush: Check for full-text coverage'. A sidebar on the left lists various fields like 'Location', 'LIB. HAS', and 'Latest Received:'. The main content area features a 'Gold Rush' logo and a detailed view for the title 'Reason'. This view includes 'Alt. Title:', 'ISSN: 0048-6906', and 'Subjects: Social history -- 20th century (lcsh), Social sciences (lcsh)'. A legend explains icons for full-text (FT) and indexing (DB) resources. Below the legend is a table of links:

Link	Coverage	Database	Provider
<b>Full Text Resources</b>			
	Fulltext from Jan 1994-	Academic Search Premier	EBSCO INDUSTRIES
	Fulltext from Jun-93	Expanded Academic Index ASAP	GALE GROUP
	Fulltext from Jun-93	General Reference Center Gold	GALE GROUP
<b>Indexing (non-fulltext) Resources</b>			
	Indexed from 1977	America: History and Life	ABC-CLIO
	Indexed from 1977	Historical Abstracts	ABC-CLIO

Figure 4. Link from serial record to aggregator availability in Gold Rush

to have to know to search more than one place and can mislead users in cases where aggregated journal content is in the Web-based list and direct publisher content is available from the catalog record.

Gold Rush grew out of the need for Colorado academic libraries to have a shared database of all databases. The University of Denver was early to see the possibilities of using Gold Rush in an expanded manner. The following four phases describe the implementation at the university. The initial searchable database introduced Gold Rush to University of Denver reference librarians and some advanced users. In the second, current phase, Gold Rush links in the OPAC, integrated aggregator content with existing formats. The generation of abbreviated MARC records, the third phase, is still in development. When complete, MARC records not otherwise represented in the OPAC will be loaded and deleted on a periodic basis, providing integrated, enhanced access to electronic content. The final

phase, implementation of the Gold Rush OpenURL resolver, will integrate Gold Rush holdings with each of the compliant database vendors.

#### Phase One: Searchable Database

Gold Rush is a database that indexes databases and electronic journals available on the Internet and available to the Colorado Alliance of Research Libraries. The database can be searched by title, keyword, subject, ISSN, and by other means through the Web interface with easy-to-use pull-down menus. Both full-text journals as well as indexed titles (i.e., titles that have no full-text availability, but do have indexing or abstracting) are available from more than 400 aggregators and indexing/abstracting services. Users can locate where full-text articles are available as well as where single titles are indexed. Users can limit their access to full-text resources, free electronic resources, or both. Users also can identify all institutions with which they have an affiliation for search-limiting purposes. Three

types of search modifiers (any, all, and phrase) are available, allowing very simple keyword, Boolean, or lengthy string searches. Gold Rush, with all its capabilities, complements existing local online catalogs.

#### Phase Two: Links from the OPAC to Gold Rush

Going beyond a mere searchable database, each existing print MARC record with online availability needed to have a link to Gold Rush. The link would point not only to online full text, but also to indexing sources. To accomplish this, the serials unit extracted all serials with ISSN's (field 022) from the local online catalog. After this list was compared with ISSN's in the Gold Rush database, the serials unit identified the MARC records needing Gold Rush 856 fields. The criteria for this phase included only those records with no 856 fields. Each URL was added manually to the record.

Following is the anatomy of the Gold Rush URL that includes a proxy rewrite for the University of Denver: <http://0-goldrush.coalliance.org.bianca.penlib.du.edu/index.cfm?fuseaction=doSearch&srchTerm=0003-1305&FTlimit=fulltext&srctype=ISSN>. The proxy rewrite is one mechanism that allows remote users who are using an outside service provider to fill in a name and password in order to view the content.

If the proxy rewrite ("0-" and "bianca.penlib.du.edu") was removed from this URL, the Gold Rush URL remains as follows: <http://goldrush.coalliance.org/index.cfm?fuseaction=doSearch&srchTerm=0003-1305&FTlimit=fulltext&srctype=ISSN>. This URL is placed in the bibliographic record for the print journal title and allows access to full-text and indexed information in aggregators.

#### Phase Three: Generating MARC Records

While some vendors supply MARC records for each of their titles, it was felt that this could easily be accomplished by automatically producing in-house-generated brief MARC records. These abbreviated records include title, ISSN, URL, and subject headings. Unlike aggregator-supplied records with URLs linking only to their specific services, the URLs from the locally generated records would link to Gold Rush content. One URL potentially could include multiple aggregators. Many methods can be employed for automating this process. Anywhere from 2,000 to 8,000 records would need to be created monthly for these titles, depending on subject librarian preferences. This phase is being implemented at the time of this writing.

#### Phase Four: OpenURL

The OpenURL is a protocol for interoperability between an information resource and a service component and offers localized services in an open linking environment. In other words, it provides context-sensitive linking from sources such as bibliographies or indexing databases to an OpenURL resolver database, so that the user receives the "appropriate copy," that is, the full text of the desired resource. Further information about OpenURL is available from the National Information Standards Organization (NISO) in the notice releasing the NISO OpenURL for comment.<sup>21</sup> Gold Rush interfaces with its own OpenURL resolver, allowing Gold Rush to work with compliant vendors to access the journal-title level.

In the following example, information harvested from a vendor database is passed along to an OpenURL resolver, serving up the appropriate copy to the requester:

[http://edjo.coalliance.org/openresolver/grl-DUP.cgi?sid=sfx:citation&genre=journal&date=2003-04&volume=23&issue=4&spage=8&issn=1041-](http://edjo.coalliance.org/openresolver/grl-DUP.cgi?sid=sfx:citation&genre=journal&date=2003-04&volume=23&issue=4&spage=8&issn=1041-7915&aulast=shigo)

[7915&aulast=shigo](http://edjo.coalliance.org/openresolver/grl-DUP.cgi?sid=sfx:citation&genre=journal&date=2003-04&volume=23&issue=4&spage=8&issn=1041-7915&aulast=shigo)

Gold Rush operates a full OpenURL resolver, and the database can be searched indirectly through an OpenURL query. While this paper does not list every aspect of OpenURL technologies, it is necessary to point out that Gold Rush does have these capabilities. The University of Denver will implement it when cross database linking is enabled.

#### Aggregator Management with Gold Rush: The Hands-Off Approach

Each serial record in the OPAC with a link to Gold Rush dramatically reduces the need for editing or updating. The Gold Rush link is stable. If an aggregator drops a title, changes from full-text to index-only availability (or vice versa), or if the institution completely changes its subscription plans, Gold Rush will reflect these changes. By letting Gold Rush do the "heavy lifting," the serials unit saves management time.

