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The European Library: Improving Cross-Cultural Web Portals

Abstract: The European Library is a remarkable resource for gaining access to the cultural heritage of many European societies. Not surprisingly, usability of the European and affiliated national libraries websites is among prominently featured concerns. The purpose of this ethnographic study is to improve cross-cultural web portals of The British Library, The Vernadsky National Library of Ukraine, The Russian State Library, and the Italian National Library Service accessible through the European Library portal. The objective is to evaluate user's access to catalogs, capture the most recognizable features of communication and visual display patterns that characterize the design of each national website, and describe and compare the observations.

Keywords: The European Library; Ethnography; Digital libraries; Cross-cultural web portals; Knowledge Organization.

Introduction

The European Library is a remarkable resource for gaining access to the cultural heritage of many European societies. The outcome of the efforts by the members of the Conference of the European National Library (CELN), The European Library was created with a mission to "open up the universe of knowledge, information and cultures of all Europe's national libraries" (Janssen 2006). It currently features forty-eight participating members and provides a point of access to digital and non-digital resources. Its intended audience includes researchers and ordinary users. The European Library Office is located in the *Koninklijke Bibliotheek,* the National Library of

the Netherlands (The European Library 2010). Cousins (2006) informs us that “The role of the European Library Office is therefore to create a stable portal that allows the user to search within and across the deep web and closed database collections of the National Libraries.” Although the library portal is up and running, the work is far from over. One of the most urgent priorities is the digitization of the European national libraries collections (Eur-Lex 2009); usability of the library's websites is among other prominently featured concerns. This aspect deserves further consideration.

In essence, a library website is a knowledge organization system, and its primary purpose is to facilitate resource discovery. At the same time “Formal systems for KO operate in specific cultural milieu that require the user to conform perception to the reality modeled in the system…” (Smiraglia 2008). KO is an abbreviation for Knowledge Organization, a field of study, informs Hjørland (2008) that “is concerned with the nature and quality of such knowledge organizing processes (KOP) as well as the knowledge organizing systems (KOS) used to organize documents, document representations, works and concepts.”

Within the European Library portal, the user has several search options. He or she can use a search option available from a main page. He can also select the “Collections” button and explore any of the national collections. Finally, he can select the “Libraries” button and enter a web page of any single national library. It should be noted that two countries - Italy and the Russian Federation - are represented by two national libraries each. For Italy, access to national collections is granted through the libraries of Florence and Rome; for Russia, access is provided through the libraries of Moscow and St. Petersburg. Whatever entry point is selected, getting a meaningful result requires that the user proceeds to a web page of the national library. Here he encounters a

website that's design is markedly different from that of the European portal. As the user continues to navigate through the national library's web pages, he encounters as many different designs as there are the national libraries. This fact poses some interesting questions concerning cultural dimensions of the European and participating libraries' websites. It can be argued that design of a cultural artifact such as website is reflective of the cognitive and cultural schemas prevalent within a given society. For the European and affiliated national libraries, the issue of cultural diversity expressed through markedly different visual designs of their websites may be counterproductive to the project's objectives. Therefore, studying the national libraries' websites as cultural artifacts may lead to a better understanding of specific cultural characteristics that are instrumental in producing the design outcome.

The purpose of this ethnographic study is to improve cross-cultural web portals of The British Library, The Vernadsky National Library of Ukraine, The Russian State Library, and the Italian National Library Service accessible through the European Library portal. The objective is to evaluate user's access to catalogs, capture the most recognizable features of communication and visual display patterns that characterize the design of each national website, and describe and compare the observations.

Methodological Perspectives

Analysis of digital library cross-cultural web portal can be performed using a combination of techniques suggested by differing methodological perspectives. These perspective include usability testing concerning itself with usability-engineering, human-computer interaction and website design (Spencer 2000; Battleson et al. 2001; Keith et

al. 2002; Blandford et al. 2004), evaluating the construct of the digital library in its entirety and in terms of evolving conceptual approaches, operational functions, attributes, and services offered to the users (Choudhury et al. 2002; Sandusky 2002; Saracevic 2001; 2004), or analyzing websites as cultural artifacts that can be best understood through the prism of ethnography (Crabtree et al. 1998; Seadle 2000; Khoo 2001; Würtz 2005).

