The examination of the display of hyperlinks in WWW-OPACs

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Abstract :

This paper will examine issues relating to the display of hyperlinks in the WWW-OPAC. A sample of 66 WWW-OPAC are used. Most of these OPAC use LCSH and RAMEAU lists. The investigator examines the structure of hyperlinks (subject headings links) in the WWW-OPAC interface. For each interface, the investigator identifies the sources of hyperlinks used (author, subject, class number, series, corporate author, title, publisher), the percentage of each hyperlinks , which terms are used in the display of hyperlink, (how the hyperlinks are presented) and what are the problems resulting from using such hyperlinks ? Based on our empirical findings we recommend some approach to the provision of hyperlinks in the WWW-OPAC and suggestions for further research are offered.

Descriptors : browsing, hyperlinks, online catalogs, interface, WWW, transaction log analysis.

1 Objectives of a catalog

Cutter [1] first stated the objectives (objects) of the catalog in his landmark work, " Rules for a printed dictionary catalog ", as follows :

" 1 : To enable a person to find a book of which either :

      (a) the author

      (b) the person   is known

      (c) the subject

2 : To show what the library has :

      (d) by a given author

      (e) on a given subject

      (f) in a given kind of literature

3 : to assist in the choice of a book

      (g) as to its edition

      (h) as to its character (literary or topical)

Identifying bibliographical relationships and linking records for related materials were intrinsically function of a library catalog. One of the important objective of a catalog is the collocation function, i.e. the catalog must show what library has by a given author, by a given subject, in a given kind of literature. The collocation function depends upon gathering together materials that are related by virtue of author, subject or form.

2 : Collocation, OPAC and hypertext

According to Hildreth [2] , earlier browsing capabilities in OPACs (online public access catalogs) fall into two categories :

      1: Pre-sequenced, linear, inflexible browsing

      2: Non linear, multidirectional, flexible browsing

The first category is related to vocabulary browsing . Most of the researches involved in the past twenty years were focused on the enhancements of this category (Enriching the entry vocabulary, Linking free text to vocabulary terms, Visualization of LCSH structure and relationships, Developing more browsable display of long lists of subdivisions, Defining a taxonomy of relationships in LCSH). The second category is related to the search manipulation in order to support discovery through non-linear exploration of a database. This category of browsing was seldom used in the second generation of OPAC: very few systems allow the related searches to be carried out.

Examples of such systems are : Dynix (RW =related work) ; CARL (Express function) ; INNOPAC ("show items with the same subject") ; UNICORN (Like command).

Once a single record has been retrieved, the access points are displayed in menu form ; any one may be selected in order to pull up all records with the same headings. The press of a function invokes the option selected.

Browsing problems in traditional online catalogs

- Most of the second generation OPACs were limited to text-based command-driven interfaces. This interaction is neither obvious or easy to perform. Very often the user has to click and highlight the term using the mouse rather than directly point to the hyperlink as it is done in WWW interface. If the user is not conversant in this system, it take a lot of time to figure out this navigation option and to be able to use it efficiently.
- So far there is no navigation aids as in www. So the users can easily be disoriented.
- In order to use this navigation strategy, users need to display the complete records. However users rarely do that in conventional online catalogs.
- In classic OPACs the improved labeling of subject headings and call numbers in displayed citations does not include indications of their special collection role or suggestions that additional potentially relevant documents are linked to these subjects descriptors
- There is a high probability to make errors for inexperienced users. For example if one chooses a subject heading and does an hypertext search (by author), this search will fail. This case is identical for searches in other fields. On the hand this option, when used by an experienced user, has evident advantages. For example choosing a subject headings and later on doing a hypertext search by title keywords.

These difficulties explain why this browsing option is never chosen by end users.

3 : Browsing in WWW-OPACs

Experienced users and librarians often try to find one or few relevant references and look at the terms by which these records are indexed and then try to use these as new search terms. This is an example of relevance feedback. Researchers in the past (traditional OPAC) have found that end users rarely exploited this strategy, because they do not understand the collocation function of subject headings for identifying similar works. Although there are some experimental OPAC that offer non-linear browsing such as: Hypercatalog WHIZARD and SLS, the WWW-OPAC is the widely operational system available in the world that provide such browsing strategies.

We evaluates the browsing strategy in three Webbed-OPACs based on RAMEAU list . RAMEAU is the primary subject access and matching vocabulary used in French OPAC. It is based on the Laval and LCSH vocabulary. Three types of data were collected: Transaction log from three academics WWW-OPAC (collected during two years), Questionnaires (pre- and post questionnaire) and Verbal data.

Results show that hyperlinks are quite often used (table1) .End users prefer browsing by subject heading rather than by others links (subject headings (70%) followed by the author link (20%), series link (5%) and corporate link (5%).) .The main reason given by end-users for their selection for each link was to narrow a search [3] .

