The Assessment and Comparison of Content Management of Some Websites of National Libraries in America, Europe and Asia

Mohsen Nowkarizi, Nosrat Fanudi, and Zahra Nowrouzi

Abstract—**This study has assessed and compared content management of some websites of libraries in America, Europe and Asia; it is also about to what extent being paid attention to the principles of content management based on the best systems of content management in websites of national libraries. Content management may be known as the process of collecting, organizing and classifying of any kind of information resources in order to store, recover, disseminate, update and reuse these information resources desirably. The population is national libraries of USA, Denmark, England and Sweden (Group A) from America and Europe, national libraries of Iran, Japan, Singapore and Turkey (Group B) from Asia which were assessed based on the criteria in the search list. Content management of the websites of national libraries in Asian countries was compared to that of America and Europe. The results showed there were totally 82 percent of expecting features in websites of national libraries in Group A, in which the best one was LC one, while it was 83 percent in websites of national libraries in Group B, in which the best one was the Singapore website. There was not any considerable difference, with respect to content management, between current situations of national libraries websites in Group A and Group B. But websites of national libraries in Asian countries had relative superiority. The National Library of Turkey website was the worst among all.**

Index Terms—**Content analysis, content management, national library websites, website assessment.**

I. INTRODUCTION

Internet and World Wide Web influence the communicative and informative media and change their performance essentially. "Websites" are of new informative media which generated simultaneous with the changes in the Internet.

In today's communication world, all productive and service organizations require websites. Libraries and information centers, which are considered as knowledge centers and play a key role in gathering and disseminating knowledge, are not exempted. Most of libraries and information centers presented services in this way. On one hand, an outlet to those libraries is their website, and on the other hand, it is a guide to users on Internet. Therefore, to offer better services and be more pragmatic in websites, they should be active, dynamic, useful and attractive in their structures, content and design for users.

The content in literal environment may include texts,

links, graphics, pictures, sounds, etc. Content management gained importance in the period of great growth of websites in the middle of 1990s. Most of institutes utilized static websites (HTML) to offer information sources to their users, but they faced problems in handling and updating of all information sources (content) used in their site, with increasing of website's size and bulk [1]. Simply speaking, content management is known as the process of collecting, organizing and classifying of any kind of information sources in order to store, retrieve, disseminate, update and reuse ideally these information sources [2].

Libraries and information centers, traditionally dealt with various kinds of information sources and content, could use websites, like other institutes, to represent information sources to their users. Content management system is very important for librarian because the huge size of their websites' information has come to the point that its preservation was a problem. In most of libraries, websites are designed based on librarians' interests, but their various occupations and time-consuming of website updating impede they pay more attention to them [3].

National libraries are the treasure and sentry of a nation's cultural heritage and have their roots in the nation's past. In addition, national library collect the products and sets of scientific, artistic and cultural activities and is considered as the heart of information system of the country. With respect to central position of information and informing in human's present civilization, a national library is an institute which plays an active role in forming today culture and changing the society toward a better tomorrow in spite of preserving yesterday's inheritance [4].

Even now, due to information and communication technologies, a dynamic environment has been established, and national libraries enjoy very good facilities for playing this role. The managers of these libraries found that they could be present in national and international scenes by designing and managing websites, without attention to local and temporal limitations and with more and better facilities. Doubtless a powerful website is enough for responding to many needs of users of national libraries in every place of the world. National libraries, in addition to invest for design and management of websites, have to invest to introduce and offer their website and its content [5].

Content management system (CMS) is systematic software used to content management. It presents a method for handling a great deal of information based on the web, which prevents to enter information source's codes to every HTML page. Content management system includes content from the initial phase to the disseminating one. It does this process in a way that there is maximum accessibility, ease,

speed and precision of content [6]. Libraries and information centers use various content management systems.

National libraries all around the world, with respect to key role in forming all society, tend to make a website for their library to give their users the instant news and information related to library and to offer most of their services by web. To do this, they are used of different content management soft wares which all have specific pros and cons. This study do not follow the best content management, but it aims to assess content management of several national libraries based on a check list of the best content management features. Although it seems the managers of national libraries website all over the word pay attention to content management websites' assessment, this necessary evaluation leads to offer better their services. Thus, the question of research is to what extent do managers of national libraries 'websites pay attention to content management of their websites? Or does attention to content management of national libraries' websites in Asia differ from that of America and Europe? This study aims to answer such questions. The websites were assessed based on the criteria in search list (arranged based on features of the best content management system).

A. Basic Question

How much of elements and features in design of national libraries' websites in world does content management system of national libraries' websites in America and three European countries England, Sweden and Denmark cover?

