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**Recommendations for urgently needed improvement of OPAC
and the role of the National Bibliographic Agency in achieving it**

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Abstract

Today's information seekers have been conditioned by Web search engines to expect immediate gratification as the result of user-friendly Web experiences. In contrast, it is increasingly apparent that traditional library OPACs do not provide the same ease of use or access to information. National Bibliographic Agencies (NBAs) and libraries everywhere need to respond to this discrepancy by initiating measures to enrich their databases and bibliographic products with much more information than is currently captured in records for resources. At the same time, NBAs must address the need for a new generation of OPACs that offers significantly enhanced functionality, much of which can be based on standard features of Web search engines and online bookstores. In view of alternatives available to information seekers, these needs require immediate attention if NBAs and libraries are to retain the support of satisfied users into the 21st century. This paper offers specific recommendations to assist them in identifying and implementing appropriate responses.

This presentation begins with the observation that, within the past decade, information seekers have considerably increased their expectations for rewarding informational search experiences as a result of their pursuit and use of Web resources. Today's users of national bibliographies and library OPACs expect access to information well beyond what can be offered by traditional approaches to bibliographic description and access. I will explore this development from two perspectives: (1) the need for bibliographic databases to provide access to much more content than has traditionally been offered; and (2) the need for a new generation of OPACs that offers significantly enhanced functionality, mostly based on standard features of Web search engines and online bookstores. Because of their prominence, National Bibliographic Agencies (NBAs) are well positioned to lead the way to meet these needs, both through enhancement services they themselves might undertake to initiate and through their ability to influence developers and vendors of Integrated Library Systems and similar tools.

In the past century, NBAs and other cataloging agencies sought to achieve bibliographic and inventory control of their resources through the production of bibliographic records for those resources. The emergence of the International Standard Bibliographic Descriptions, which identify the elements and their order to comprise the description, as well as format standardization such as UNIMARC and MARC21 fostered a significant increase in record exchange. Emergence of the Functional Requirements for Bibliographic Records (FRBR) and the ongoing development of an International Cataloguing Code (ICC) comprise two additional IFLA initiatives aimed at promoting the goal of Universal Bibliographic Control. As valuable and important as are these and other international achievements, they are generally focused on the creation and communication of traditional bibliographic descriptions, and have mostly addressed the basic features of library resources – in other words, the descriptions have been essentially limited to the mandatory data elements set forth by the ISBDs.[1]

Today's users are increasingly conditioned by their Web experiences to expect quick and easy access to information and to appreciate results that help them decide on the utility of the information returned. In the environment of the national bibliography and library catalog, these expectations underscore the need for bibliographic enrichments that are normally not provided. Yet, because of automation and other related developments, a range of information could easily and cheaply become a regular feature of our bibliographic databases. Let me explain how this is so, citing the experience of the Library of Congress where we have successfully implemented a suite of projects aimed to link researchers, catalogs, and Web resources; to increase the content of the catalog record itself (e.g. to include tables of contents and reviews); and to link bibliographic descriptions to related electronic resources (e.g. Web access to individual publications within series).

In 1992, LC's Director for Cataloging approved formation of the Bibliographic Enrichment Advisory Team (BEAT), entirely comprised of voluntary staff from a variety of service units, to conduct research and undertake initiatives to enrich bibliographic records. The team was encouraged to work "outside the box," and was exempted from the restraints of many of the policies and practices pertinent to traditional cataloging activities. BEAT was instructed to create and use automated methods to accomplish its work and to minimally impact the activities of staff responsible for traditional cataloging[2].

One of BEAT's first efforts focused on enriching bibliographic records to include tables of contents (TOCs) information, because study after study had concluded that such information greatly improved the retrieval function of the database and improved the user's catalog experience in several ways. For example, research conducted in the 1980s and 1990s established that TOCs help users to better determine the relevancy of particular titles to their informational needs, that words in TOCs greatly improve search effectiveness, and that TOCs provide the means for overcoming traditional limitations of subject searching. Indeed, an eleven-year longitudinal study determined that "subject searching [is] being replaced by keyword searching," a point directly relevant to TOCs, since they are entirely composed of keywords[3].

