



# Library Forum

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# What is the Future of the ILS?

“The Changing Nature of the Catalog  
and its Integration with Other  
Discovery Tools,”

Final Report, March 17, 2006,  
prepared for the Library of Congress  
by Karen Calhoun, Cornell University  
Library, Ithaca NY. 52pp.

<http://www.loc.gov/catdir/calhoun-report-final.pdf>

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At EndUser, the Endeavor Users Group annual meeting, this past April, I had the opportunity to listen to a presentation that really caught my attention. In a session on “The Future of the ILS,” I heard the author of this report review her thoughts on the topic, and was intrigued enough to look for and read her full report.

In 2000 the Library of Congress sponsored a three-day symposium on the future of libraries. As a result of the symposium, they generated a list of questions and topics that should be more deeply investigated. In 2005, as one of many investigations and reports, LC contracted with Karen Calhoun, Assistant University Librarian for Technical Services at Cornell University Library, to conduct an assessment of the current role of library catalogs and their relationship to other information discovery tools. Karen Calhoun’s research was specifically focused on research libraries, but the messages are relevant to academic libraries like ours, and her suggestions for action are ones we should examine to perhaps provide inspiration and direction.



## Questions for Interviewees

1. How should the library online catalog change to maximize its utility for users served and for internal operations?
2. How should ILS vendors be positioning their products for the future?
3. To the present, the catalog has focused on book editions and serial titles; in the future, what should the scope of information objects in the catalog be?
4. What are the future roles of MARC and cataloging rules?
5. What are the unique benefits of the library catalog to users?
6. What are the most important challenges to the integration of library catalogs with other discovery tools available to users?

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Ms. Calhoun's research process included an extensive review of relevant literature since 2000, from which a half dozen key questions were distilled; and on in-depth interviews based on those questions with some two dozen leading librarians and others who could address the issues knowledgeably.

The questions as you see them here are slightly paraphrased and shortened, but their gist is clear: if we take as a given that there is value in library catalogs, and opt to keep them and keep maintaining them, then where do we have to look to make changes?



## *The Catalog's Future* Where we are

“...the legacy of the world’s library collections is for the time being tied to the future of catalogs. At the same time, a large and growing number of students and scholars routinely bypass library catalogs in favor of other discovery tools, and the catalog represents a shrinking proportion of the scholarly information universe.”  
(Calhoun, p. 9)

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Ms. Calhoun’s report is some fifty pages, but is formatted in several rather short and very readable and pithy sections. In less than twenty pages she distills her interview results and literature review into a compact assessment of where we are now, summed up in the quote here: <slide>

Catalogs are expensive to maintain following the practices we’ve evolved over a century, yet they are pretty much the only way to discover the contents of largely print-based collections. Users who prefer to rely on search engines to find information are very often willing to settle for the information they can get easily, rather than the really good information which they could only find by using a particular library’s online catalog. This is a great dilemma for libraries – if we concede that we probably need to maintain our investment in our legacy collections and catalogs, what can we do to leverage that investment?

# The Catalog's Future

## What to do about it

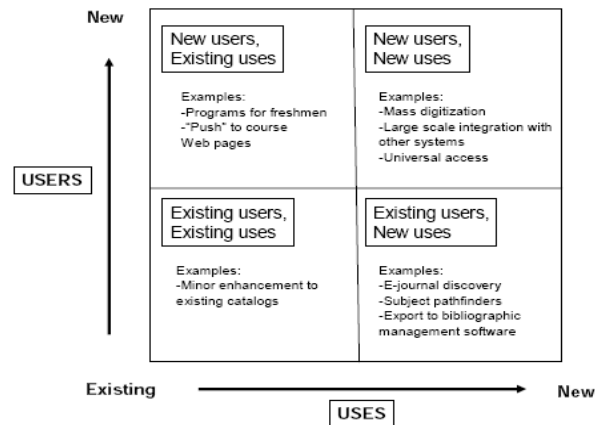


Figure 1. Revitalizing the Research Library Catalog

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Ms. Calhoun's literature review and environmental scan included some material from business. Having identified integrated library management systems as mature systems, and today's online catalogs as reaching the end of their product life cycle, the business world suggests several strategies for revitalizing a product when it's desirable to extend its life cycle.