	Lyon2 (n=33829)	Irisa (n=5274)	Enssib (n=31420)
Title keyword and subject keywords	30%	50.8%	40.1%
Author	21.%	10.4%	16,2%
hyperlinks	12%	9.4%	15%
title	12%	9.5%	8,8%
Boolean search	12.7%	3.6%	9,4%
keywords	12.1%	13%	8,8%
others	0.1%	2.5%	1,4%

Table1 : index and hyperlinks usage data from three WWW-OPACs

	Enssib N=4727	Irisa (n=498)	Lyon2 (n=4073
Subjects hyperlink	70%	53.8%	44%
Author hyperlink	20%	23.9%	31%
Corporate author hyperlink	5%	10.8%	5%
Publisher hyperlink	5%	4.6%	11 %
Series hyperlink	N/A	1.4%	10%
Conference hyperlink	N/A	5.4%	N/A

Table2 : hyperlinks used in three www-OPACs

4 : Display of hyperlinks in WWW-OPACs

For this work we checked and interrogated 66 catalogs on the Web from HYTELNET server [4]. It lists online catalogs with a www interface worldwide. These 66 catalogs are thus found according to their geographical origin: (Canada: 16 ; United states:30 USA; France: 10 and Australia:10)

As expected, the principal hyperlinks used in the 66 online catalogs were subjects and author hyperlinks (see table3) .

	Total (n=66)
Principal author	87,8%
subjects	81,8 %
Call number	48.5%
Series	48.5%
Other author	30,3%
title	21.2%
location	9%
publisher	6%
Corporate author	6%
Conference	6%
Others titles	3%
Other corporation	3%

Table3 : type hyperlinks

After using the 66 catalogs, we can formulate the following comments:

- In most systems (78.8%), this display   takes place in two stages, with the headings being displayed first, and bibliographic records being displayed only after a particular heading was selected . Half of the online catalogs display the " see" and " see also" reference.
- Some OPACs (11.2%) display directly the bibliographical records.
- Most of the catalogs display the number of posting attached to each heading (42 %)

- Hyperlinks are displayed in list form (67%)
- Colors used for hyperlinks are consistent with WWW standards
- When clicking on an hyperlink, the 65% of the system display the type of hyperlink used at the top of the reference page.

Contrary to the traditional catalogs, browsing in www-OPACs is very easy. However, we can noticed the following problems:

subjects hyperlinks

- Sometimes, in the use of complex subject headings, the hyperlink is applied only to the "topical subject headings" instead of the combination " topical subject – subdivisions" . In some cases, this leads to an information overload which might confuses users. Then The collocation function of subject headings is lost. The webbed OPACs of enssib present such problems.
- Sometimes, it 's a bit difficult to distinguish the different subject headings because of theirs display on a single line. The separators used are comma , sharp and dash.

Author hyperlink

When clicking on an author hyperlink, some WWW-OPACs display the alphabetic list of authors instead of the bibliographical records. This feature might be helpful in system where there is no "authority control" on author field, but not elsewhere.

Call number hyperlinks

When clicking on such hyperlink, most WWW-OPACs (56%) display an alphabetic index without caption . It is very difficult to end user to understand such information (how an end-user can differentiate for example Z699.35 S 92 H 55 1989 , Z 699.4 A16 W 54)

Title hyperlinks

Some WWW-OPACs offer the possibility of doing an hypertext search on title. When testing this feature on the catalogs, 90 % of the systems did not return any response. Only 3 % did display the same record. The display of "no answer" when using the title hyperlink will puzzle the end-users.

Help

Most of these WWW-OPACs (90%) does not indicate in the help function, the potential use of the browsing by hyperlinks. When it is available, it indicate juste for subject and author hyperlinks and without examples.

Labels used :

Mots of the catalogs used labels which are clear but 7% of them use unclear labels such descript vs. subjects , other auth vs. others authors.

Conclusion

While there is research investigating the use of online public access catalogs, in libraries, few data studies of Web use in libraries exist. Our research show that hyperlinks can play an important role in refining a search and helping users to recognize what cannot be clearly specified in advance.
Contrary to classic online catalogs, the browsing features, in the WWW-OPACs examined are user friendly.. The data indicates that record-level hyperlinks does not differ intensely from one system to the other and records hyperlink are not limited to author and subject fields.
 However, in order to improve the browsing capabilities of WWW-OPACs, we suggest to :
- ❖ Enhance the content of the bibliographic record and shorten subject headings by reducing the number of subdivisions
- ❖ Develop more reformulations options [5]
- ❖ Display others links. For example in collaboration works (between 10% to 20 % of a catalogs records), displaying all authors contributing in books.

- ❖ Enhance the usability of WWW-OPACs interface
- ❖ Offer the title hyperlink   only if the catalogue has other records with the same work headings (other editions)

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