#### Gold Rush Problems

With all of its advantages, Gold Rush is not without problems. Anyone working with vendor-supplied title lists acknowledges that none of these lists is entirely accurate.<sup>22</sup> Since Gold Rush (or any other similar service) cannot entirely account for the scope of coverage of each journal within each database, one can expect to find occasional miscues whether indexing is cover to cover, selective, or partial.

Frequent changes (additions and deletions) are reflected in the Gold Rush database on a continual basis. However, major changes to a database might not be reflected immediately in the Gold Rush database. Additionally, only journal titles that have ISSN numbers are allowed into the Gold Rush database. Thus, the database should not be viewed as an absolute guide to aggregated holdings, but a

relatively accurate guide—an instrument for resource discovery.

### Summary and Conclusions

Using Gold Rush to maintain aggregator databases allows the library to make the best use of what the digital age has to offer. According to Calhoun and Kara, “librarians are devising, engineering and negotiating collaborative, cost effective and timely solutions that promise to enhance online catalogs and to make the most of the millions of dollars that libraries invest each year in aggregator databases.”<sup>23</sup> By adding Gold Rush links to MARC records for serials, access to aggregated journal content can be controlled on a title-by-title basis. By integrating Gold Rush information into the same bibliographic records as traditional formats, the serials unit weaves online and traditional resources into a seamless environment. Gold Rush allows access with a minimum amount of maintenance.

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# Book Reviews

Edward Swanson, Editor

***Engineering Libraries: Building Collections and Delivering Services.*** Edited by Thomas W. Conkling and Linda R. Musser. Binghamton, N.Y.: Haworth Information Pr., 2001. 250p. \$59.95 cloth (ISBN 07890-1672-9); \$44.95 paper (ISBN 0-7890-1673-7). Published simultaneously as *Science & Technology Libraries* 19, nos. 3/4.

In today's information world it is difficult to keep up with every new resource or service that one can potentially offer to users. This is especially the case when dealing with engineers, because they use a multitude of information from various disciplines in numerous formats, and they have a range of information literacy skills. One can put one's mind at ease, at least for a little while, with *Engineering Libraries: Building Collections and Delivering Services*, because this book covers a topic that is relevant for any position within a library or information center that provides information to rising engineers, faculty, and researchers. This book contains a compilation of articles that were written by librarians from the corporate and academic communities. Even though most of the articles were written by people in academia, the topics of discussion can apply to all library settings that deal with engineering.

This book contains an introduction by the editors, includes an index, and is divided into four sections: resources, digital and virtual libraries, information competencies, and management. Within each of the four sections there is a range of articles. Each of the articles has an extensive

bibliography for further exploration on the topics.

The resource section covers information from across the spectrum, ranging from resources for secondary education to the production and suppliers of grey literature. Whether one is doing outreach to local schools or searching for technical reports about the latest research sponsored by the government, the resource section has valuable information. The article by Beth L. Brin, "Building a Library Collection to Support New Engineering Programs," supplies the reader with a step-by-step guide on how to build a collection to support a program. Brin provides strategies and a list of guides and publishers for selecting current and retrospective monographs, serials, and other materials, such as technical reports and standards.

A highlight from the articles that deal with the topic of digital and virtual libraries is "Virtual Engineering Libraries," by Jill H. Powell. Powell provides the reader with a comparison of ten virtual libraries or Web sites. She uses Ackermann and Hartman's definition of virtual libraries (as in WWW Virtual Library), namely "directories on the Web that contain collections of resources that librarians have carefully chosen, annotated, and organized in a logical way" (107). The virtual libraries and Web sites compared were either specific to engineering (such as the Edinburgh Engineering Virtual Library (EEVL)—or general in nature (such as Yahoo! and Google). For each of the ten, the author provides some background information on the virtual library or Web site, its strengths, and

how it compared to the others when looking for twenty-five resources the author selected.

Information literacy has been the hot topic for quite a while. Therefore, there have been lots of articles and standards written about this topic including "Information Literacy Competency Standards for Higher Education," which was developed by the Association of College and Research Libraries. This section could have included more information on issues such as how to assess if someone is information literate or how to make sure instructional sections develop information-literate users.

The last section of the book deals with management. Some of the topics that are discussed are how technology and the economy have an effect on the library, making sure that the services are based on users' needs, and how to make sure additional funding is available, if needed. The article "Opportunities for Creativity: Fundraising for Engineering and Science Libraries," by Joanne V. Lerud and Lisa G. Dunn, is timely. Let's face it: the economy has seen better days. There have been mergers and layoffs in the business world. State budgets across the nation have been hit hard. These factors and more have all had an effect on libraries. Likewise, we have seen library budgets shrink tremendously, together with layoffs and even closing of libraries. It seems especially important to look into alternative ways to provide resources and services. Lerud and Dunn present a variety of ways to seek funding, such as letters that solicit support or events that are held annually, and strategies

for success.

Although these articles were all simultaneously published in the journal *Science and Technology Libraries*, having them also available as a monograph with an index for easy reference is valuable. Several of the articles provide concise background information, so that the reader can better understand the current issues. The information provided is appropriate for those new to the profession as well as for the veterans. The editors summarize it best by stating, "This collection of papers highlights some of the issues, resources, tools, and techniques that will be necessary to meet the challenges of engineering librarianship in the future" (2).—*Tamika Barnes* (*tamika\_barnes@ncsu.edu*), *North Carolina State University, Raleigh*

### **Works as Entities for Information**

**Retrieval.** Edited by Richard P. Smiraglia. Binghamton, N.Y.: Haworth Information Pr., 2002. 267p. \$59.95 cloth (ISBN 7890-2020-3); \$39.95 paper (ISBN 7890-2021-1). Published simultaneously as *Cataloging & Classification Quarterly* 33, nos. 3–4.

Library catalogs are ambiguous in essence. What do they describe at all? What is the precise nature of the "cell units" of which such "organisms" consist? What is the precise nature of the "sinews" that bind those cell units together?

The basic cell of a catalog is the bibliographic record; the basic sinews that bind them together and give them meaning as a whole are bibliographic relationships. But the overall ambiguity of library catalogs results from the very ambiguity of basic cells themselves: what is it that a bibliographic record describes? Any skilled cataloger will immediately reply: "A publication," that is, a product—a *physical* product. Or, to put it more accurately, a set of features common to a given set of physical products.

But what about the immaterial content of bibliographic products?

Librarians cannot ignore that fundamental aspect, and they strive to account for something like "content." Here begins the ambiguity. Catalogers strive to stuff into the tiny space of bibliographic records information that relates either to physical products (i.e., *publications*) or to intellectual products (i.e., *works*). And yet, they keep to the equation:

$$1 \text{ distinct [physical] publication} = 1 \text{ bibliographic record}$$

Hence those huge lists of hits, if you are unfortunate enough to search for a heading such as "Shakespeare" in a library catalog.