A focal point of usability testing activities is the interface evaluation. Battleson et al. (2001) discuss three types of usability testing. First of these types, *inquiry*, elicits information from users employing interviews, questionnaires, focus groups, and surveys. Second, *inspections* primarily rely on the interface developers testing their product using heuristic evaluation and cognitive walkthrough. Third, *formal usability testing* engages the users in performing specific pre-defined tasks and analyzing identified glitches. Blandford et al. (2004) perceive usability testing as empirical and analytical; former approach is based on investigating the users' success in finding the desired information, while the latter is on professionals employing specific techniques for improving the design and usability. These and other articles exploring usability testing discuss heuristic evaluation, cognitive walkthrough, claim analysis and, several others, less known techniques for evaluating the design and functionality of the library websites.

The authors evaluating the digital libraries in terms of evolving conceptual approaches, operational functions, attributes, and services are interested in synthesizing the knowledge resulting from both theoretical inquiry and practical experience hoping to develop more comprehensive understanding of the problems associated with building and utilizing the digital libraries and offer solutions improving different aspects of the process. Thus, Choudhury and his colleagues (2002) review a number of studies

assessing the competency and productivity of the libraries, examining user-centric evaluations, and those adopting multi-attribute, stated-preference techniques for establishing the types of services most valued by the users and associated with providing these services monetary costs. They also describe the experience of participating in one of such projects - the Comprehensive Access to Printed Materials (CAMP) - which is an automated system operating off-site and capable of searching and scanning resources on-demand.

Sandusky (2002) observes that digital libraries are not the same, that is, they developed by different institutions and for various reasons. Therefore, the evaluation should be able to appraise the most important for a given type of library characteristics. Along with reviewing already suggested frameworks and schemes for evaluating digital libraries, Sandusky proposes a system of his own. This system is represented as a list of attributes grouped into six categories, namely, *audience*, *institution*, *access*, *content*, *services*, and *design and development*. The author argues that the effectiveness of the library can be appraised against identified attributes or observing changes affecting the relationships among categories. Saracevic (2001) offers a thorough review of the subject matter discussing the evolution of the digital library concept, capturing somewhat distinct evaluative priorities among the research and the practice communities, and describing several evaluations conducted by the members of both communities. Further, he defines evaluation and its objectives, suggests specific requirements necessary to meet the definition to evaluation and presents various criteria used by evaluators in assessing the functional characteristics of the digital libraries. In 2004, Saracevic follows up with even more extensive overview of the library evaluation landscape by offering what he calls “a critical synthesis of works on digital library evaluation that includes data.” In this work, he

divides the literature discussing the digital library evaluations into two kinds - one exploring the theoretical concerns such as approaches to evaluation and evaluative techniques, the other reporting the results of their evaluations. In his view, the latter kind of literature can be further divided into two subtypes; the first reporting the findings based on the analysis of the "hard data," and the second reporting the results obtained by analyzing the "soft data" which he defines as impressions. Saracevic (2004) continues by listing the aspects most frequently found in the literature reporting the results of evaluations: these are *construct*, *context*, *criteria*, *methodology*, and *findings*. Each of these aspects incorporates specific elements which are evaluated in the process. For instance, category *Construct* contains different types of entities and processes; *Context* includes approaches such as system, human, or usability-centered, and anthropological, sociological and economic; *Criteria* incorporates measuring instruments such as time, relevance, or precision and recall; *Usability* is valuated in terms of content, process, format, and overall satisfaction.

