

# Identifying the Location of Web Objects: A Study of Library Web Sites

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## Abstract

*Web sites have become organizational main door. Today's digital natives want information to be available via World Wide Web. They want the container of the information to be simple and easy to use. Usability studies have been concentrating on developing and design user-centered websites. The location of the library web objects help user to navigate and retrieve information easily. The study examined 75 library web sites to identify the location of library web objects (about us, my account, help, link back to home, OPAC, search box and ask a librarian). The study found that "search box" and "link back to home" web objects were located in top left and top right corner of the library websites as same in the case with e-commerce web sites. The study help library web designer to improve the usability of library websites.*

**Keywords:** Library Websites, Web objects, Usability studies, Web design, Academic libraries,

## 1. Introduction

The invention of the World Wide Web in 1991 has profoundly changed the way we access information. Development and design of web sites has become de facto function of organizations. Libraries as a purveyor of knowledge ventured early into the field of World Wide Web for delivering information services to its users. The traditional information organizations techniques and information retrieval tools have influenced in great deal in designing user-centered web interface (Roesenfield & Morville, 2002). As the web evolved through decades it has become de facto face of an institution, it's building's lobby, and the receptionist of the institutions (Nielsen and Tahir, 2002). People without any constraints of geographical and temporal barriers can access web sites and find information they require easily. The ubiquitous and anytime and anywhere access to information emphasized the importance of designing web sites with an understanding of user mental model to facilitate users to navigate and find information easily.

Fogg, Murable, Stanford, & Tauber (2002) have revealed that "design look" of the web site was one of the major aspects to determine the credibility of web sites. Visual appeal tends to influence user mental model to revisit websites. Previously usability studies have reported design problems encounter by users while browsing/navigating web sites (Blummer, 2007). One of the main reasons for this is, often web designers rely on web style guides rather considering user understanding of web sites. Users expect certain web objects to be placed in certain locations for easy access. According Michael Bernard (2001) "an essential ingredient in constructing the content of a website is knowing the typical users' mental model or 'schema' for the characteristic location of web objects on a website. Knowledge of this schema and constructing a site that reflects this should aid in the site's

accessibility. This, in turn, should produce more accurate and faster information retrieval, as well as greater satisfaction with the site." The series of studies done by Bernard and others (2001, 2002; Bernard & Sheshadri, 2004) have surveyed users expectations of web objects in e-commerce websites (shopping cart, login/register, help/service, account/order, search engine, back to home links and merchandise Items). The participants were asked to place cards on 8 by 7 grid browser window representing the e-commerce objects where they expected to find particular web objects in e-commerce web sites.

Adkisson (2002) noted that the results of these studies correspondence to the location of the web objects with some of the well known e-commerce sites such as amazon.com, eddibaur.com, and bestbay.com, etc. However, Adkisson (2002) argued that though Bernard mentioned that his results were in line with popular e-commerce sites, but the study lacked systematic analysis of determining how closely actual practice aligns with user expectations (Adkisson, 2002). To determine actual practice in e-commerce web sites Adkisson examined the location of certain web objects in e-commerce sites. Adkisson found that her study results were in line with previous studies conducted by Bernard. Almost (100% of the sites) all e-commerce web sites have placed "link to back home" feature at the left top corner of the web sites, which was in line with Bernard's results, where users expected that "link to back home" feature should be appeared in top left corner of the web sites.

Most of the studies conducted on location of web objects done have been reported in the field e-commerce (Bernard, 2000, 2002; Bernard & Sheshadri, 2004; Adkisson, 2002; Shaika & Lenz, 2006). There is scant literature on this subject in library web usability studies. In this context, an attempt has been here to examine some of the library websites identify the location of library web objects viz., "about us", "my account" "help", "search box/link", "link to back home", "OPACs" and "ask a librarian". This study intended to answer the following question.

- ◆ Where do library web objects placed in the library web sites?
- ◆ Does the library web object appear in same location as in the case of e-commerce websites?

## **2. Methodology**

The study examined the 75 library web sites of top world universities for the location of certain web objects (see Table 1). Top 75 world universities were taken as a study sample from the World University ranking 2008 published by the Times Higher Education<sup>3</sup>. Once the list was obtained each of the university web sites were visited for identifying the library web address. Library web links were checked twice to determine the researchers accessing the genuine library web link. Wherever the web site was not available in English and failed to access during the data collection period those web sites were excluded from the study and subsequent university library web sites were selected. This process resulted in list of 75 top world university library web sites. This list formed the major data source for the present study (see appendix 1).