Theoreticians in library science—and practitioners as well—have therefore been investigating the possible helpfulness of *works* in information organization (and Seymour Lubetzky's influence proved instrumental in that field). In this regard, Richard P. Smiraglia's *Works as Entities for Information Retrieval* is timely, welcome, and immensely valuable. But Smiraglia's concerns go far beyond just the problem of library catalogs—he is also fascinated by the semiotic value of works in those two tightly interrelated systems, human society and individual mind. In the present collection he therefore called for contributors in either aspect of the *work entity* research.

The issue of huge hits lists is addressed by Allyson Carlyle and Joel Summerlin's paper "Transforming Catalog Displays: Record Clustering for Works of Fiction." This paper reports on a study of the feasibility of automatic creation of record clusters "to condense and better organize long catalog displays, making retrieval sets more intelligible to users" (14). It seems that this research is closely related to the FictionFinder prototype that is currently being developed by the OCLC Research Team, and reports on FictionFinder may constitute a good complementary reading.<sup>1</sup>

More specific contributions deal

with peculiar categories of materials, namely representations of scientific models, cartographic materials, video works, television series, digital editions, and multimedia CD-ROMs. A wide range of different types of materials is therefore covered. But more interestingly, each of these authors poses and discusses, beyond the mere physical peculiarities of the various categories of materials they address, more profound theoretical problems than just "How shall I catalog that?"

For example, in "Scientific Models as Works," Anita S. Coleman poses the problem of "of-ness" and "about-ness" relationships. Typically, catalogers and indexers will tend to regard a scientific treatise or paper that contains a representation of a scientific model as a *textual work* that was written *about* that scientific model. She convincingly argues that such textual works *are* the scientific model itself or, to put it more accurately, that they have an "of-ness" rather than an "about-ness" relationship to it. Practically, that changes many things in the way they should be cataloged.

Similarly, in "Lucy Is 'Enceinte': The Power of an Action in Defining a Work," Andrea Leigh does not just handle the problem of "how to catalog television series on videocassettes," she also investigates the fundamental difference between performed works and non-performed works, what makes the former so specific, and the inadequacy of current cataloging codes.

Other papers deal with the second aspect of the *work entity* research, that is, Smiraglia's favorite theme of works as *signs*.

Thus, Frances Morrissey, in "Introduction to a Semiotic of Scientific Meaning, and Its Implications for Access to Scientific Works on the Web," investigates "formal scientific communication . . . through scientific works of accepted genre" (67). Her analysis is impressive and surely correct, but unless the reader has a solid knowledge of semiotics, the paper is

close to unreadable.

However, the most controversial contribution in the entire collection certainly is Jack Andersen's "Materiality of Works: The Bibliographic Record as Text." The author argues that bibliographic records are textual works and that, as such, they are subject to an interpretative process on behalf of their readers. Unfortunately, his tentative "deconstruction" of the "textual elements" (p. 51) at work in a bibliographic record falls short. His listing is both incomplete and full of truisms, such as "the words and concepts used in indexing and classifying a document may yield information toward its content or aboutness" (55). But what about the semantic value of the very ordering (syntax) of all these textual elements, the semiotic value of punctuation, the influence of display options, and so on? The trouble with this paper is not that it is uninteresting—it *is* interesting, but at the same time it frustrates and infuriates the reader, because it is but an awkward sketch of a wonderful paper still to be written. It states a fascinating topic without addressing it.

Smiraglia himself wrote both the introduction and the conclusion of this collection, assigning it a perfect cyclical form. Much of the material in both his papers further develops ideas he expounded in his recent book on the same topic.<sup>2</sup> Readers will benefit from reading both *publications* (i.e., of course, *works*) in connection.

One last (tiny) remark about Scott R. McEathron's paper "Cartographic Materials as Works": the correct spelling of the author of *Theatrum Orbis Terrarum* is Joan *Blaeu*, not *Bleau*, as he writes throughout his paper. That is the kind of small mistake that can definitely impede correct information retrieval.—Patrick Le Boeuf (*patrick.le-boeuf@bnf.fr*), *Bibliothèque nationale de France, Paris*

### References

1. Thomas B. Hickey and Diane Vizine-Goetz, *Implementing FRBR on Large Databases*. (Dublin, Ohio: OCLC,

2002). Accessed December 31, 2002, [http://staff.oclc.org/~vizine/CNI/OCLCFRBR\\_files/frame.htm](http://staff.oclc.org/~vizine/CNI/OCLCFRBR_files/frame.htm).

2. Richard P. Smiraglia, *The Nature of "A Work": Implications for the Organization of Knowledge* (Lanham, Md.; London: Scarecrow, 2001).

### *Introduction to Technical Services for Library Technicians.*

By Mary Liu Kao. Binghamton, N.Y.: Haworth Information Pr., 2001. xii, 113p. \$34.95 cloth (ISBN0-7890-1488-2); \$22.95 paper (ISBN0-7890-1489-0).

There is a position that holds that library paraprofessionals should be moved toward greater standardization, greater professionalism, and (therefore) a certain amount of tertiary education. Under these assumptions, paraprofessionals (or library technicians) would seek an associate's degree or a one-year certificate focusing on the technical workings of a library. This work addresses the need for a textbook for an introductory course in the operations of a technical services department. Unfortunately, despite its intended goal of increasing the professionalism of paraprofessionals, this book is written at such an easy reading level as to imply that anyone with an eighth-grade education could work in a library. And frequent overgeneralizations render some of the information presented inaccurate or even wrong.

In most cases of inaccuracy, it would have been quite easy to have given a slightly more complete statement that would have been true. Referring to a call number as a unique number (39), to the binding of journals as a semi-annual task (72), and to the Library of Congress as the agency that would define indicators in Machine Readable Cataloging (MARC) (55) are inexcusable errors. In the former two examples, it is simply not true that all libraries do things in the way described. As for the latter example, it is simply not true at all (the ALCTS/LITA/RUSA Machine-

Readable Bibliographic Information Committee defines them). Sometimes an overgeneralization is restated elsewhere in the book, in a more complete and accurate way. And sometimes a mistake is perhaps too trivial to be of great importance to the novice paraprofessional. However, to rely on this book as a textbook would be to create an environment of having to fill in the gaps where the author has painted with too broad a stroke. A little misinformation can go a long way.

This has the beginnings of a nice introductory text, although, as mentioned, the reading level is shockingly low for something intended for those looking for employment in an information profession. A slim volume of short chapters (with numerous illustrations, an index, and a bibliography of suggested reading), it is an overview encompassing what "everyone" should know about technical services. Yet certain parts of it seemed to assume no prior knowledge of libraries—plentiful definitions at the beginning of every chapter—while other parts were not so well annotated (for example, "UTLAS" is mentioned but never defined nor described) (15, 22).

