OPACs' Users' Interface – Do They Need Any Improvements? Discussion on Tools, Technology, and Methodology

Piotr Malak

piomk@uni.torun.pl
Nicolas Copernicus University, Institute of Information Sciences and Book Knowledge,
Department of Information Sciences, Poland, http://www.umk.pl/~piomk/en

Abstract
Current paper attempts to answer an "exotic" question of usability of OPACs'. The possibilities of implementation of a *web usability* research in improving efficiency of on-line catalogues interfaces is discussed. Search strategies of users have been analysed as well as a new *customer-orientation paradigm*, widely used in business, has been suggested in reader treating. The most common mistakes in web sites creation of on-line catalogues (those are users' interfaces) have been described. Migration to XHTML (especially with the use of CSS) has been suggested, since the standard allows for broadening of the access to web sites also for reading devices, PDAs and mobile telephony. Also some IT tools (applications) breaking information access barriers, like loud reading apps. have been introduced.

Common format of media layer (e.g. XHTML + CSS) allows wide extension of OPACs, like virtual agents serving, information exchange, use of common public repositories (both of pattern records, as well as information) that could make libraries more flexible information and knowledge centres, fulfilling, on the basis of wide cooperation in information handling, the very sophisticated users' information needs.

1 OPACs

OPAC is a gateway of library services. Since libraries are non-commercial institutions the authorities (or managerial boards) seem to pay a very little attention for possible marketing aspects of own website in general, and very useful tool like OPAC especially. One can say there is a lot of useful information provided on my library web site. That's right. There can be plenty of information, in deed there should be – it is a library anyway. But the problem is not information itself but its delivery way.

In the case of institution like library it is easy to achieve a state of contentment of current web service. But we should be aware, a complacency is an enemy of improvement. Delivering information to the users is very good as a staring service of website. OPAC is a very valuable extension of the functionality. And another, consistent step is improving the availability of information and services. Not only through technical, media related operations but also by the mean of inviting users to active participation in library, its environment and neighbourhood live.

Present paper attempts to encourage libraries authorities for using the most up-to-date technologies and activity patterns in order to improve library services, to make them really available for everyone, and to make library more flexible, network cooperation-oriented organisation, ready to compete even in business environment.

There appear everlasting problem – should libraries work in a similar way to commercial, business institutions? In my humble opinion – yes, they should. Especially nowadays, in rapidly changing media environment. Facing problem of decreasing readership of books, increasing popularity of multimedia, and Internet libraries should prepare for acquiring users. One of problems for libraries that may appear soon is digitalisation of copyrighted sources. Presently also commercial enterprises invest in digitalising technologies. The process is used widely for archiving enterprise documents. But there are also commercial attempt of creating virtual libraries by the mean of digitalising sources as well as storing and making accessible the digital documents. It is obvious enterprises like Google e.g.[1], are more capable of acquiring copyrights than any public library can ever dream. Delivering a digital content is business for some organisations. And may become more profitable, not only for content (possibly of restricted availability only to virtual library of copyrights holding enterprise), but also for added value, like digital media, translation, laud reading facilities, etc. This process may be competitive for traditional libraries, taking over the readers by more interesting offer. Those are signals for libraries to become more competitive on information and content delivering market, as well as act more customer-oriented.

2 Improving users' interface

There are at least two ways of improving on-line library services – add a new functionality or change user interface to make it more intuitive and user-friendly. Both of them will be discussed in the following pages, with more attention paid to user interface, as a front-end of information-retrieval system, library catalogue in this case.

A very useful tool in process of improving on-line services by the mean of user interface is a set of practical rules, called *web usability.*[2] According to web usability rules and basing on own experience a set of libraries' OPACs' have been analysed concerning user interface functionality and accessibility. There are some OPACs analysed according the web usability rules, as well as use of modern technologies (like loud readers, easiness of information access, additional information, added value, etc.) The results lead to the conclusion that vast majority of currently available OPACs do not respect users with information access problems, as well as they ignore any existing standards of web mastering. Although there are some freeware tools, that implemented within the site can deliver the contents and interaction to users that are unable to use traditional web site.

Importance and interest of the study

As present paper describes an initial study of OPACs usability, and possibilities of improving OPACs themselves, as well as making them available for broad audience, there will not be any particular examples – just common suggestions that may be important and valuable either for libraries IT divisions as well as for OPAC developers.

3 Web interface

User interface should serve two main functionalities. Deliver to the user in clear and legible way all required information either as user query answer or as a part of particular user profile. Additionally proper user-system communication should be secured. This can be reached

[1] Other good example is Project Gutenberg: http://www.gutenberg.org/wiki/Main_Page.