Another group of scholars analyzes the digital libraries and its web portals as cultural artifacts created by people whose training and practices are reflective of the cultural traditions prevalent in their society. For instance, Crabtree et al. (1998) suggest that ethnography can be used in information science research with the results informing the design process. Similarly, Seadle (2000) states that "Culture represents a nexus of shared meaning." It follows then that to develop comprehensive evaluation of the digital library services, it is necessary to gain understanding of the culture exerting its influence on the developers of the construct. Khoo (2001) asserts that it is essential to understand the cultural aspects of any technological artifact and the object's meaning to both its creators and users. Würtz (2005) infers specific implications for web design by analyzing

a number of websites built in Asian and West European countries. Her approach is based on a proposal by an anthropologist Edward Hall (1989), who created a framework for studying the communication patterns of cultures. According to Hall (1989, p. 101), a message originated within specific cultural milieu “can be characterized as high-, low-, or middle context.” Such gradation permits the positioning of the communication patterns on a scale or as a point on a continuum. Hall (1989) defines a high-context (HC) message as one “in which most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, transmitted part of the message” and a low-context (LC) as “just the opposite; i.e., the mass of the information is vested in the explicit code” (1989, p. 91). To exemplify his reasoning, Hall explains that “Twins who have grown up together can and do communicate more economically (HC) than two lawyers in a courtroom during a trial (LC), a mathematician programming a computer, two politicians drafting legislation, two administrators writing a regulation, or a child trying to explain to his mother why he got into a fight” (Hall 1989, p. 91) The various viewpoints and approaches described above offer an opportunity for developing well-suited for meeting the objectives of this study research methodology.

Method

Employing recommendations suggested in usability studies (Spencer 2000; Battleson et al. 2001; Karoulis et al. 2004), the test scenarios were created prior to evaluation sessions. Following ethnographic practices (Burke and Kirk 2001; Button 2003), the researcher acted as a fieldworker accessing the websites, performing specified tasks, and documenting the observations.

Fieldworker

This investigator has assumed the role of the fieldworker. Although each national website posts information in both the national and English languages, the extent of the translation and the degree of equivalency was not known a priori. Therefore, it was beneficial for a fieldworker to possess certain level of the foreign language proficiency. The following self-assessment gives an idea of the investigator's target language comprehension.

Language Comprehension Self-Assessment			
	Advanced	Intermediate	Beginning
Russian	X		
Ukrainian		X	
Italian		X	
English	X		

Table 1. Language comprehension self-assessment.

Materials

Computer: IBM ThinkPad T60 Part # 2623D9U		
Operating System: Windows XP		
Screen resolution: 1024 by 768 pixels		
Color quality: 32 bit		
Processor	Type Data Bus Speed	Intel Core Duo 1.66 GHz 667 MHz
Cache	Type	L2 cache
Memory	Size	512 MB
	Technology	DDR2 SDRAM, PC2-5300
RAM	Memory Speed	667 MHz
	System Type	ThinkPad
Storage	Hard Drive	60GB
Optical Storage	Type	DVD-ROM/CD-R/RW Combo Drive
	Type	15" TFT active matrix
	Graphic Processor / Vendor	ATI Mobility Radeon X1300 – PCI Express x16
	Video Memory	64 MB of DDR SDRAM
	Max. Resolution	2048 & 1536
Internet Explorer	Version	6.0; SP3

Table 2. Description of the materials used.

Internet Connection Type

A cable modem - online speed test indicates 11.544 Mbps downstream (ex: downloading the file) and 2.1171 Mbps upstream (ex: sending an email attachment).

The European Library

Version 2.3. URL: http://search.theeuropeanlibrary.org/portal/en/index.html

Procedure

1. The following national libraries' websites were accessed from the European Library Portal:

- The British Library
- The Vernadsky National Library of Ukraine
- The Russian State Library
- The union catalogue for over 2.000 Italian libraries

2. Five two-hour sessions were carried out to explore each website.

3. The generic task was to find in the national library resources relating to a field of Knowledge Organization (KO).

Selected sequence:

1. From the Main Menu page, a user can press "Collections" button: the next screen is designed as two-sections area. The top frame displays all the links – each link represents the name of a single national library.
2. By clicking the link, however, the user is not redirected to the library's website. Instead, this action takes the user to the lower frame, where he or she will see the name of the national collection or, it is important to note, collections, as some libraries offer access to different portions of their repositories or repositories offering different

choices (i.e. the abstract database versus full-text database or access to general catalogue versus access to scanned card catalogue).

3. In the lower frame, next to label “COLLECTION HOMEPAGE”, the user gets a chance to select the language that will be used to explore the national library webpage. Once language is selected by clicking a link or links, usually denoting English or the national language, the user finally enters the search page that belongs to the national library.