This is all very unfortunate, for the book is not without things to recommend it. It is sensibly organized into nine chapters, with a nice narrative flow that somewhat mirrors the flow of tasks through a typical technical services department. Chapters on acquisitions, cataloging, government documents, serials, and preservation are rounded out with introductory chapters on the role of computers and bibliographic utilities.

The chapter on computers and library automation is particularly introductory in its approach, and the book consistently sings the praises of automation and all of the positive changes it can bring to libraries. However, I noticed that it seemed that all of the screen-shots used as illustrations were taken from the same library management system, which made me wonder if that happened



to be the system used by the author's employer—until I noticed that the author works not for a library, but for the company that sells the very system used as an example. Is this product placement or simple convenience? And is the theme of automation a soft sell or just the author's honest opinion based on personal experiences?

The book has an imprint of 2001, and some of the information (e.g., on government documents, on electronic journals) has changed even in the short time since the book was published. Some updating would be necessary in these areas were the book to be used in the classroom.

As the book itself says, again over generalizing, "out-of-date materials should be discarded in order not to mislead readers with the wrong information" (31).—*Rice Majors (ram2@cornell.edu), Lewis and Clark College, Portland, Oregon*

### **Issues for Libraries and Information Science in the Internet**

**Age.** By Bruce A. Shuman. Englewood, Colo.: Libraries Unlimited, 2001. 228p. \$48 paper (ISBN 1-56308-805-3).

Bruce Shuman is a fan of the Internet. In fact, after consulting the *Oxford English Dictionary*, you might even say he is a "keen and regular spectator" of the medium. But, unlike more casual fans, he is not blind to the deficiencies marring the object of his fascination. In the preface of *Issues for Libraries and Information Science in the Internet Age*, Shuman calls into question the idea of the Internet being "an unalloyed boon to mankind, a totally positive force, without downside" (xvi). While pursuing his investigation into the nature of the Internet, as well as what's available to librarians through the medium, Shuman provides perspective on the history, benefits, and pitfalls of the medium, as well as a few examples of the inherent perils of writing about a fast-moving technology.

Especially useful is a narrative

timeline of the Internet. Shuman begins the history with Denis Diderot's *Encyclopédie* effort of the 1700s. He then connects the dots from Vanevar Bush's essay on a "Memex" machine, which was an idea for a machine to process all of humanities information, to universities' experiments with the ARPANET, and then to the modern Internet. More problematic is a selection of Web sites that have been provided as examples of the "cream of the crop" (145) for librarians. The difficulty with the list is that the Internet changes very quickly, and subsequently many of these sites either no longer exist or have changed their entire business model. One example is the company Alexa, which a couple of years ago provided a Web site recommendation tool, but which was subsequently purchased by Amazon.com. The Alexa product was a fascinating Web browser add-on that allowed the Internet surfer to provide feedback on visited Web sites and then in turn see the feedback left by other users. However, when readers visit the link provided in the book, they will find a search-box front end to Amazon.com's e-commerce enterprise. This is merely one example of the mutability of the Internet and, to be fair, Shuman prepares the reader early on with a disclaimer in the preface. An alternate solution to this problem, currently being offered by the authors of many Internet technology books, is to provide a companion Web site that can then be updated as Web sites change.

The book also discusses the potential pitfalls and shortcomings of the Internet. Here Shuman touches on many of the issues that concern librarians, including copyright, electronic security, privacy, and identity theft. With the Recording Industry Association of America (RIAA) now suing individuals for copyright violations because of peer-to-peer music sharing, the current legal atmosphere is uncertain for many users. Shuman rightly calls for "clear and unambiguous laws

and policies that will acquaint users . . . [with] (1) those things they are permitted to do with impunity and (2) those things that are prohibited, and for which they could incur a punishment or fine" (119). Unfortunately, other arguments being made are not as clear and serve to undermine the author's intentions. For example, hackers are inadequately identified as "people whose computer skills and resourcefulness greatly outweigh their ethics" (128). According to the New Hacker's Dictionary Web site, a preferred definition is "one who programs enthusiastically."<sup>1</sup> Hacking can have a negative connotation, but that's not necessary. There are many systems librarians who spend long hours "hacking" together, improving access to periodical databases and library Web sites through the use of scripting languages and other programs. These are the hackers of our profession, and it's important not to confuse them with malicious programmers. Additionally, as a solution to the distributed denial of service attacks (a problem connected to viruses that can bring commercial Web sites to their knees), the author appears to be advocating a global per-page access fee for Web surfers (123). This idea would have profoundly negative effects on Internet commerce, not to mention the ongoing indexing and archiving of the Web being done by search engines and other groups.

The real strength of Shuman's book on the Internet comes in its discussion of counteracting the negative affects of Luddites. The term was coined to describe the followers of Ned Ludd of the early nineteenth century who were "so resistant to modern technology that they committed willful sabotage to its machinery to retard its progress" (40). The Internet is currently solidifying its presence as a fact of life, especially for librarians. To be effective, reference librarians must now be able to turn to Web site resources as efficiently as they would refer to works behind the desk or in the reference stacks. These days

when people refer to the Internet as a “flash in a pan,” they are likely being ironic. Nothing is easier to get a laugh at a conference than saying “This whole computer thing, it will soon blow over.” This wasn’t always the case, and Shuman does a good job equipping the librarian with the background information necessary to understand the new medium. This is important because resistance to the Internet is probably more a factor of a fear of the unknown than anything else. Librarians confronted with such challenges would do well to take advantage of Shuman’s enthusiasm for the Internet and read what he has to say on the subject. For an appreciation of any subject, it’s always a good idea to consult with a true fan.—*Steve McCann (steve\_mccann@ncsu.edu), North Carolina State University Libraries, Raleigh.*

#### Reference

1. The New Hacker’s Dictionary, [www.jargon.8hz.com/jargon\\_toc.html](http://www.jargon.8hz.com/jargon_toc.html). Accessed Nov. 18, 2003.

***High-Level Subject Access: Tools and Techniques in Internet Cataloging.*** Edited by Judith R. Ahronheim. Binghamton, N.Y.: Haworth Information Pr., 2002. xii, 115p. \$39.95 cloth (ISBN 0-7890-2024-6); \$24.95 paper (ISBN 0-7890-2025-4). Also published as *Journal of Internet Cataloging* 5, no. 4.