These strategies are reflected in the figure on the slide, along with just a few representative examples to help clarify the model:

- In the lower left, the revitalization strategy is to look for ways to improve or promote existing uses for existing users – probably not a strategy which can significantly revamp the attitude toward online catalogs.
- Moving to the lower right, we see developing and promoting new uses to existing users – among the examples given here, at GVSU we're already providing links to e-journals through our catalog, and could begin investigating exports to RefWorks, our new bibliographic management software.
- In the upper left, the strategy is to promote use of the existing online catalog to new users – we have actively promoted the catalog along with our other resources as part of our library instruction for years, and last year we began linking the catalog from our main library web page and from subject area web pages. Some instructors get assistance from us with creating links to course reserve and the catalog from their Blackboard pages.
- Ms. Calhoun describes the upper right quadrant as "the place where transformative, higher risk, long-term, and typically costly strategies reside" – developing new uses of the catalog focused on delivering additional new information discovery services to new groups of users.

Some blend of these strategies will be necessary, she believes for every library to leverage its catalog and catalog management investment.



# The Catalog's Future Options and Strategies

- **Extend** – involves innovations and cost reductions
- **Expand** – attract new users for catalog data and library collections
- **Lead** – significantly expand the library's role in developing information systems that support teaching, learning and research on a global scale

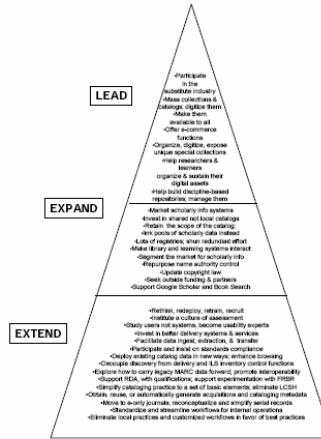


Figure 2. Options Organized by Type of Strategy

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Drawing again from business models, Ms. Calhoun divides a list of thirty-some options for remedying flagging catalog use and the financial burden of maintenance into three broad action strategies:

- Certain kinds of innovation combined with streamlining and cost reduction can **EXTEND** the life cycle of the catalog;
- **EXPANDING** the market for our catalogs can be achieved by developing ways to attract and serve new users;
- **LEADING** involves conceiving and implementing changes which significantly transform the role of the catalog and the clientele served; Ms. Calhoun observes that “To date, there is no fully realized, practical example of the leadership strategy among research libraries, although some library leaders appear to be at the perimeter of this unexplored country.”

Keeping in mind the report's focus on leading research libraries, in contrast to the mission of a library at a comprehensive university like GVSU, let's take a closer look at the “Extend” options...



# The Catalog's Future Options and Strategies

- Extend – involves innovations and cost reductions

## EXTEND

- Rethink, redeploy, retrain, recruit
- Institute a culture of assessment
- Study users not systems, become usability experts
  - Invest in better delivery systems & services
  - Facilitate data ingest, extraction, & transfer
- Participate and insist on standards compliance
- Deploy existing catalog data in new ways; enhance browsing
- Decouple discovery from delivery and ILS inventory control functions
- Explore how to carry legacy MARC data forward; promote interoperability
- Support RDA, with qualifications; support experimentation with FRBR
- Simplify cataloging practice to a set of basic elements; eliminate LCSH
- Obtain, reuse, or automatically generate acquisitions and cataloging metadata
  - Move to e-only journals; reconceptualize and simplify serial records
  - Standardize and streamline workflows for internal operations
- Eliminate local practices and customized workflows in favor of best practices

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The EXTEND strategies include a number of options that are well within our grasp, and even within our current practice. In particular within the last year we have set things in motion to do some of the following, as a result of our personnel and budget restructuring, and our participation in the university's increased emphasis on strategic planning and educational outcomes:

- Rethink, redeploy, retrain, recruit
- Institute a culture of assessment
- Study users not systems, become usability experts
- Invest in better delivery systems & services
- Obtain, reuse, or automatically generate acquisitions and cataloging metadata
- Move to e-only journals; reconceptualize and simplify serial records
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# The Catalog's Future Blueprint for Action