Since the Library could not afford to let staff manually key TOC data, BEAT's challenge was to find a programmatic solution to achieve this enrichment goal. Indeed, BEAT responded with several tools and programs. The first was creation of an application called "Text Capture and Electronic Conversion" (TCEC) for use in cataloging publications that LC receives electronically from publishers participating in the Cataloging-in-Publication (CIP) program. Using the TCEC software, the cataloger highlights the TOC from the electronic manuscript. The program then manipulates the TOC data and adds the result into the catalog record's 505 field (which in MARC21 is designated for table of contents information). The manipulation that TCEC performs includes formatting the contents information to AACR2 specifications for recording TOC data – for example, deleting chapter/section/part terms and numbering, eliminating pagination, and adding ISBD punctuation. TCEC also converts all words to lower-case, except for the first word in each chapter title, so all the cataloger needs to do is to highlight any proper nouns that should be capitalized. Best of all, the transfer of information from the manuscript to the record is accomplished in seconds, and the data are recorded as accurately as they appear in the electronic manuscript. To date, a total of more than 40,000 TOC notes have been created using TCEC[4]; the number is expected to rise as publishers are continuing to increase their CIP submissions in electronic format. This year alone some 35,000 electronic manuscripts were received for cataloging; 35% - 40% of the resulting bibliographic descriptions qualified for inclusion of TOC data.

For this project and the other TOC efforts, three major criteria are invoked for the purpose of selecting publications for processing:
1. The chapter titles need to improve natural language key word searching.
2. The chapter titles need to provide a greater understanding of the contents of the item than what is conveyed in the title and statement of responsibility area.
3. The TOC data cannot require extensive manual editing to prepare it for machine manipulation.

Fortunately, almost anyone is able to apply these criteria in making quick decisions.
Three other TOC projects are largely driven by software applications. The first is the Digital Tables of Contents (D-TOC) project, which began in the late 1990s. This undertaking depends on staff, mostly entry-level technicians and high-school interns, to scan TOCs from publications selected according to pre-determined criteria, such as those mentioned above. At that point, a software application takes over; the scanned TOCs are converted to text using optical character recognition (OCR), and then HTML-encoded and placed on one of LC's Web servers. In the

process of this conversion, the underlying MARC catalog records are also modified automatically to include links to the TOC data, thus making linkage reciprocal between the two information sources. To improve retrieval, words from the title and statement of responsibility fields of the bibliographic record are presented at the beginning of the TOC display. Also, the keyword metadata tag in the TOC HTML file contains the words from the subject-access terms in the bibliographic record. The Web-based TOC provides a direct link to the underlying catalog record, and in turn the catalog record provides a reciprocal link from the 856 field to the Web TOC record. Moreover, as Yahoo!, Google and other Web search engines index these D-TOC records, Internet users not only discover the HTML records but also are given the opportunity to access the LC OPAC through links in these records. Interestingly, as of June 6, 2005, a Yahoo! search on the phrase "contents for library of congress control" produced a result set numbering 262,000 entries, all of them linking to D-TOC records.

To date, about 30,000 TOCs have been posted to the Web as a result of this project, currently at a rate of around 300 per week. Recently, the D-TOC project was expanded to include some retrospective collections to provide coverage for publications in other languages, beginning with German. D-TOC production should further increase soon, because the Library has several overseas offices (Cairo, New Delhi, Islamabad, Rio, Nairobi, Jakarta), where efforts have begun to involve them in creation of TOC files for transmission to LC.

The most productive and least costly of BEAT's TOC projects is the ONIX-TOC application that was initiated in 2000. This undertaking involves extracting TOC data from publisher-supplied ONIX files. This project is operated by a Visual-Basic program that scans a group of ONIX files to create digital tables of contents that are then posted to the Web. As with the D-TOC project, each of these ONIX-TOC records offers the user an option to visit the bibliographic records in the LC online catalog for further information. Similarly, the bibliographic records in the Library's OPAC are programmatically enhanced by links in the 856 field to the ONIX-TOC files. Some of the ONIX-TOC records also include images of book-jackets. Currently, more than 50,000 of these records have been created; and, they plus the D-TOC records registered more than six million hits by July 2005.