This collection of papers examines a problem highly relevant at the present time—achieving access to the Internet in an orderly fashion. It includes a range of approaches, the majority based on the actual experience of individual library systems, adapting traditional classification schemes to the new environment and innovative methods of subject retrieval. Much work is currently being undertaken in this area, principally on the basis of projects and approaches to find solutions for the local situation, and there is little authoritative

monograph literature dealing with the problems and possible solutions from a universal rather than local viewpoint. The introduction notes that the tools that we have at present at our disposal for resource discovery are fairly crude and posits that an approach via high-level access may be a way forward for the future.

Diane Vizine-Goetz provides the first survey, taking a more detached approach than some of the other contributors. She looks at how library classification schemes have been adapted to use for the organization and retrieval of information from the Web. Further proposed improvements include the use of a hierarchical structure to complement the alphabetical approach, and she compares the tree structures of the Internet with the Dewey Decimal Classification (DDC). She also notes the all important fact that the use of a structure rather than just an approach by keywords rises above the problems of language—the only article to mention the need for multilingual access.

Three of the contributions examine the application of the Library of Congress Classification (LCC) to the retrieval of Internet resources. All are based on projects undertaken in university libraries, those of Columbia University, the University of Washington, and the University of Michigan respectively. At Columbia (Dewey’s old library), the first phase of a project to create a hierarchical interface to the LCC is described. LCC has been mapped to the vocabulary of a three-level subject tree. Reversion to DDC was unthinkable despite its clear hierarchies, and the case is rightly made that hidden within the structure of the enumerative detail of the Library of Congress’s scheme there is indeed a hierarchical structure. It was decided that the first-level display should include no more than about a dozen categories. Other sites were surveyed, and the findings are given, providing a guide to anyone contemplating a similar

undertaking. A case study of the sciences is made, and an outline of the scheme and the categories used is provided in an appendix. The author suggests that the Columbia findings might prove valuable as a basis for the revision or even complete overhaul of the LCC. The major benefit of this Hierarchical Interface to LC Classification (HILCC) is that it provides a tool that can act as a switching language or crosswalk that could easily be applied to other systems. The project has only reached the end of its first phase, and the final product may well be of much wider interest.

The Washington experiment is based on three years’ (1998–2001) experience in designing and implementing a database of electronic resources called the Digital Registry. It concentrates more on the management issues and provides advice that any institution intending to create a catalogue of digital resources could follow. The article is illustrated by screen captures that demonstrate how attractive such a resource may be made. It is very clear about the user problems involved and the difficulties in getting people to access records via the Subject Gateway. It also notes the hazards involved in highlighting certain resources as the “Top Twenty,” which has resulted in heavy use of certain items while others are totally disregarded.

The Michigan experience outlines the attempt to provide audience-based subject access to electronic resources. A two-level subject hierarchy has been developed, the first providing a suitable list of topics for the university’s electronic resources and the second based on the university’s schools and departments. Further levels were thought to be counterproductive to easy searching. The aim is to produce a system that will automatically map the library’s LC call numbers on to the specially created structure. A pilot test produced encouraging results and found that a high proportion of materials could be

automatically mapped into categories that users found useful, but that to undertake such a project on a large scale would be both extremely time-consuming and expensive.

The penultimate article adopts a more philosophical tone and examines the requirements for the creation of a satisfactory library portal by examining work that has been undertaken both in the United States and in the United Kingdom. It emphasizes the need to avoid jargon, including such acronyms as OPAC, CAM, and LC in order to provide easy user-access and provides an interesting think piece that contrasts with the remainder of the work, all of which is based on actual experience.

The final contribution crosses the Atlantic and is an account of the preliminary findings of the High Level Thesaurus project undertaken in Scotland to provide a High Level Thesaurus to permit cross-searching and browsing by subject across the library, archive, and museum communities. The growing attention to interoperability between different vocabularies and categorization schemes and the need to standardize and coordinate approaches was the driving force for the project, which is still on-going. Once again, mapping is seen as the key to success, and the workshop organized for the project's stakeholders found unanimous agreement on this and felt that an Interactive Terminologies Route Map might provide a satisfactory way forward. Time, expense, and expertise needed again militate against its speedy completion.

In all, the collection provides valuable guidance both on what approaches might be taken and what the pitfalls are in attempting to provide high-level access to digital resources. It is realistic in pointing out the economics involved and is well worth examination by anyone considering a similar undertaking. It could have been usefully rounded off by a concluding essay to balance the introduction, and the index has some

idiosyncracies such as an entry under "library classifications" followed by a number of subheadings and references, one entry for the Library of Congress Classification referring only to page 2 whereas three articles are devoted to the application of that scheme, and a cross-reference to Dewey Decimal Classification. A similar cross reference to LCC appears under DDC, but neither is mentioned in the entry under Library Classification schemes. It also has several unsought terms, such as "McDonalization" [sic]!—*I. C. McIlwaine (i.mcilwaine@ucl.ac.uk), University College London, London, England*

***The Librarian's Guide to Intellectual Property in the Digital Age: Copyrights, Patents and Trademarks.*** By Timothy Lee Wherry. Chicago: ALA, 2002. 170p. \$38; members, \$34.20 (ISBN 0-8389-0825-X).

One has to admire an author who attempts to provide an overview of intellectual property concepts and issues at a time when so many of the topics under discussion are moving targets. This relatively short book (170 pages) covers the basic legal framework and some practical issues within the three principal areas of intellectual property—copyright, patents, and trademarks. The author, Timothy Lee Wherry, has extensive experience writing and speaking on these subjects. With this book, his goal is not to produce experts, but to help novices gain competency in fundamental concepts "without a great deal of confusion and toil" and to enable readers to make "informed decisions about their creative efforts" (viii). He particularly notes librarians and educators as the intended audience, both because of intellectual property issues arising in our workplaces and because of our role in providing information to others. The narrative is straightforward and interesting, including practical examples that make concepts memorable, and the book's brevity allows

beginners to easily compare different purposes of the law in each area.

Approaches to writing about intellectual property include historical treatments, textbook-like treatments that elucidate established concepts, practical guides for making workplace decisions, how-to instructions for obtaining intellectual property protection, and writings that address developing trends and current issues. In this book, copyright, patents, and trademarks are covered separately, and a different mix of approaches is adopted in each section.