[2] Nielsen Norman Group (NNG; http://www.nngroup.com/) deliver services on ec0mmerce usability, providing analysis and improvements suggestions for commercial web sites. One of founders is Jakob Nielsen called *Guru of web page usability* (see http://www.useit.com/jakob/).

through efficient searching system as well as comprehensive navigation. Nielsen Norman Group research prove fast sell increase from 100 % till 400 % gained thanks to improving user interface usability of company web site. Usable site guides customers to easier way of information retrieval or product searching, increasing their satisfaction and trust, and resulting in better references and loyalty.

For OPAC one of the main user need to be satisfied is information retrieval.

Information retrieval – users strategies
Catalogue generally, and OPAC especially is the front-end of reader contact with the book collection. As an answer for user query OPAC delivers information concerning document availability. Each query bases on the searching keywords introduced by user through user interface. In OPAC case, technically, it is mostly a kind of form.

Shortly there are two main user searching strategies, that determine use of searching keywords.

1. Searching particular document using known identifying data – commonly it is a title or author,
2. keywords, classification symbols, etc.

For the first case of searching user interface should not be to advanced, it should deliver an intuitive way of finding required information. Searching fields should allow the user to choose on searching common parts of physical document characteristic, like title, author, ISBN, etc.

For this is the easiest, and in deed default way of document searching such form fields should be available by default at user interface. Most of OPACs is already designed that way.

More complicated is searching by content description of document. Most popular for this kind of search is free keyword searching (like Internet searching). Free keyword (full text or description only) offers the user more flexible way of information retrieval, for they do not need to know exactly id. data of particular document (like author or title).

OPAC search possibilities
As the most popular search fields of OPACs provided to user, we can indicate author, title, topic, description keywords, etc. Quite a lot of OPAC support advanced search like boolean operators, searching within set of previous results, extending or restricting searching scope. Often this type of search is supported by accepted keyword lists.

4 Usability
The usability of interface is result of comfort and intuitive way of service, as well as accessibility to functions and information. For OPACs this is sum of producer design of searching capacities and libraries design of look and final functionality of user interface (since it is mostly web site).

Required functionality
There are at least two aspects of web site usability: visual-functional and content. The first aspects provides what kind of facilities will be available for user on is/her interface, which means the possibilities of users activity within web site. This is characterised by design of web site visual elements placing (legibility of their purpose, availability, accessibility) and

navigation menu. Navigation is important for users (especially new ones) for easy, intuitive navigation will invite user to better understanding of service. Thus it should be user-oriented. Many navigation menus are organisation-oriented, they are very easy and intuitive for institution employees, but illegible for users.

Providing OPAC user functionality he/she requires should not be a problem, for his/her needs are well known and defined. Most of user queries relate to limited set of searching keyword types. Those should be available for users on the main OPAC searching page, as well as possibility of merging keywords (boolean AND,OR at least). And this functionality is well supported on majority of OPACs. The main concern relates to presentation (visual) layer of OPACs web sites.

Web site layers
The most modern recommendations of web site designing refer to dividing content layer, from visual design, and technical, content delivering ones. This allow to pay special attention for particular field of web site creation, and adjust any of mentioned above layers to specific organisation profile and needs.

Visual layer
The most common visual layer errors of OPAC are graphical elements overflow, and inconsistent use of HTML elements, like mixing text hyperlinks with form buttons (displayed as graphical elements). For preserving visual coherence webmasters should consistently use the same type of visual elements for similar purposes. On many libraries OPACs web sites some functional links are presented as a text, while others as for example graphics or form buttons, what is not connected in any way with their special role. Only functions or links of special value for the service can be distinguished in a special visual way.

Another important part of any on-line service is help system. While available on almost every text-based[3] (telnet session e.g.) OPAC help system is omitted in web version. But OPACs search systems are different from what users known from Internet search engines interfaces, so such kind of help seems to be obvious at OPACs web sites.

Content layer
This refers to way of delivering user the content. Mostly it is a kind of markup language, like HTML or XML (very popular in business web solutions). HTML is common standard of web sites creation. Currently the most popular is HTML 4.0, since from 2002 it is marked as obsolete by W3C.[4] While XHTML is recommended (http://www.w3.org/TR/xhtml1/). The new standard widely uses CSS (Cascading Style Sheets) for visual layer description.