The most significant limitation of the D-TOC and ONIX-TOC projects was their inability to influence retrievability of bibliographic records from within the OPAC, since the records take the form of data available on the Web. A major breakthrough occurred earlier this year, however, with development of a programmatic solution that has made it possible to parse and automatically extract data needed for the body of the TOC text from the existing Web-based digital TOC records. This information is then modified to conform to the format required by the Library's ILS, thus allowing the TOC to be added to the catalog record. Because these TOC notes do not fully conform to AACR2 specifications, they are introduced with the caption:"Machine generated contents note." Not only will this technique be applied for the future, but BEAT staff are running programs against files of the 30,000 D-TOC records created in the past. Work will be initiated to see if the same kind of approach can be applied to the ONIX-TOCs, which meanwhile are accessible only via Web search engines and through hyperlinks in the bibliographic record in OPAC.

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I have gone into some detail with regard to the table of contents bibliographic enrichment projects in order to make clear the role that automation plays in enriching the content of bibliographic descriptions. In none of these efforts is there much cost in terms of staff time, once programs are written and implemented. In terms of actual operating expense, the figures are amazingly low. For example, the overall average cost of creating ONIX-TOC records is estimated at around $0.10 (US) or less each.

TOCs are only one type of enhancement activity now underway at LC. Without going into much detail, let me mention some of the others. First is a series of projects based on freely available ONIX data, beyond that used for tables of contents. One ONIX application LC has put into operation provides Web and OPAC users with access to summaries created by publishers to provide an indication of the content of their books. BEAT staff perform an initial evaluation of these summaries before deciding to process them. For example, if the descriptions of a particular publisher seem overly promotional, they are rejected. And, once a source of these summaries is accepted, each record that is enriched with links to them carries the disclaimer that the "information [is] from electronic data provided by the publisher" so that users will understand that the source of the summaries is not LC. To date, more than 100,000 records have been upgraded to provide access to these descriptions.

In another ONIX project, files of sample excerpts (usually one or more chapters or a preface) supplied by the publisher are placed on the Web, and links are added to their related bibliographic records. Some of the sample chapters are available in HTML, while others exist as PDF files, which, in the cases of any that are illustrated, make it possible for users to view enlargements of illustrations. More than 17,000 sample excerpts have been processed to date.

Finally, beginning last year, publisher-supplied biographical information about contributors to selected publications has been posted to the Web and linked to appropriate bibliographic records. To date, more than 12,600 of these enrichments have been processed.

In another area of bibliographic enrichment activity, BEAT has initiated arrangements that have resulted in providing access to scholarly annotations and reviews for particular acquisitions. In some cases, as with the TOC projects, access is to information that is captured and then posted to the Web, with links added to appropriate bibliographic records. In other cases, the annotations and reviews are actually added to the bibliographic record. The extent of the text is the major criterion in deciding which technique to apply. In the case of shorter reviews, a program automatically extracts and inserts the information into the corresponding bibliographic records. On the other hand, when the reviews are extensive or include footnotes and bibliographies, they are put on the Web and links to them created in related bibliographic descriptions. In every case, the Library arranges for permission to copy reviews used onto one of our servers to ensure their longevity.

Sources for the annotations and reviews project are expected to meet particular criteria. To be selected, the reviews must be freely available, stable, scholarly, attributable, and in the form of files that can be programmatically matched. Because so many firms that publish reviews as a source of income, BEAT's reviews project has grown less rapidly than its other enrichment

projects. But, to date, seven contributors have been recruited, including:

$ "Outstanding reference sources" from the American Library Association's Reference and User Services Association.
$ Sites selected by this Association's Machine-Assisted Reference Section Best Free Reference Web Sites Committee.
$ *Handbook of Latin American Studies* published by the Library of Congress.
$ *H-Net Reviews in the Humanities and Social Sciences*, an online scholarly journal
$ *Library Resources and Technical Services*, published by the Association for Library Collections and Technical Services
$ *Education Review* (Arizona State University)
$ *Bryn Mawr Classical Reviews*