The patent searching section—the middle and most extensive part of the book—is mostly a practical searching guide, and basic concepts are brought to light through a description of the patent search process. An excellent multistep search procedure is described, demonstrating the use of key patent search tools. The "moving target" that Wherry copes with in the patent search area is the transition by the U.S. Patent and Trademark Office (USPTO) from a CD-ROM-based system to online search systems, and some readers will be disappointed that the search strategy he describes doesn't cover all the current features of the USPTO's Web site capabilities. However, Wherry points out that systems are evolving, and because he describes the functions of the tools clearly, albeit in particular formats, the reader can translate the skills and the process to other formats, a plus since users are likely to encounter multiple formats for a while. Patent history is presented more as entertainment than an attempt to describe historic trends, and little is included about current issues. Admirably conveyed is the fact that patent searching, for inventors who want to ensure they have patentable inventions, is complex and requires perseverance. Strategies are outlined to help inventors decide how much of the patent application work to do themselves and when to think about relying on expert help. Wherry describes commercial

patenting practices just enough to show potential individual inventors the size and color of the competition, without discouraging those who are diligent and disciplined enough to work their way through the process. The book does not cover “workplace issues” of providing patent services to the public, such as what options and resources are available beyond the search tools he mentions, or common pitfalls or areas of caution service providers might encounter.

The trademark section is a fine textbook-like treatment of basic concepts such as trademark infringement, along with some searching tips. Librarians who read the sections on patents and trademarks will definitely improve their skills for conducting reference interviews and ultimately guiding library users to the information they.

Copyright issues in the workplace are of major concern to librarians, and Wherry accordingly switches his emphasis in this section away from copyright searching techniques, although he does give instructions as well as some background for creators seeking copyright protection. Rights of copyright holders and the concept of fair use are thoroughly explained, but ambitious attempts to address practical workplace issues are sometimes confusing or even misleading because of recent changes in the law. Although the book makes no claim to be the final word on workplace practices, it strays into that realm with a table that stakes out various situations as “fair use” and others as “illegal”—the table, however, is less clear than the preceding discussion. Given that the book doesn’t mention the Technology, Education and Copyright Harmonization (TEACH) Act, which was under discussion shortly before the book was published (it was enacted in November 2002), many of the discussions touching on distance education are dated. The history provided is selective, and it’s not clear why some topics are

omitted—for example, in the discussion of court cases and copyright, the Tasini case (*New York Times Co., Inc., et al. v. Tasini et al.*), and the Texaco case (*American Geophysical Union v. Texaco*) are not mentioned. Perhaps a more segmented approach would be useful for this changing environment, one that separately presents issues for Internet service providers, for distance education, and for librarians handling interlibrary loan or e-reserves. In that way, problems that weren’t settled in the law at the time of publication could at least be clearly described. Although Wherry highlights one of the problems for newcomers to the discussion—a plethora of Web sites that detail current controversies using technical or legal jargon, and which consequently don’t invite beginners into the discussion—he hasn’t entirely managed to make sense of that daunting profusion of information.

The book ends with appendixes, including a question-and-answer section that could have been more helpful if split into separate sections for copyright, patents, and trademarks, and a collection of Web sites focused on intellectual property, which would have been more useful had it been annotated. The index is extremely thorough and can even be used to locate the anecdotes that Wherry uses to illustrate his points.

Overall, the best section is the one covering patent searching, and the main strength of the book is its one-stop-shopping approach that delineates the areas within intellectual property and provides a good introductory overview for just a few solid hours of pleasant reading.—*Karrie Peterson (karrie\_peterson@ncsu.edu), North Carolina State University, Raleigh*

***Metadata Fundamentals for All Librarians.*** By Priscilla Caplan. Chicago: ALA, 2003. 224p. \$42; \$37.80 members (ISBN 0-8389-0847-0).

***Metadata and Organizing Educa-***

***tional Resources on the Internet.*** Edited by Jane Greenberg. Binghamton, N.Y.: Haworth Pr., 2000. 302p. \$69.95 cloth (ISBN 0-7890-1178-6); \$39.95 paper (ISBN 0-7890-1179-4). Also published as *Journal of Internet Cataloging* 3, nos. 1 and 2/3.

With the wealth of information on metadata available, it is a wonder that new material on the topic continues to proliferate. And a book! There is something antithetical about a book on a format designed primarily for electronic documents and information transfer. Yet here is *Metadata Fundamentals for All Librarians*, a very well-organized and researched treatise on the topic. Only last year a colleague said, “One of these days I am going to have to learn what metadata is.” While rather shocked at the admission that my colleague didn’t understand the most basic definition of metadata, it showed me that there is still a need for a text that can explain the basics of this rather far-ranging toolset used to describe resources.

Priscilla Caplan starts out simply and approachably with a definition of metadata, types of metadata, and metadata schemes. These “metadata basics” (chapter 1) alone are a welcome addition to the literature, because the chapter is easy to read and digest. So what is metadata? Many of us are familiar with the hackneyed “data about data” (2) definition, which always seem to miss the point, in my opinion. Caplan’s definition as used in current parlance that metadata describes “information objects on the network” (2) gets closer to it, but still the purpose is missing. She does eventually arrive at this toward the end of the definition section, where she goes into not what metadata is but rather what it does.

Metadata schemes are discussed in full in the second part of the book and include library cataloging, Text Encoding Initiative headers, Dublin Core, Encoded Archival Description,

and nine more metadata initiatives primarily geared to specific user groups. The author strikes a balance between the overview many readers will want to set the stage and the details—which can be prodigious—of metadata schemes. Librarians will mostly whiz through the chapter on library cataloging. While it is useful to hear that we have been applying metadata for centuries in the guise of cataloging, any further exploration into the specifics of MACHINE Readable Cataloging (MARC), Anglo-American Cataloguing Rules (AACR2), and Cutter are perhaps handled better in another publication. Yet it's a comforting foundation for librarians to anchor metadata knowledge and makes the succeeding metadata schemes follow more logically. This structure works well when Caplan builds on the AACR2/MARC discussion in the "Metadata for Education" chapter, which focuses on the Gateway to Education Materials (GEM) project.

The Dublin Core (DC) Metadata Element Set is perhaps the most well-known and widely applied of the metadata schemes discussed. As an applicator of DC metadata, I am surprised that the chapter goes into so much detail about syntaxes and extensible Markup Language (XML) coding, when the most basic application of DC into a Hypertext Markup Language (HTML) Web page provides a much more easily digested understanding of its power. Caplan does offer a succinct explanation of Dublin Core Qualifiers (see p. 78), which helps explain how its simplicity can be leveraged to offer more complex information about a resource, or indeed about the metadata elements themselves.

Metadata schemes for specialized audiences include art and architecture metadata such as Visual Resources Association Core Categories and Categories for the Description of Works of Art. The former is AACR2/MARC-based, as well as DC-based, and the latter comes out of the muse-

um tradition. A different specialized audience, government information, has the Government Information Locator Service scheme. Caplan discusses the federal initiative responsible for this as well as the state government adaptation such as WA-GILS, Washington State's version for state access to government information.

The choice to discuss Guidelines for ONLINE Information exchange is perhaps driven by the library audience for this book. It is primarily used by the publishing industry, with tangential interest to the Library of Congress.