To collect the data, the researchers used a data sheet of 5 x 5 horizontal and vertical grids (see appendix 2) similar method used by Shaikh & Lenz (2006). The locations of the following web objects were examined in the study: about us, my account, help, search link/box, link to back home,

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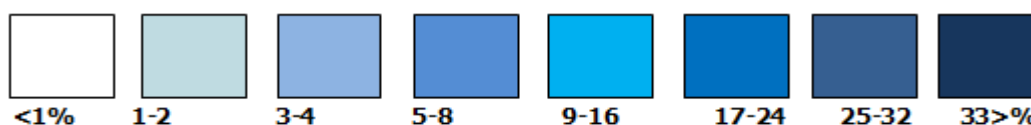
OPAC, and ask a librarian (see Table 1). Locations of each of these web objects were recorded in the 5 x 5 horizontal and vertical grids. The result of the study has been reported in the subsequent section of this paper. The data for the study was collected from June 2<sup>nd</sup> to June 15<sup>th</sup> 2009.

**Table 1: Operational Definitions of Library Web Objects**

SL. No.	Web objects	Descriptions
1.	about us	About us feature usually provide information regarding respective organizations. A kind of a self introduction.
2.	my account/user account	My account is an online book checking inquiry system. User instead of visiting physical library, he can check his book issue status online.
3.	Help	Instructions or advice on how to use a specific type of service/option on library web sites.
4.	search link/box	Help the user locate information available at sites on the World Wide Web.
5.	link to back home	Links to home page from secondary level pages from web site. User can jump easily from secondary level paged to homepage while navigating web sites.
6.	OPAC	A database composed of bibliographic records describing the books and other materials owned/subscribed by the library, accessible via public terminals.
7.	ask a librarian	An online reference service wherein user get answer for his queries via e-mail, phone, IM or online form.

**3. Results**

The location of the particular web object was counted in such a way that it can be represented in 5 x 5 grids table. The darker the shade of the blue, the greater the number of times that the particular web object was found in the particular location. Based on the proposed method (Shaikh & Lenz, 2006) frequencies were calculated for each web objects presented in the 25 grid squares (Figure 1). The percentages are represented by increasingly darker shades of blue (white is <1% and dark blue is >33%).



**Figure 1: Each Grid (color) Represents the Frequency of Web Object Found in Particular Locations in the Library Web Sites**

**3.1 About Us**

“About Us” link act as a self introductory section of the institutions/libraries in web sites. This option is important for novice users to get to know the services and products library offers for its users. It was found that almost 30.00% (15.71% and 11.42%) of the library web sites have placed “about us”

link at the upper left side of the web sites. And 15.71% placed "about us" link at the upper right of the web sites. Figure 2 illustrates the location of the "about us" link as found in library web sites. In contrast the result, most of the participant expected "about us" link at the footer section of the e-commerce websites Shaikh & Lenz (2006).

8.57%	8.57%			
15.71%			15.71%	
11.42%		5.71%		

Figure 2: Locations of About Us in Library Web Sites (n=70)<sup>4</sup>

### 3.2. My Account

My account/user account allow user to check their library transactions via online. Users need not visit library physically to check their circulation transactions. This feature resembles the shopping cart of an e-commerce websites. The web designer uses different terms to name this object. To name few, "user account", "registered users", "my account" "your account", "my library account", and "your browser record", etc. Fifty four (72 %) library web sites offered this feature in their library web sites. The placements of "my account" feature various across web sites, but tended towards extreme right side of the library web sites (16.66%) and the upper right side (11.11%) of the library websites as shown in figure 3.

			11.11%	
7.40%		7.40%		7.40%
			5.55	16.66%
12.96%				

Figure 3: Locations of My Account Function (n=54)

**3.3. Search Link/Box**

Information retrieval is the most important aspects of the web. Retrieving information in web sites has become a very common phenomenon. Google and other search engines have changed the way, how web users retrieve information via search engines. Libraries as an information deliver channel resides huge data set in its repository. These data can be delivered via internal search engine. Figure 4 depicts the placement of search link/box in library web sites. Almost 50.00% of the sites placed search link/box feature at the top right corner of the library web sites. This result is in line with Shaikh & Lenz (2006) study on e-commerce web sites.

			8.22%	45.21%
5.48%	6.85%			
	6.85%		5.48%	

**Figure 4: Location of Search Link/Box (n=72)**

**3.4. Back to Home Link**

Web site is a collection of web pages. Web site may contain large number of web pages. According to Ha & James (1998) website may contain one page to 50000 web pages. User navigates web sites to find particular information. Bread crumb and link "back to home link" features help users in identifying the location of the web page in which he is navigating. Usability studies suggest for providing "link back to home" option in every web pages of the websites so as to help users quickly jump to home page from the secondary level web pages. The study found that almost 53.00% of the web sites have placed "back to home link" at the top left corner of the library web sites. The result is in line with previous studies on web objects (Bernard, 2000, 2002; Shaikh & Lenz, 2006; Adkisson, 2002).