Two additional BEAT projects that also operate mostly on the basis of software applications demonstrate how the national bibliography and other agencies can enhance access by linking bibliographic descriptions directly to full-text electronic resources. The first is "Web Access to Publications in Series." This initiative aims to increase utility of valuable grey literature in business and economics. By May 2005, this project has resulted in production of links that access many thousands of individual titles, which are contained in some 305 series of mostly a research-and-development nature. Of these series, nearly 40% were previously not represented in LC's OPAC. To enable creation of individual bibliographic records for the individual monographs in these electronically-issued series, a program named "Web Cataloging Assistant " was produced. It creates MARC records by extracting and manipulating data directly from the monographic titles within the series selected for analysis. Using this tool, a technician consults the abstract page for the monograph and pastes the URL for that page into the program. Web Cataloging Assistant then retrieves the Web page, captures text from that page relating to the title, author(s), series numbering, summaries, and keywords if available. The program also adds some additional basic information in the form of standard notes. Web Cataloging Assistant then adds these records to the Library's database. This program also alerts staff via automatic email notifications when new material has been added to the Web sites that societies and the like create for their publications. Nearly 3,000 records were created using Web Cataloging Assistant between June 2004 and July 2005. The tool has not only enabled the Library to provide access on a much more timely basis to this grey literature but to do so at a fraction of the normal cost for even a minimal level record.

The final BEAT project that I will describe is its "Web Access to Works in the Public Domain," the purpose of which is to enable full-text retrieval of electronic versions of printed monographs in LC's collections. This project is the result of several cooperative partnerships whereby trusted repositories provide LC with a machine-readable list of URLs and Library of Congress Control Numbers for monographic publications that they have digitized for public consumption. A software application at LC takes this information, identifies the appropriate bibliographic records for the print version that are within LC's collection, and then adds the URLs for the electronic versions. The result is that the catalog user is given immediate access to the electronic version and need not retrieve the print version. The cooperating library is cited in a note that identifies and thereby publicizes the collection in which the electronic version resides.

The bibliographic enrichment projects I have described demonstrate how, in the electronic era, one national library is taking traditional services and providing new and improved ways to capitalize on them in the digital age. These projects are easy to organize and inexpensive to operate. They require only a modest amount of dedicated staff, mainly to develop the software applications mentioned. Once in place, the programs mostly operate autonomously in the background. Many National Bibliographic Agencies have the expertise needed to replicate this functionality, and by doing so they could open doors to their databases, OPACs, and holdings. Activities such as those described respond to users who are increasingly accustomed to the instantaneous results of keyword searches and who want more than basic bibliographic information. Through providing these enrichments, national libraries serve the extended information needs of the researcher, offer structured pathways to their own information resources, and thereby entice patrons to continue to value their bibliographic products and services. Enrichments will also enable OPACs to better function as rewarding access mechanisms.

With that thought, we now turn to the second topic I propose to address: the need for a new generation of OPACs that offers significantly enhanced functionality, much of which can be based on standard features of Web search engines and online bookstores. To begin on the positive side, let me acknowledge that today's OPACs overall perform an expanded list of tasks quite effectively. Indeed, one of the 20th century's grandest information technology accomplishments was the transformation of the library card catalog into the online public access catalog, the centerpiece of today's Integrated Library Systems (ILS). IFLA's emerging International Cataloguing Code specifies five basic functions for this tool – finding, identifying, selecting, obtaining, and navigating – and, most would agree that the current generation of OPACs performs these task competently.

But, increasingly, concerns are being expressed in the literature and elsewhere that our online catalogs seem to be nearing their maturity, and that, in particular, they are not well suited for retrieval of the ever increasing quantity of digital resources. As electronic journals become a bigger and bigger component of national and research libraries everywhere, OPACs easily retrieve bibliographic information about the journal titles, but generally they do not enable users to directly discover individual articles they contain. NBAs and libraries in general simply cannot afford to develop bibliographic descriptions below this level. Also due to economic constraints, OPACs will at most provide access only to a relatively small selection of remotely accessible electronic resources, including citation databases, full-text aggregations, online reference tools, and Web sites, because these resources are typically massive and fraught with complexity as to defy universal and up-to-date bibliographic control.

Increasingly, users do not depend on the OPAC to reach the resources in which they are interested[5]. Rather, the vast majority has readily turned to fast and often precise search engines like Google that were developed in response to the proliferation of Web materials. Indeed it seems indisputable that the vast majority are satisfied with such tools, even though they often encounter voluminous and imprecise result sets[6]. Around the year 2000, however, new library systems for responding to more granular information requests began to appear, some homegrown and others as commercial off-the-shelf products. These tools include federated search engines

(sometimes called "portals"), OpenURL resolvers, and electronic resource management systems (ERMS), all aimed at connecting the user with electronic resources, including those available within a library's collection but not accessible via the OPAC as well as those remotely accessible on the Web[7].