The British Library

Selected option: British Library integrated catalogue - Online catalogues of printed and electronic resources.

Task 1. – Find materials covering the term “Knowledge organization.”
1.1 Navigate from the European Library portal to the national website.
1.2 Select the **English language**.
1.3 Find search box.
1.4 Enter query.
1.5 Document the results.
Task 2. – Find materials covering the term “Knowledge organization.”
2.1 Navigate from the European Library portal to the national website.
2.2 Select the **English language**.
2.3 Find search box.
2.4 Enter query
2.5 Document the results.
Task 3. Assessment of the communication and visual features
3.1 Navigation and Access.
3.2 Organization and Content.
3.3 Color Scheme and Fonts.
3.4 Links.
3.5 Text coverage.
3.6 Miscellaneous details (if observed).
Task 4. – Describe impressions

Table 3. Tasks and activities undertaken to identify the most recognizable features of the British Library website design.

The Vernadsky National Library of Ukraine

Selected option: The abstract database of Ukrainian scientific studies and Full text database of Ukrainian scientific studies

Task 1. – Find materials covering the terms "Організація знання and Організація знань."
1.1 Navigate from the European Library portal to the national website.
1.2 Select the **Ukrainian language**.
1.3 Find search box.
1.4 Enter query.
1.5 Document the results.
Task 2. – Find materials covering the term "Knowledge organization."
2.1 Navigate from the European Library portal to the national website.
2.2 Select the **English language**.
2.3 Find search box.
2.4 Enter query
2.5 Document the results.
Task 3. Assessment of the communication and visual features
3.1 Navigation and Access.
3.2 Organization and Content.
3.3 Color scheme and Fonts.
3.4 Links.
3.5 Text coverage.
3.6 Miscellaneous details (if observed).
Task 4. – Describe impressions

Table 4. Tasks and activities undertaken to identify the most recognizable features of the Vernadsky National Library website design.

The Russian State Library

Selected option: Russian State Library Electronic Catalogue (OPAC)

Task 1. – Find materials covering the term "Организация знаний."
1.1 Navigate from the European Library portal to the national website.
1.2 Select the **Russian language**.
1.3 Find search box.
1.4 Enter query.
1.5 Document the results.
Task 2. – Find materials covering the term "Knowledge organization."
2.1 Navigate from the European Library portal to the national website.
2.2 Select the **English language**.
2.3 Find search box.
2.4 Enter query
2.5 Document the results.
Task 3. Assessment of the communication and visual features
3.1 Navigation and Access.

3.2 Organization and Content.
3.3 Color scheme and Fonts.
3.4 Links.
3.5 Text coverage.
3.6 Miscellaneous details (if observed).
Task 4. – Describe impressions

Table 5. Tasks and activities undertaken to identify the most recognizable features of the Russian State Library website design.

The union catalogue for over 2.000 Italian libraries (ICCU)

Selected option: The union catalogue for over 2.000 Italian libraries

Task 1. – Find materials covering the term "Organizzazione della conoscenza."
1.1 Navigate from the European Library portal to the national website.
1.2 Select the **Italian language**.
1.3 Find search box.
1.4 Enter query.
1.5 Document the results.
Task 2. – Find materials covering the term "Knowledge organization."
2.1 Navigate from the European Library portal to the national website.
2.2 Select the **English language**.
2.3 Find search box.
2.4 Enter query
2.5 Document the results.
Task 3. Assessment of the communication and visual features
3.1 Navigation and Access.
3.2 Organization and Content.
3.3 Color scheme and Fonts.
3.4 Links.
3.5 Text coverage.
3.6 Miscellaneous details (if observed).
Task 4. – Describe impressions

Table 6. Tasks and activities undertaken to identify the most recognizable features of the ICCU website design.

Findings and Discussion

The following two tables display the search results and summarize the most recognizable features of communication and visual display patterns that characterize the design of each national website.