How much of elements and features in design of National libraries' websites in world does content management system of National libraries' websites in four Asian countries Iran, Turkey, Japan and Singapore cover?

In what level is content management system of National libraries' websites in Asia compared to content management system of National libraries' websites in America and Europe?

B. Literature Review

The studies done in Iran showed that few researches can be found on website content management, and it seems the only study in about has been established by Yoosefifard and Fadai [7] which discussed recognizing proper components and features of content management system for university libraries' websites in Iran. In first phase of it, the conditions of superior university libraries' websites over the world were studied, using a check list. In second phase the amount of content management systems' ability on the international market was investigated using the list obtained from first phase results. In third phase, conditions of university libraries' websites in Iran were studied using first phase list. Comparing third phase results with first phase results indicated that there was a significant difference between conditions of university libraries' websites in Iran and university libraries' websites of first phase.

VandeCreek [8] discussed the case study of Illinois university libraries in her study usability analysis of Illinois university libraries' website. In this study, qualitative and qualitative data related to the case were discussed. The finding indicated that qualitative data were more valuable than qualitative data. she suggested redesigning the study of library websites.

Ascher et al. [9] studied website of a medical university library with the goal of providing data for redesigning library websites. They used of a two-phase method consists of initial study designed for recognizing common subjects and tasks and usability test. The results showed general satisfaction in proposed area for testing based on responses. They also showed all users had problems in navigating website. They provided some advice to remove this problem and finally proposed this method for medical university libraries.

This review of content management of library websites shows what is more important than designing a website for a library, is to pay attention to offered content in framework of that website. Although available content management systems facilitate the way for website manager, they should pay attention to firstly selecting superior system and then assessing it constantly so that, if necessary, website is redesigned and library users may benefit to have a powerful and efficient one for their library. Various methods can be used for assessing websites. One of the most common methods is using search list which we used in the study.

II. METHODOLOGY

To study content management quality of national libraries websites, it has been used of search list which was provided by Yoosefifard and Fadai Araghi [7]. They studied in first stage the elements presented in creditable university libraries' websites over the world (U.S, Australia, England, and Canada). The list was diagnosed suitable by studying National libraries' websites. Based on their list, but to have a complete one, the search list used in this study has been designed after studying past works. For determining validity of list, content validity method was used. In this method the arranged list was given to several professors of library and information science field. Based their views, corrections were done in it. The search list in use contained 32 items, among them 7 ones removed because of disagreement with available features in national libraries website and their number was decreased to 25.

First, national libraries' websites of America, Europe and Asia were browsed. In all national libraries' websites of 3 continents, pilot investigations were carried out to choose the sample. National libraries' websites in these 3 continents divided in two parts (those of America and Europe and the Asia ones) to compare them easily. Then in order to select some library websites, several websites in every continent were studied, and finally those with convenient language features (website pages in English), powerful content management system and more user-friendly were picked up as sample. From America, Library of Congress website was chosen as the only sample due to importance, background and having mentioned features. In this group, national library websites of Denmark, England and Sweden were also selected. In Asia, with respect to mentioned criteria, national libraries' websites of Iran, Japan, Singapore and Turkey were chosen. Data was gathered from 8 February up to 15 August 2011.

III. FINDINGS

To respond to the first question, the assessment of library of Congress and 3 national Libraries of Europe websites was carried out, using the search list. 15 features out of 25 items were commonly available in all websites (see Table I). The results showed the website of National Library of Denmark lacked 7 features out of 25 items. There were as follow: News archive, news in RSS or ATOM format, online answering questions, personalizing contents, current awareness services, SDI services, and updating date. In spite of its suitable appearance, British Library website lacked 3 features of online answering users' questions, SDI services and updating date. In Sweden National Library website, there were not 6 features out of 25 ones. It lacked the followings: informational and propaganda banners, online reference services, polling, current awareness services, SDI services, and subject classification of website contents. In case of Library of Congress (LC) website, there were all features except 2 ones: Personalizing contents and Selective Dissemination of Information (SDI). So it seems LC website is one of the best website with respect to content management. After that national Libraries' websites of England, Sweden, and Denmark ranked respectively.

In response to second question, Asia national libraries were assessed. Out of 25 items in search list, there were 14 common features in all websites of national libraries investigated (Iran, Japan, Singapore & Turkey) (see Table I). The results showed Iran National Library website lacked just 3 features out of 25 ones: Personalizing contents, SDI services, and subject classification of website contents. In the case of Japan National Library website, there were 7 features among 11 remained ones, and it lacked the followings: online answering questions, polling, subject classification of website contents, and updating date. The National Library website of Singapore was one of the best website with respect to content management in Asia. This website lacked just 2 features among all: SDI services and subject classification of website contents. Finally, the

National Library website of Turkey lacked 8 features as follow: News archive, news in RSS or ATOM format, online answering questions, possibility of sending news etc through E-mail, offering printable format of information, current awareness services, subject classification of website content, and updating date of website. Therefore, one may rank the National library websites of Singapore, Iran, Japan and Turkey respectively in Asia, from the view point of content management.