Together, these new tools seek to provide functionality that enables a single search of a large number of high quality bibliographic databases and full text resources, including information within the deep Web, leading users to the best material and providing comprehensive retrieval for a topic or task – with the ease of using a search engine such as Google. Although the initial versions of these tools fell clearly short of the goal, almost every major library has acquired an array, because they offer users ready access to information itself, not simply bibliographic descriptions of materials of likely interest. Indeed, OpenURL resolvers, federated/ metasearching applications, and ERMS have proved so useful, and demand for them is so great, that competition has spurred vendors to invest generously in efforts to provide the most sought after improvements.

Despite the emergence and enhancement of these necessary tools, for the most part they remain outside the realm of the OPAC. Thus, in his introductory remarks to "The Future of Integrated Library Systems: An LJ Round Table," Brian Kenney observed:

> The potential to improve interoperability drives librarians to look more critically at ILS. Some wonder whether the information portal of the future should be based on a single ILS or instead be a collection of products from different ILS vendors. This piece-meal approach to interoperability in the library marketplace has been created by the vendors themselves, with such products as Ex Libris's SFX, a tool for reference linking, and Endeavor's ENCompass, a product for creating and managing digital content. Standalone products for linking and digital management accounted for nearly 13 percent of the ILS market last year[8].

This observation remains as true today as it was when written in 2003.
The Library of Congress is interested in exploring development of a strategy to achieve better alignment of OPAC functionality with the features of these new tools. As a result, LC is funding a research paper to examine the changing nature of the online catalog, including consideration of a framework for its integration with these other discovery tools. This undertaking will provide an opportunity to explore an expectation of Sarah Thomas who foresaw as early as 2000 the eventual "reinterpretation" of the catalog to become "an information service which registers in a systematic arrangement those publications and documents of interest to a particular community, regardless of the form in which they appear." She anticipated in the near term the emergence of a "hybrid, which will adopt some of the superior features of the catalog, but which will employ an increasingly sophisticated technological infrastructure to increase the yield for information seekers.[9]" The LC research project, to be undertaken in consultation with numerous experts, is intended to identify what might be done now to move toward such a goal; the recommendations, which will be widely shared, will include practical next steps.

Beyond the task of achieving this integration of functionality, the next generation of OPACs will need to offer many additional features if NBA services and catalogs are going to successfully

compete with today's leading resource discovery applications, as represented by commercial search engines and online bookstores.   In their study on "The Impact of Web Search Engines on Subject Searching in OPAC,"[10] Yu and Young found that "the use of Web search engines is sufficiently ubiquitous to have an impact on users' expectation of a Web-based OPAC." Their research led them to advocate an array of features for the next generation of Web-based OPAC interfaces in order to produce systems for users "who are likely to bring a mental model of Web search engines to the library catalog." Specific functionality Yu and Young recommended include:

$ Menu sequencing: Studies have shown that users choose search options at the upper-end of lists, so careful consideration needs to be given to approaches presented at the top. Thorne and Whitlach found that menus should strongly encourage novice users to start with keyword searches. At the California State University, Los Angeles, transactional log analysis suggested improved user success when the search interface was redesigned to provide the following sequence: keyword/phrase, title, author, subject (specifying "Library of Congress Subject Heading" required), and call number.

$ Browsing features: Hancock-Beauliue found that between 30 and 45 percent of online searches were followed by browsing library shelves. According to Yu and Young, "a browsing option can assist users to effectively find the desired documents by clustering related documents based on terms in a thesaurus.

$ Results displays: The impact of Web searching on users has led them to expect graphics, such as icons for display of information. OPAC displays should be redesigned to incorporate graphics that facilitate screen reading and comprehension of labels.

$ Relevance rankings: Users of Web search engines depend on them to prioritize result sets. Rarely do most users scroll past more than a few pages of references. Yu and Young recommend relevance-ranking algorithms to include date of publication and subject headings and terms, adding that "user popularity and term frequency in tables of contents" might also be among factors used.

$ Provision of helpful hints: OPACs should be enabled to provide help without users' requests, offering tools and concepts to generate better searching strategies. Additionally, systems should generate search tips on the fly, and in the case of zero-hits search results, suggest alternative spellings or wording.