52.78%	12.50%		9.72%	6.94%
9.72%				

Figure 5: Locations of Back to Home Link (n=72)

### 3.5. Help

Help feature allow users to solve certain problems themselves without the intervention of intermediaries while browsing and accessing information on the web sites. This feature presented in library web sites in different terms such as "help" or "how do i?" or "get help" or "help yourself". Fifty (66.66%) library web sites have provided this feature in their web sites. The placement of the help function is varied from library to library, but in most cases, it tended towards upper top of the library web sites, as depicted in figure 6.

		14.00%	6.00%	5.56%
6.00%			12.00%	
12.00%	6.00%			
6.00%		6.00%		

Figure 6: Locations of Help Function (n=50)

**3.6. OPAC (Online Public Access Catalog)**

OPAC (Online Public Access Catalog) is one of the important features of the library web sites. User can access bibliographical information or full text of library materials. Almost all library web sites have provided this feature via library web sites. The placement of the this feature varied across library web sites, with great number of sites placing OPAC at the top left side and middle of the library web sites (13.70%) as shown in figure 7.

	5.48%			
16.44%	17.81%	12.33%		5.48%
6.85%		13.70%		

**Figure 7: Locations of Online Public Access Catalog (OPAC) (n=73)**

**3.7. Ask a Librarian**

Ask a librarian feature is an online reference services offered by libraries. Library users can get answers for his queries via e-mail, instant messenger (IM) and mobile phones. Fifty nine (78.66%) library web sites offered this feature. This feature presents in library web sites as "ask a librarian" or "ask us" or "ask a question" and "ask your question". The placement of ask a librarian feature is scattered/varied from library to library. Most of the libraries placed ask a librarian feature at the right side of the library web sites, as shown in figure 8.

			14.28%	
	5.53%		10.71%	8.92%
5.53%			5.53%	7.14%
8.92%	5.53%		5.53%	

**Figure 8: Locations of Ask a Librarian Function (n=59)**

#### 4. Discussion and Conclusion

The study examined the placement of few web objects in library web sites. The result of the study can be summarized as follows

- ◆ The "about us" link in majority of the site placed at the top right corner of the library web sites
- ◆ "My account" feature was placed in right side of the many of the library web sites
- ◆ The search link/box was placed in top right corner of the library web sites.
- ◆ The link to "back home" feature was found at the top left corner by the majority of the library web sites.
- ◆ The "help" feature placement was scattered in many places, but good number of sites placed this feature at the top right side of the library web sites and at the left side of library web sites.
- ◆ The "OPAC" feature was placed in centre part and left side by the majority of the library web sites.
- ◆ The "ask a librarian" feature was placed in different locations of the web sites but one can see the high concentration of "ask a librarian" feature at the right side of library web sites.

The study revealed that the features such as "link to back home" and "search link/box" were in correspondence with results of previous studies conducted by Bernard & Sheshadri (2004) Bernard (2000 & 2002) and Shaikh & Lenz (2006). This study is also in correspondence with the results of Adkisson (2002) study on de-facto standards for e-commerce websites. The interesting aspect of the study is that, the pattern found from this study revealed that library web object placement is not different compared to e-commerce web objects. This result strength the words of Nielson & Tahir (2002) that web designer follow some of the web sites while designing website and reflected the same in library web site as well. Another implication of the result of the study is that, the library web designer in developing countries can use the result of the study to design web sites for facilitating easy navigation and retrieval of information.