Library	Database	Term		Results
British Library	The Integrated Catalogue	Knowledge organization		513
National Library of **Ukraine**	**Database**	**Term**	**Form**	**Results**
	The abstract database of Ukrainian scientific studies	Організація знання	Singular	12
		Організація знань	Plural	68
		Організація знан$	Generic	**82**
	Full text database of Ukrainian scientific studies	Організація знання	Singular	8
		Організація знань	Plural	37
		Організація знан$	Generic	**45**
	Database	**Term**		**Results**
	The abstract database of Ukrainian scientific studies	Knowledge organization		1
	Full text database of Ukrainian scientific studies			16
Russian State Library	**Database**	**Term**		**Results**
	Books printed before 1830	Организация знаний		0
	Electronic collection of musical notation editions			0
	Universal collection			0
	Library of electronic dissertations			72
	Lenin's electronic			3
	Electronic catalogue			385
	Database	**Term**		**Results**
	Books printed before 1830	Knowledge organization		0
	Electronic collection of musical notation editions			0
	Universal collection			0
	Library of electronic dissertations			0
	Lenin's electronic			0
	Electronic catalogue			26
Union catalogue for **Italian** libraries	**Database**	**Term**		**Results**
	The union catalogue for over 2.000 Italian libraries	Organizzazione della conoscenza		38
	Database	**Term**		**Results**
	The union catalogue for over 2.000 Italian libraries	Knowledge organization		76

Table 7. The libraries reviewed.

Library	Search box	Color	Fonts	Links	Text coverage
British Library	Accessible via the Euro portal; separated from the main page	White Black Navy Gray Blue Red **6**	Arial Unicode MS Arial Verdana	20	91
National Library of **Ukraine**	Accessible via the Euro portal; separated from the main page	White Black Navy Gray Beige Fuchsia **6**	Times New Roman Arial	4	50
Russian State Library	Embedded into the main page, which is accessible via the Euro portal	White Black Navy Gray Blue Aqua **6**	Taxoma Arial	49	578
Union catalogue for **Italian** libraries	Accessible via the main page, which is accessible via the Euro portal	White Black Navy Red Silver Yellow-orange Blue-violet **7**	Verdana	38	149

Table 8. Search page location and design features.

The websites of the national libraries are as different as the cultures they represent. The British and the Ukrainian Libraries' search pages are accessible directly from the European Library portal. The search function for the Russian Library is embedded into the main page. The user who navigates to the Italian catalogue, reaches the Italian National Library Service (SBN) webpage first, from there, he or she can get to the

search page. The scaled down, minimalist approach of the Ukrainian library search page design stands out compared to other sites. Manifestly different implementation of some basic functional elements, demonstrates how difficult it is to achieve the effect of homogeneity in a cross-cultural environment. For instance, the developers of the British Library made use of following wildcard characters - the question mark (?), the pound sign (#), the exclamation mark (!) and the percent sign (%). The developers of the Ukrainian website implemented the dollar sign ($) as the only functional wildcard operator. Their Russian and Italian colleagues decided to use the asterisk (*).

The content and structure of the “Help” documents reveals the cultural assumptions of its creators. The help document provided by the British Library is 53 pages long; the Ukrainian Library search tutorial is about half the size of the page. The Russian library help document consists of 6 printed pages. The Italian National Library Service (SBN) help document with its onion-type design is as much a piece of art as it is of help. On the left side of the very first page, there are five clickable links. By clicking any of these links, the user opens a subsequent page that also contains some text and more links. To explore this cascading design and to read all the pages, the user has to click 39 times.

The choice of colors used for designing the websites is a strong indicator of specific cultural preferences. For instance, each national website features white, black and navy colors. According to the experts, black is “authoritative and powerful,” while white “projects purity, cleanliness, and neutrality” (SQUIDOO 2010). Undoubtedly, these colors bring presence as they contrast well with other colors. Navy is associated with “dignity, credibility and trustworthiness” (HP n.d.). The next most popular color is gray; it is used by the designers of the British, Russian, and Ukrainian libraries. The experts describe this color as “neutral, classic, and practical” (HP n.d.). Blue, classified by the experts as