1. Define the Community to Be Served
2. Choose a Strategic Option\*
3. Prepare for Linkages In and Out of the Catalog and/or ILS\*
4. Innovate and Reduce Costs\*\*
  1. Obtain Metadata
  2. Support Browsing and Collocation
  3. Streamline workflows
5. Improve the User Experience\*
6. Make Good Decisions
7. Market the Library
8. Manage Change\*
9. Develop, Retain, and Recruit
10. Find Funding and Partners\*

*\* The Author believes these may offer the greatest rewards*

*\*\* Includes things we're beginning to do already*

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The main part of the report concludes with a quite detailed list of items comprising a “blueprint for action.” I would propose that this blueprint, or action outline, would serve very well as a document that we would be well served to study. We could readily use it as a “yardstick” for gauging what areas we’re already moving ahead in proactively, areas where we could consider making changes, and areas where we might want to keep our eyes open during the short term, to see what trails may be blazed by the big research libraries to our eventual advantage.

Ms. Calhoun indicates areas where she feels the greatest payoffs may lie, marked by the red asterisks. I believe that we’ve already made some significant moves in area (4), and that for a library like ours, at an institution like Grand Valley, this section of some 30 suggestions for focused action would be an excellent list for us to review closely.





## What is the Future of the ILS? Conclusion

“...even if digitization occurs at [a very great rate] ... it may be safe to say that catalog records will have a role to play ... for at least a couple of decades ...”

BUT

“... students and scholars are bypassing the catalog in favor of other information sources, and the catalog represents a shrinking percentage of the scholarly information universe.” (Calhoun, p. 27)

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Ms. Calhoun reiterates in one of her appendices that the issue before us in the profession is huge: our catalogs are valuable tools, but ones we need to manage and leverage in the face of a complex, diverse, and swiftly moving new technological environment, and new and changing user expectations. With the tools and insights she offers in “The Changing Nature of the Catalog and its Integration with Other Discovery Tools,” we have an excellent opportunity to get on with the task of evaluating our local environment and choosing our leveraging strategies.



# Cataloging for the 21<sup>st</sup> Century: Metadata Standards and Applications

A two-day workshop jointly sponsored  
by LC and ALCTS (Association for  
Library Collections and Technical  
Services), 11-12 May 2006

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In May I was able to participate in a Library of Congress co-sponsored workshop which, I believe, is also part of LC's efforts to help libraries and the people who work in them keep up in changing times.

Over two very full days the instructors presented an excellent overview of digital libraries in contrast to traditional libraries, and of the range of issues and concepts crucial to understanding cataloging issues related to digital libraries. I'll try to share just a few insights which particularly struck me...



## What *is* 'metadata'??

“Data about other data, commonly divided into descriptive metadata such as bibliographic information, structural metadata about formats and structures, and administrative metadata, which is used to manage information.”

<http://www.cs.cornell.edu/wya/DigLib/MS1999/glossary.html>

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In a nutshell, “metadata” is data which describes and represents something else. A familiar example might be a recipe, say for Red Velvet chocolate cake: the recipe card in your file is not the cake itself (and certainly wouldn't taste good to chew on!); but it enumerates the components of the cake and describes the procedure for combining them. A cookbook is a metadata file, typically indexed by names of dishes included in the file, by key ingredients in the various dishes, and by types of dishes – appetizers, entrees, side dishes, desserts. Descriptive cataloging is metadata, and AACR2 is a metadata scheme: a catalog card is not the book itself; but it describes a particular edition of a particular book in some detail, following a set of rules for creating the description. The catalog that the card is part of is a file which indexes a whole collection, and provides access by authors, titles, subjects and call number classification. MARC format is another metadata scheme, which overlays descriptive cataloging: it assigns numeric representations to parts of the textual description, to better facilitate machine manipulation of the descriptive data.