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Appendix 1

List of Library Web Sites Considered for the Study

SL.No.	2008 University Ranking	Name of the University	Library URLs	Country
1.	1	Harvard University	<a href="http://hul.harvard.edu/">http://hul.harvard.edu/</a>	US
2.	2	Yale University	<a href="http://www.library.yale.edu/">http://www.library.yale.edu/</a>	US
3.	3	University of Cambridge	<a href="http://www.lib.cam.ac.uk/">http://www.lib.cam.ac.uk/</a>	UK
4.	4	University of Oxford	<a href="http://www.ouls.ox.ac.uk/">http://www.ouls.ox.ac.uk/</a>	UK
5.	5	California Institute of Technology	<a href="http://library.caltech.edu/">http://library.caltech.edu/</a>	US
6.	6	Imperial College London	<a href="http://www3.imperial.ac.uk/library">http://www3.imperial.ac.uk/library</a>	UK
7.	7	University College London	<a href="http://www.ucl.ac.uk/library/">http://www.ucl.ac.uk/library/</a>	UK
8.	8	University of Chicago	<a href="http://www1.lib.uchicago.edu/e/index.php3">http://www1.lib.uchicago.edu/e/index.php3</a>	US
9.	9	Massachusetts Institute of Technology	<a href="http://libraries.mit.edu/">http://libraries.mit.edu/</a>	US
10.	10	Columbia University	<a href="http://www.columbia.edu/cu/lweb/">http://www.columbia.edu/cu/lweb/</a>	US
11.	11	University of Pennsylvania	<a href="http://www.library.upenn.edu/">http://www.library.upenn.edu/</a>	US
12.	12	Princeton University	<a href="http://library.princeton.edu/">http://library.princeton.edu/</a>	US
13.	13=	Duke University	<a href="http://library.duke.edu/">http://library.duke.edu/</a>	US
14.	13=	Johns Hopkins University	<a href="http://www.library.jhu.edu/">http://www.library.jhu.edu/</a>	US
15.	15	Cornell University	<a href="http://campusgw.library.cornell.edu/">http://campusgw.library.cornell.edu/</a>	US
16.	16	Australian National University	<a href="http://anulib.anu.edu.au/lib_home.html">http://anulib.anu.edu.au/lib_home.html</a>	Australia
17.	17	Stanford University	<a href="http://library.stanford.edu/">http://library.stanford.edu/</a>	US
18.	18	University of Michigan	<a href="http://www.lib.umich.edu/">http://www.lib.umich.edu/</a>	US
19.	19	University of Tokyo	<a href="http://www.lib.u-tokyo.ac.jp/index-e.html">http://www.lib.u-tokyo.ac.jp/index-e.html</a>	Japan

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20.	20	McGill University	<a href="http://www.mcgill.ca/library/">http://www.mcgill.ca/library/</a>	Canada
21.	21	Carnegie Mellon University	<a href="http://search.library.cmu.edu/rooms/portal/page/Sirsi_HOME">http://search.library.cmu.edu/rooms/portal/page/Sirsi_HOME</a>	US
22.	22	King's College London	<a href="http://www.kcl.ac.uk/iss/">http://www.kcl.ac.uk/iss/</a>	UK
23.	23	University of Edinburgh	<a href="http://www.lib.ed.ac.uk/">http://www.lib.ed.ac.uk/</a>	UK
24.	24	ETH Zurich (Swiss Federal Institute of Technology)	<a href="http://www.ethbib.ethz.ch/index_e.html">http://www.ethbib.ethz.ch/index_e.html</a>	Switzerland
25.	26	University of Hong Kong	<a href="http://lib.hku.hk/">http://lib.hku.hk/</a>	Hong Kong
26.	27	Brown University	<a href="http://dl.lib.brown.edu/libweb/">http://dl.lib.brown.edu/libweb/</a>	US
27.	29	University of Manchester	<a href="http://www.library.manchester.ac.uk/">http://www.library.manchester.ac.uk/</a>	UK
28.	30=	University of California, Los Angeles	<a href="http://www.library.ucla.edu/">http://www.library.ucla.edu/</a>	US
29.	30=	National University of Singapore	<a href="http://www.lib.nus.edu.sg/">http://www.lib.nus.edu.sg/</a>	Singapore
30.	32	University of Bristol	<a href="http://www.bristol.ac.uk/is/library/">http://www.bristol.ac.uk/is/library/</a>	UK
31.	33	Northwestern University	<a href="http://www.library.northwestern.edu/">http://www.library.northwestern.edu/</a>	US
32.	34	University of British Columbia	<a href="http://www.library.ubc.ca/">http://www.library.ubc.ca/</a>	
33.	35	University of California, Berkeley	<a href="http://lib.berkeley.edu/">http://lib.berkeley.edu/</a>	US
34.	36	University of Sydney	<a href="http://www.library.usyd.edu.au/">http://www.library.usyd.edu.au/</a>	Australia
35.	37	University of Melbourne	<a href="http://www.library.unimelb.edu.au/">http://www.library.unimelb.edu.au/</a>	Australia
36.	38	Hong Kong University of Science and Technology	<a href="http://library.ust.hk/">http://library.ust.hk/</a>	Hong Kong
37.	39	New York University	<a href="http://library.nyu.edu/">http://library.nyu.edu/</a>	US

**Source:** 2008 Times Higher Education 2008 World top University rankings (<http://www.timeshighereducation.co.uk>)

**Appendix 2**

**5 x 5 Horizontal and Vertical Grid Data Coding Sheet**

**Data coding sheet**

Name of the Library: \_\_\_\_\_  
URL: \_\_\_\_\_  
Name of the University: \_\_\_\_\_  
Country: \_\_\_\_\_  
Date of data collection: \_\_\_\_\_  
Time: \_\_\_\_\_


Schematic presentation of the web page in 5 X 5 grids

**Web objects:**

1. About us
2. My account
3. Help
4. Search box
5. Link to home page
6. OPAC (online catalogue)
7. Ask a librarian

**Notes:**