“trustworthy, dependable and committed” (SQUIDOO 2010), appears on the British and the Russian websites. Red is used by the British and the Italian designers. In fact, a presence of red, which is perceived as “energizing, intense, and aggressive” (HP n.d.) lends quite noticeable and distinct element to the design of these two websites. The color fuchsia, which is “associated with emotional stability” (Goodluckcreations.com 2010), is implemented by the Ukrainian designers. They use beige, which the experts describe as “earthy, classic, neutral, and melancholy” (HP n.d.), to set the background. Less frequently used colors include aqua, associated with “confidence, strength, and idealism” (Bernadine 2009). This color appears on the Russian State Library website. The Italian website features silver, and lively combinations of yellow-orange and blue-violet. The experts state that “Silver is the color of security, reliability, intelligence, modesty, maturity, and conservatism” (Sophie's Favors 2010), “Yellow is associated with joy, happiness, intellect, and energy,” and “Orange combines the energy of red and the happiness of yellow” (Color Wheel Pro 2010). Blue, as we already know, symbolizes trustworthiness, dependability, and commitment (SQUIDOO 2010). Violet is associated with a higher degree of complexity. One source informs that “Violet symbolizes harmony of the universe and the planets in the solar system because of the combination of red (known as *yang*) and blue (known as *yin*)” (Wikia 2010). Another source states that “In Christian art, the violet symbolizes the Virgin Mary’s humility” (Hill 2007). Finally, it should be noted that the designs of the British and the Italian libraries websites have much in common; same statement can be said in relation to the designs of the Ukrainian and the Russian websites. However, there is quite noticeable difference between the design patterns of these pairs. The British and the Italian designs propel

energy and assertiveness; the Ukrainian and the Russian website designs project tranquility and comfort. The choice of fonts used in designing the reviewed web pages is rather ordinary and the overall effect on appearance is congruent with the intended purpose.

The design of each national website is clearly ethnocentric. The British Library website communicates with its visitors using the English language only. Likewise, the Ukrainian and the Russian search pages do not provide search instructions written in a foreign language. A brief history of each national library, written in English, is available on these libraries' main pages. In addition, the homepage of the Russian Library features a virtual Russian/English keyboard. The Italian Library Service (SBN) website is more accommodating to foreign visitors. The link "English" appearing on the homepage allows a language switch; by clicking, the user changes the language to English. In addition, headings and subheadings of the search pages are in English as well.

Classifying the communication patterns of the national websites in terms of context, as suggested by Hall (1989), places the Ukrainian website at the top of the scale. The search page featuring 50 words and 4 clickable links presents itself as a high-context (HC) transaction. The British Library follows; its search page features 91 words and 20 links. The Italian webpage is at the lowest point of the continuum with 149 words and 38 clickable links. Since the Russian State Library main page features the embedded search functionality, this type of design precludes this webpage from being evaluated under the same criteria.

The main page of the Russian State Library displays both the logo and the link of the company designing its web pages; by clicking the link, the user will be taken to the vendor's private webpage. Similarly, the Italian National Library Service (SBN) webpage

features the link taking the user to the homepage of its web designer. Apparently, such business practices do not create the appearance of a conflict of interest in the eyes of the public entities administrations.

Undoubtedly, the European Library is a remarkable instrument for navigating the boundless universe of knowledge. Although a substantial amount of work has already been done, further improvements involving collaboration among all participating libraries are needed to ensure that users are empowered to explore as many different collections as realistically possible. This means minimizing the differences between design patterns, increasing the diversity of language options offered by each national library, and performing thorough functional testing. Obviously, usability issues are not the only problems to be dealt with. For instance, Stigter (2008) posted a message informing that

> … newly-formed Users Advisory Board of The European Library was put into action for the first time when it met National Library representatives and members of different partner library organisations to discuss *Do library portals have a future?*
>
> While considering user expectations for digital library services, the strategic possibilities of portals to fulfil the role of gateways to electronic resources was examined.

The message is concluded by stating that “Overall, it was suggested that portals such as The European Library and Europeana may be stepping stones to an alternative long-term solution” (Stigter 2008). Obviously, all relevant to successful functioning of the European Library concerns must be addressed. It is therefore imperative to recognize competing priorities and create a balanced approach to resolving all identified issues.

Acknowledgment

I would like to extend my gratitude to the Palmer School of Library & Information Studies of Long Island University for allocating travel funds to participate in the Connections 2010 conference.

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