Geospatial metadata is quite advanced, due to the detailed digital data collected by Geographic Information Systems users. The federal standard, Content Standard for Digital Geospatial Metadata, has ten types of information, each with further breakdowns that add up to 300 elements. Compared to DC's basic fifteen, that seems excessive. Yet the geospatial community utilizes a great number of them for parsing information in ways that would not be possible with the raw data. Caplan does not discuss state and local government applications that rely on geospatial metadata, which would be an interesting addition.

The other specialized metadata schemes that are treated in the book include the Data Documentation Initiative, focused on social science research; administrative metadata, intended to manage resources; structural metadata, used to describe the physical and logical structure of files; and rights metadata, which attends to information on digital rights management.

Caplan takes a sweeping look at metadata types that she thinks are of interest to librarians and hits the mark. Her approach of providing an overview plus some of the details works, for the most part, and gives a good strong foundation to understanding the many types of metadata. While the book isn't illustrated, she does include a number of coded examples

that give the flavor of the type of scheme described. I would have liked more concrete examples of projects, such as the GEM project, which rely on the specific type of metadata. Her bibliographic notes show a breadth of research and good choices for further exploration.

On the other hand, when looking at a book on metadata published three years ago, one is naturally skeptical due to the need for currency in an evolving field. In the case of *Metadata and Organizing Education Resources on the Internet*, this skepticism is not fully justified. Education is a field as old as human culture; how that field organizes its material is nearly that old. There is much to be learned from a book that looks at the many facets of educational materials and their organization, no matter what the latest coding techniques might be.

This book is a series of eighteen articles written by professionals from differing areas of education. These include library faculty, administrators, and catalogers; educational researchers and project managers; and metadata technical specialists.

Several of the articles go into depth about specific projects in the field, such as Adult Learning Documentation and Information Network, GEM, and National Engineering Education Delivery System. These articles offer overviews, research information, cataloging issues, case studies, and future strategies. This last topic helps save the book from being out-of-date. Other articles focus on traditional library cataloging of electronic resources or metadata schemes, such as ARIADNE, designed for specific materials. School libraries are included in the cataloging articles, higher education in the more research-oriented projects. Finally, there are articles on the topic of metadata itself, such as structure, architecture, interoperability, and specific schemes.

The range of topics makes this collection of articles worth reading. For one interested in only certain aspects

of educational materials organization, the specificity of the articles offers a narrower view. All are well-written and edited for ease of understanding.—*Eileen Quam (eileen.quam@state.mn.us), Minnesota Department of Administration, Office of Technology, Saint Paul*

### **The Audiovisual Cataloging**

**Current.** Edited by Sandra K. Roe. Binghamton, N.Y.: Haworth Information Pr., 2001. 370p. \$79.95 cloth (ISBN 0-7890-1403-3); \$49.95 paper (ISBN 0-7890-1404-1). Published simultaneously as *Cataloging & Classification Quarterly* 31, nos. 2 and 3/4.

The editor has divided this compilation of articles regarding the cataloging of audiovisual materials into four sections. The first section, "Cataloging Audiovisual Formats," contains chapters devoted to issues related to the cataloging of specific audiovisual formats (or categories of those formats). Authors were selected to cover popular music recordings (e.g., rock, country, rap, jazz, blues, and similar or related styles), non-musical sound recordings, video recordings, remote-access electronic resources, three-dimensional artifacts and realia, and kits. Audiovisual formats not specifically covered in this section include graphic materials, maps, and microforms. (Although there is a chapter on microcomputer software in this section, the article is focused less on cataloging than on the historical development of related cataloging rules, which is discussed more thoroughly in section 2.)

The chapters in the first section focus primarily on descriptive cataloging issues related to the format, identifying the distinctive aspects for each format such as general material designations (GMDs), sources of information, notes common to the format, as well as access points. Although several of the essays identify or address "problems" related to cataloging the

format, sometimes these problems are merely "differences" found in cataloging these materials rather than real problems. Rule citations to the appropriate chapters in the Anglo-American Cataloguing Rules, 2d ed. rev. (AACR2) and related Library of Congress Rule Interpretations (LCRIs) are found throughout, as are examples illustrating the use of MARC 21 content designation. Catalogers using this book for instructional purposes should be especially pleased to find full-record examples with MARC coding in several chapters.

The clear standout in this section is the chapter "Videorecording Cataloging: Problems and Pointers" by Jay Weitz. Given his role as the videorecording specialist at OCLC, where he handles database cleanup, problem reports, e-mails from catalogers, and so on, and his experience giving workshops related to video-recording cataloging, Weitz's understanding of the issues and real challenges related to cataloging this format are clearly evident as he addresses the trickiest issues, not only related to AACR2 chapter 7 (the Archival Moving Image Materials rules used by many film archives are not addressed), but also problematic issues such as when to input a new record and topics raised by the "notorious misbehavior of publishers" (68).

One of the risks of presenting up-to-date discussions of cataloging issues is that they are sometimes in such a state of flux that they become outdated soon after publication, by no fault of the authors or editor. The best example found in this volume is Nancy Olson's chapter on "Cataloging Remote Electronic Resources." Although still an interesting read, changes to both chapters 9 and 12 of AACR2 subsequent to the publication of this book will require additional investigation by catalogers requiring current information.

The second section of the book is devoted to the "History of Audiovisual Cataloging." Although the edi-

tor included only one article in this section, Jean Weihs's "A Somewhat Personal History of Nonbook Cataloging," the article on "The Microcomputer Revolution" by Ann Sandberg-Fox found in section one might be considered more appropriate in this second section instead. Both are historical surveys by true pioneers in the field of audiovisual cataloging, made all the more interesting by the inclusion of personal reminiscences of the authors during their many decades of involvement in the development of cataloging rules at the local, national, and international levels. Although the title of this book focuses on the "current," these two historical entries are valuable additions.

Section three is devoted to subject access issues related to audiovisual cataloging. The first is an excellent article on the history, use, and future of the *Thesaurus for Graphic Materials (TGM)*, one of the major thesauruses used for indexing visual materials. Valuable for its information on the development and use of *TGM*, this article is also a must read for anyone contemplating developing a new specialized thesaurus in order to understand the scope of issues involved in such an undertaking. Lian Ruan's article on "Providing Better Subject Access to Nonprint Fire Emergency Materials for Illinois Firefighters" will be informative to those cataloging agencies where, due to a level of collection specialization not covered by general subject lists such as the Library of Congress Subject Headings (LCSH), a multithesaural approach is required, incorporating and integrating terms from established thesauruses and locally developed terms into a single system. Martha Yee's contribution is the final one in this section, in which she compares two different genre and form lists (LCSH and *Moving Image Genre-Form Guide*) as to their suitability for moving image and broadcast materials, complemented by comparisons to a third

list, *Moving Image Materials*. The questions raised by Yee's comparisons reveal some of the thorniest issues related to form/genre implementation, especially those concerning incorporating form/genre terms into topical subject lists. Those involved in the development and application of form/genre headings should find this an informative discussion.