Yu and Young advocate other features frequently offered by search engines and online bookstores that need to be incorporated into the next generation of OPACs, because they add value to the experience of those seeking information. Increasingly, professional literature is recording articles by many others who share these recommendations.

$ Spelling correction capability like Google's "did you mean this" feature. Yu and Young suggest that misspellings recorded by catalog transaction logs could be used as a basis for enabling OPACs to provide this service.

$ User-popularity tracking, such as found on Amazon.com. Catalog users would be provided with an opportunity to comment on selections to serve as a sort of

"recommender system;" their comments together with circulation correlations could serve as the basis for alerting users to the availability of similar holdings.

$ Natural language searching such as featured with Google 's single-search box feature. Catalog users should be able to enter titles with initial articles and author names in any order just as they are able to do when using search engines.

The Library of Congress recently commissioned a study by Marcia Bates for the purpose of exploring ways to enrich metadata records by focusing on providing additional subject and other access mechanisms (e.g. front-end user thesauri) and increasing granularity of access and display. Bate's resulting report sets out a series of recommendations for increasing user access to library catalog and portal information[11]. In the simplest interpretation of her study, Bates advocates the principle that recognition is far more reliable than recall as pertains to searching and that a front-end thesaurus would enable users to enter different terms when approaching a subject they are looking for and achieve the desirable results. She, therefore, developed a conceptual approach for presenting users with a clustered vocabulary in response to the keyword or words typed into a system. The approach envisioned creation of "a searcher thesaurus system"be designed as a front-end to existing bibliographic databases. Her detailed proposal well might be of interest to vendors who wish to improve the next generation of OPACs. Meanwhile, LC itself is considering whether it might be able to implement some aspects of Bate's vision for its own purposes.

It is reassuring that there are already underway initiatives that demonstrate responsiveness to the need for improving the user's OPAC experience. In the U. S., for example, the leading bibliographic utilities are pursuing initiatives to increase the value of their online catalogs. Impressive for its efforts to energize the catalog is RLG's "RedLightGreen" project, proceeding with support from the Mellon Foundation, which aims "to offer rich, reliable library information that is unique in the Web environment and to deliver that information in ways that meet the expectations of Web-savvy users." RedLightGreen was developed to meet the needs of college undergraduates. According to Richard Parker from the University of Warwick (UK): [With RedLightGreen] "it's easy to get results, it's easy to refine your results, and there's a lot you can do with your results." Here are examples he provides:

$ It's clear how to search using keywords or phrases.
$ The user can refine results using LCSH subject headings.
$ Results are ranked according to two measures: relevancy to search term(s); and the number of libraries with holdings; resources at the top of the list are held by more libraries than those further down. So the higher up the list, the more academic credibility a resource is likely to have (and the more likely it is to be held by a student's library).
$ All editions of a title collocated into one result, so a popular literary text is easy to differentiate from secondary works about it.
$ Users can check whether their library has a particular resource they are seeking.
$ Results link to other related online resources such as articles, reviews, and to Amazon.com or other booksellers. And,

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$ RedLightGreen users can produce bibliographies online, formatting them in one of four popular styles, and then download or email them.[12]

Significantly, RedLightGreen implements the framework of IFLA's Functional Requirements of Bibliographic Records (FRBR) insofar as it aggregates works for which there are large numbers of editions into a manageable set of "hits" that match a user's search terms. Information regarding ongoing efforts to add functionality to RedLightGreen as well as commentaries on its usefulness are available on the RLG Web site.[13]

Similarly, OCLC is mounting efforts to improve the scope and utility of its online union catalog through such initiatives as its Open WorldCat pilot to "integrate library records into popular Internet search sites and test the effectiveness of the Web in guiding users to library-owned materials." Fiction Finder, another OCLC initiative, is a prototype system developed for 2.5+ million bibliographic records for fiction that have been clustered at the work level in such a way as to display summary, genre, setting and subject information. FictionFinder is also serving as a prototype for a broader implementation of FRBR concepts on which it is based;   through a project OCLC has named "Curiouser", the application will be extended across the Open WorldCat records that Yahoo! is harvesting. In addition, later this year, OCLC plans to display records grouped according to FRBR principles in FirstSearch.