One of XHTML advantages is tended accessibility of presented content. Properly designed XHTML documents are available (except of traditional media) also for laud reading facilities, PDAs or mobile phones. This feature allows including into users group also distance users, as well as visual impaired persons.

What is important this standard is backwards compatible, which allows rather easy transformation of any HTML service into extended available and accessible XHTML one.

[3] There are often context help for current activity as well as global for whole system help available.
[4] World Wide Web Consortium (http://www.w3.org/).

One of important rule is describing of any significant mark, like <IMG /> - for placing pictures or other graphics into web document. Typical describing attributes are "title"- for alternative title of an element, "alt" - for alternative description of element (for laud reading and text browsers), and "id" which unambiguously identifies an element. Any of mentioned above attributes is properly recognized by reading software or equipment. So visible impaired users can not only get access to the content of a document (and hear it), but also they can use related information to navigate over sites of service, over external links or to search the service.

Another useful improvement seems to be implementation of advanced user interface environment, like AJAX[5] (**A**synchronous **J**avaScript **A**nd **X**ML). It is a new way of using existing web standards for crating better, faster and more user-friendly web applications. The last word of definition is substantial for AJAX – using it one is able to create web site with advanced user interface similar to local applications interfaces. User of AJAX web apps. Feels like would be working with typical locally installed software, and not with a web site. Such interface offers grater comfort of work, and delivers more advanced action possibilities.

Functionality
Since WEB 2.0 is becoming more and more popular, and a lot of commercial enterprises use it for customer relationship management, it seems to be a good idea to implement its advantages also into OPACs. Naturally a library web site is not a place destined for all users blogs or societies, but there could be place for readers clubs, for a person or group of people keen on book to write comments on new books, on literature events, especially from local environment. Delivering users (customers) such possibilities is good way to gain their loyalty, and probably increase the readership. Basing on commercial web sites, libraries could allow users for placing comments, recommendation and their votes for quality and value of a particular book available in the OPAC (see e.g. http://www.amazon.com/). Some additional form fields, some additional database tables, and library can offer rank of books in a particular discipline or of a particular literature kind, facilitating of making proper choice of a book or document.

Omitting all technical details (that might appear boring to some of you) would like to pay your attention for other possibilities of meeting users information needs. Very popular RSS channels (http://en.wikipedia.org/wiki/Rss) could be used to inform reader on new books available in the library and about any events connected with a library and its environment. This information could be personalised on the base of user reader profile – percentage indicator of book types or kind borrowed by particular reader. And finally, if not RSS (for technical reasons), then at least newsletters could be used to prove reader that library is serving them, not itself. Of course with full respect to readers privacy and omitting spam techniques.

5 Suggestions of the usability improvements for web OPAC

Following suggestions are to contribute to improving of web OPAC usability, by enhancing functionality and extending accessibility:

- help system – preferably for different levels of user experience in searching,
- using XHTML or similar modern markup languages for content delivering layer,

[5] http://www.w3schools.com/ajax/default.asp.

- consistent use of “title”, “alt”, “id” and “div” attributes,
- using environments like AJAX for improving user interface, and make web application more useful and user-frendly.
- providing user keywords hierarchical lists (serving as an index of catalogue),
- full-text searching, at least within description fields if not for whole documents contents (readers got used for full-text Internet searching and expect similar functionality form their OPACs),
- in more complex languages (more than English) useful functionality appears grammatical forms handling during user query processing in order to increase accuracy of an answer,
- on-line book ordering – seems to be obvious, but there still are libraries OPACs without this feature. This solution leads to improving the efficiency of user serving for example by omitting one of document delivery chain steps,
- contact with the library staff possibilities (on-line and traditional),
- newsletters and/or RSS channels concerning news and events,
- book evaluation and books ranks within particular kind of literature,
- comments and references on books.

References

Krug, S. (2006). *Don't Make Me Think: A Common Sense Approach to Web Usability.* 2nd Edition. Indianapolis, Ind.: New Riders; London: Pearson Education.

Nielsen, J. & Loranger, H. (2006). *Prioritizing Web Usability.* Berkeley CA: New Riders Press.

Nielsen, J. & Tahir, M. (2002): *Homepage Usability: 50 Websites Deconstructed.* Indianapolis: New Riders Publishing.

useit.com: Jakob Nielsen's Website [Jakob Nielsen on Usability and Web Design]. Retrieved October 15, 2007 from http://www.useit.com/.

Webusability Home. Retrieved October 15, 2007 from http://webusability.com/.

World Wide Web Consortium. Retrieved October 15, 2007 from http://www.w3.org/.