So it turns out that you already knew what metadata is; you probably just didn't know you knew! Here are a few key concepts I brought away from the workshop discussion of metadata in the context of the burgeoning world of digital data which we need to start learning to organize and access--



## Key concepts: *Introduction*

- “We are in the Stone Age of metadata creation and management”
  - Traditional libraries vs. digital libraries

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“We are in the Stone Age of metadata creation and management,” stated Diane Hillman, one of the presenters – this is new territory, and we’re only just beginning to figure out what it’s all about. Traditional libraries are built and managed within the context of a firm commitment to standards, agreements on quality expectations, and a tradition of sharing; and ample documentation and training are available. In contrast, digital libraries adhere to no particular content standard, employ a variety of descriptive “schemas” or “element sets,” and exhibit very low quality expectations; there are only the most nascent bases for sharing metadata, and very little documentation and training is available. “Bibliographic control” will move from expert production of individual records to management of bulk data; the needs are the same, but the scale is very different, and different aspects of the process become important when bulk data is being imported, exported, and automatically harvested. Martin Kurth, the second instructor, summarizes: “Catalogers most often are attempting to fit new items into an already existing world of materials, and the structure already exists, as do the rules for describing traditional materials; digital metadata practitioners are generally working with aggregated “stuff,” attempting to find a way to make it accessible – this involves broad understanding, the ability to work with others to make decisions that work for whole projects or domains.”



## Key concepts: *Approaches to Metadata Creation, Storage and Management*

- Digital data management very often involves bulk manipulation of large bodies of data
- ILS systems vs. content management systems

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Digital data management – the creation and/or augmentation of sets of digitized and/or born digital data – very often involves very large bodies of data. We need to move away from the idea of adding and updating metadata records one at a time, which we've become adept at in traditional library practice. In our ILSs we've already begun to move toward more batch-oriented processes; folks in authority control were among the first to deal with maintenance of data in big batches, and have had to do this in the context of ILS systems which often lack good tools for doing easy, efficient batch processing. Content management systems (e.g. institutional repositories) also tend to lack built-in tools for good batch data maintenance.



## Key concepts: *Metadata interoperability and distribution*

- Resource discovery
- Resource “sharability”

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The purpose of “interoperability” in the digital information arena is, for users: resource discovery – what’s out there, can I use it?; and for resource creators is: distribution and marketing – how to increase the number of users who can easily find this resource, and how to justify the funding required to make these resources available. Setting up a system so that metadata is harvestable, maximizing exposure to users, depends on good technical support. Digital data management is generally not a one-person operation; it’s a partnership that takes bibliographic management skills *plus* more technical scripting and programming skills. Mapping and cross-walking between multiple unlike metadata schemas in order to share data and build digital libraries are *the most* fundamental elements of working with metadata – this is where the intellectual effort of digital library management is.



## Key concepts: *Application Profiles*

- Documenting local decisions and practice

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Digital data management is so new and wide open that there are few standards or common agreements. This is very much in contrast to traditional cataloging in conventional libraries, where standards and common practices have evolved over a century, so that many assumptions can safely be made about the form, content, and meaning of the metadata in our online catalogs.

To compensate in digital data management, it's necessary to focus less on what's the "right" metadata schema (or thesaurus, or metadata mapping, etc.), and be rigorous instead about taking care in selecting or developing the most effective choice for the present project and *documenting the local decisions*. "Application profiles" should be created and maintained for every digital project, in order to record and share local decisions about options applied.



## Key concepts: *Quality Considerations and Metrics*

- GIGO: Garbage In, Garbage Out
- Quality criteria:
  - Completeness
  - Accuracy
  - Provenance
  - Conformance to expectations
  - Logical consistency and coherence
  - Timeliness
  - Accessibility

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Metadata quality is key to effective user access to the content of a digital collection – if the metadata is no good, content cannot be accessed reliably, and this is especially true for collections of non-textual data. Criteria for metadata quality include: completeness, accuracy, provenance, conformance to expectations, logical consistency and coherence, timeliness, and accessibility. Improving metadata quality includes developing documentation in the form of basic standards and best practices, maintenance of local vocabularies, i.e. thesauri, creation of application profiles, developing training materials, etc.; and culture change in the form of support for developing documentation and standards, and doing more focused research on practical metadata use and quality considerations. In traditional libraries and cataloging a lot of this has been done, and is overseen by OCLC and other cooperative organizations; this is not yet the case for metadata projects today. It is necessary to recognize that there is a cost locally for each library to support the documentation and culture change efforts which will make their digital data management and sharing projects successful.





# Questions?

Thank you for letting me share some of these challenging new ideas with you!

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