The final section of the book addresses "AV and AV User Groups by Library Type" with four articles covering different types of libraries: academic, public, school, and special (medical). The article on "User-friendly Audiovisual Material Cataloging at Westchester County Public Library System" by Heeja Han Chung discusses the nonstandard cataloging practices that some libraries adopt in order to provide more user-centered displays in their public catalogs and to provide functionality their users need. One issue mentioned in the article, the adoption of "understandable" GMDs and SMDs and their role in library catalogs, continues to be a hot topic, and this discussion should provide illustrative examples to those currently involved in the revision of cataloging codes.—*David Reser (dres@loc.gov), Library of Congress, Washington, D.C.*

### Briefly Noted

**Electronic Expectations: Science Journals on the Web.** By Tony Stankus. Binghamton, N.Y.: Haworth Pr., 2000. 204p. \$59.95 cloth (ISBN 0-7890-0836-X); \$24.95 paper (ISBN 0-7890-0846-7).

Tony Stankus has written numerous informative articles and books on the journal industry and this one is no exception. This book contains a collection of articles that were simultaneously published in *Science and Technology Libraries*. This book teaches the reader about the differ-

ent issues to think about when dealing with electronic journals. Some of these issues include the publishing cycle, the hardware and software needed to actually view a journal that is electronic, and the suppliers of the journals. Each of the articles has an extensive bibliography that is easy to skim, because it is organized by topic. Stankus includes resources from literature in business, publishing, computing, and librarianship. One of the most helpful sections is the rankings of journals for a variety of disciplines in the sciences that are provided with the corresponding Web sites, although when dealing with Web sites, we have to accept that some of the links will no longer be valid. This book is a great resource for those that have to work with electronic journals on a daily basis or want a better understanding of the trends and issues. It is especially useful for a library school student first learning about the collection and delivering of electronic journals.—*Tamika Barnes (tamika\_barnes@ncsu.edu), North Carolina State University, Raleigh.*

**CORC: New Tools and Possibilities for Cooperative Electronic Resource Description.** Edited by Karen Calhoun and John J. Riemer. Binghamton, N.Y.: Haworth Information Pr., 2001. 184p. \$59.95 cloth (ISBN 0-7890-1304-5); \$24.95 paper (ISBN 0-7890-1305-3). Published simultaneously as *Journal of Internet Cataloging* 4, nos. 1/2.

The editors, Karen Calhoun and John Riemer, did an excellent job in bringing together a team of authors who were intimately involved in the Cooperative Online Resource Catalog (CORC) project. They ably convey the issues and discuss the projects that were part of CORC. The first group of articles in *CORC: New Tools and Possibilities for Cooperative Electronic Resource Description* gives an overview of CORC. The second group documents the technological, organization-

al, and standards issues of the project, and the final group of articles chronicles several CORC projects from their implementers' points of view.

The CORC project began as a project of the OCLC Office of Research. In January 1999, the project came online. It offered librarians an "unparalleled opportunity to innovate" (1). The project, "designed to encourage and enhance the description of Web resources to better serve patrons" (6), was a rapidly developed project where librarians, as users, played an integral part in a product's development.

CORC ceased to be a project in July 2002. Lest one think that the time researchers and implementers spent on their respective assignments and projects was for naught, think again. The innovations and technological advancements made during this project were all made available through OCLC's new cataloging interface, Connexion.

This book was written prior to the end of the project. One can sense the excitement that many of the authors, particularly the implementers, felt at being part of such a collaborative, futuristic project. It is not only worth reading the book just to feel that excitement, but also to be able to understand what can be accomplished when a group of researchers and librarians put their heads together for a common goal.—*Betsy Friesen (b-frie@tc.umn.edu), University of Minnesota, Minneapolis*

**A History of Information Storage and Retrieval.** By Foster Stockwell. Jefferson, N.C.: McFarland, 2001. 208p. \$45 paper (ISBN 0-7864-0840-5).

There is some useful information in this book, but it does not speak to any contemporary issues in information storage and retrieval. If you are looking for a chatty narrative about the development of some Western encyclopedias, ancient libraries, and medieval scholarship, or you are look-

ing for anecdotes on Western philosophy, the Romantic Movement, and the history of science, you may find this work a pleasant read. If you are an information specialist looking for the history leading up to current topics in information storage and retrieval (such as the debates about natural language searching or developments in machine indexing), you will be deeply disappointed.

I can agree that encyclopedias, libraries, dictionaries, and the Bible are in some senses information storage devices. And I do not object to wide-ranging scholarship that attempts to connect disparate ideas or link narrower topics to broader debates, but a book with a distinct theme (encyclopedias) ought to mention the key subject in the title. Even if we forgive the title as something pushed by the publisher over the objections of the author, there is a startling lack of continuity in the work. It is incumbent on the author to follow his theme throughout the book by providing explicit connections—a general caveat in the preface will not do (see p. 2), and a sentence at the beginning and end of a chapter is not enough (for example, see chapter 7, p. 57, 64). This book seems to be a hodgepodge of subjects the author has ideas about, from sheer speculation on

Stone Age memory to Bible criticism to advice about searching the Web.

Even so, one might give an author some latitude to prove his case, link his disparate perspectives, argue in his own rambling fashion, but there is one absolutely unforgivable omission throughout the book—there are no citations. The author quotes the thinking of others without citation (for example, Wordsworth on p. 102, Darwin on p. 72, Samuel Johnson on p. 54), commonly tells anecdotes about the lives of famous personages without providing adequate references (see p. 193, for example), and does not provide a bibliography of the works he mentions so the readers might find them for themselves (see p. 25, for example). In his bibliography (193) he seems to believe he need not indicate all the works he consulted, and when he does include a work consulted in his bibliography, he still fails to link it to the text (for example, the index lists four places where Stockwell makes observations about Isaac Newton, but in no case does he cite the work about Newton that he lists in his bibliography).

This is perhaps an interesting anecdotal account of the history of encyclopedias as compendia of human knowledge, but it is not a scholarly his-

tory and it is only tangentially related to information storage and retrieval. I cannot recommend it to my colleagues in library and information science, and I would not assign it to my students.—*William J. Wheeler (william\_wheeler@ncsu.edu), North Carolina State University, Raleigh*

## **Index to Advertisers**

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