Earlier this summer, OCLC announced that the Open WorldCat Web site now includes information about tools that can help you more conveniently search for library materials from your PC desktop, including: (1) Yahoo! Toolbar, a special edition on the Yahoo! Toolbar that provides always-there access to Open WorldCat records via Yahoo! Search; (2) Google Toolbar with Autolink feature which also enables always-there access to Open WorldCat records; and. (3) Firefox search extensions, from which one can enter search terms and select the search engine to be queried[14].

Plans are underway for creation of a WorldCat wiki. According to one of the developers:
> The idea is to have a Wiki that complements WorldCat. People could add reviews, cover art, comments, etc. and relate these to bibliographic records... We hope the system is flexible enough so that people do (good) things we're not expecting. We'd like the Wiki to be available anywhere WorldCat records are.[15]

These examples should suffice to encourage NBAs to initiate process improvements that will make navigation of their online databases more responsive to users whose information discovery experiences have been conditioned by their Web experiences. In some cases, NBAs, like RLG and OCLC, will find it worthwhile to invest themselves in providing the additional functionality that has been recommended. In other cases, NBAs could direct their influence, whether individually or jointly, to request improved functionality to the vendors who market and maintain the OPACs they use. As Roy Tennant bluntly stated in a recent *Library Journal* column:
> We need to focus more energy on important systematic changes rather than cosmetic ones. If your system is more difficult to search and less effective than Amazon.com (and

whose isn't?), then you have work to do. Stop asking for minor tweaks from Vendors. After all, you can put lipstick on a pig, but it's still very much a pig.[16]

Our national bibliographies and library catalogs are the result of centuries of intellectual effort and real capital. Considering the major investments made to create and maintain such interfaces to their collections, libraries everywhere should seek opportunities to provide the features needed to entice patrons to continue to use OPACs as rewarding access mechanisms. By exercising leadership, NBAs are better positioned to mount new and improved ways to capitalize on traditional services in the digital age through bibliographic enrichment activities and by advocating an urgently needed overhaul of OPACs to meet expectations of 21st century users. The time has come for immediate action, lest our users abandon not only the resources we have collected for them but the tools that make them available.

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Endnotes

1. For further information regarding these IFLA activities, visit the Cataloguing Section's home page at: http://www.ifla.org/VII/s13/index.htm [June 2005].

2. Further information regarding the Bibliographic Enrichment Advisory Team and all the projects that are described in the paragraphs below, visit BEAT's home page at: http://www.loc.gov/catdir/beat/ [June 2005].

3. For studies and reports substantiating the value of TOC data, see: Pappas, Evan and Herendeen, Ann, "Enhancing Bibliographic Records with Tables of Contents Derived from OCR Technologies at the American Museum of Natural History Library," *Cataloging and Classification Quarterly*, 23:4 (2000), pp. 65-67; Winkle, R. Conrad, "An Analysis of Tables of Contents in Recent English-Language Books," *Library Resources and Technical Services*, 43:1 (1998), p.14.; Morris, Ruth C., "Online Tables of Contents for Books: Effect on Usage," *Bulletin of the Medical Library Association*, 89:1 (Jan. 2001), pp. 29. Also, visit the RichCat home page at: http://www.loc.gov/standards/catenrich/ [June 2005].

4. In a second E-CIP TOC project, using programming by three BEAT team members, BEAT creates a web-based TOC for virtually 100% of all E-CIP records that contain TOC data. This data is created programmatically and a hot-link in the TOC to and from the underlying record in the LC Catalog is made for every item. The programs (recently modified) now handle most diacritical marks, and also enrich the TOC web display with the LC subject headings that were applied by cataloging staff. As of May 2005 approximately 54,000 Electronic CIPs (E-CIP) TOC records had been added to the Web server.

5.Breeding, Marshall, "The many facets of managing electronic resources", *Computers in Libraries*, v. 24, no.1 (Jan. 2004). Available:

http://www.infotoday.com/cilmag/jan04/breeding.shtml .

6. Achenbach, Joel, "Search for Tomorrow: We Wanted Answers, and Google Really Clicked, What's Next?" *Washington Post* Feb.15, 2004, D7.

7. A comprehensive overview of these tools is available at the Library of Congress Portals Applications Issues Group's Web site at: http://www.loc.gov/catdir/lcpaig/paig.html [June 2005].

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