In third question, it aimed at comparing content management systems of national libraries websites in Asia with those in America and Europe. The results showed there were totally 82% of expecting features in the national libraries websites in America and 3 European countries (Group A), while this figure becomes 83% in the national libraries websites of 4 Asian countries (Group B).

The subject priorities observed in Groups A and B websites followed the same order in comparison with each other; however the degree of attention to the subject categories was different in the two groups. These subject priorities in the websites of two groups were as follow:

First priority: Navigating (including simple and advanced search in website contents), title on top of each page, related links, website map, and subject content classification of website.

Second priority: Guidance and information related to website, such as help, FAQ, the last updating date.

Third priority: offering information and news, including news and events, news archive, informational and propaganda banners, offering news and information in RSS and ATOM format.

Fourth priority: direct interaction between users and webmasters, such as contact web and library managers, offering online reference services, polling, answering online users' questions.

Fifth priority: facilities related to content personalization, including offering information in various languages, offering information in PDF format, offering information in printable format, current awareness services, and SDI services.

TABLE I: THE STATUS OF NATIONAL LIBRARIES WEBSITES OF USA, DENMARK, ENGLAND, AND SWEDEN.

Item	Have	Have not	Item	Have	Have not
News and Events	All	--	Current awareness via website	U, E	D, S
News archive	U, D, E[†]	S[†]	SDI services	--	All
News in RSS & ATOM	U, E, S	D	Site map	All	--
Info. & Ad. Banners	U, D, E	S	Subject classification of site content	U, D, E	S
Reference Service by Email	All	--	Title on top of the page	All	--
Online answering question	U	D, E, S	Link to related pages	All	--
Contact web & library manager	All	--	Simple search	All	--
Polling	U, D, E	S	Advanced search	All	--
Personalizing contents	E, S	U, D	Access to OPAC	All	--
Sending news etc by email	All	--	Access to help	All	--
Offer printable format	All	--	FAQ	All	--
Offer PDF format	All	--	Availability of updating date	U, S	D, E
Information in various languages	All	--	----------------		

† U= USA, D= Denmark, E= England, S= Sweden

TABLE II: THE STATUS OF NATIONAL LIBRARIES WEBSITES OF IRAN, JAPAN, SINGAPORE, AND TURKEY.

Item	Have	Have not	Item	Have	Have not
News and Events	All	--	Current awareness via website	I, J, S	T
News archive	I, J, S†	T†	SDI services	J, T	I, S
News in RSS & ATOM	I, J, S	T	Site map	All	--
Banners	All	--	Subject classification of site content	--	I, J, S, T
Reference Service by Email	All	--	Title on top of the page	All	--
Online answering question	I, S	J, T	Link to related pages	All	--
Contact web & library manager	All	--	Simple search	All	--
Polling	I, S, T	J	Advanced search	All	--
Personalizing contents	J, S, T	I	Access to OPAC	All	--
Sending news etc by email	I, J, S	T	Access to help	All	--
Offer printable format	I, J, S	T	FAQ	All	--
Offer PDF format	All	--	Availability of updating date	I, S	T, J
Information in various languages	All	--	----------------	-------	-----------

† I= Iran, J= Japan, S= Singapore, T= Turkey

IV. CONCLUSION

Based on results, among group A, national libraries websites, USA, England, Sweden, and Denmark ranked first to fourth respectively in the light of content management. The feature of SDI services was not possible through websites of this group and it may be main problem of these websites. Among group B, the websites of Singapore, Iran, Japan, and Turkey had the most features respectively in the light of content management. The feature "subject classification of websites contents" was not observed in any website of 4 libraries. It seems the national libraries websites of Denmark, from group A, and that of Turkey from group B, were weaker, and their webmasters need to pay more attention to content management issues more than past. The National Library of Turkey website was the worst among all. It appears the websites of LC, in group A, and the National Library of Singapore, in group B, were in an ideal status from content management point of view, and may be considered as a model based on which other countries may design their national libraries websites. Totally, there was not a considerable difference of content management status between the websites of two groups, but those of group B have relative superiority. It seems the managers of national libraries websites of some countries, such as USA, Singapore, Iran, England, and Japan, have paid more attention to content management than those other countries investigated in this study, especially Denmark and Turkey. It may arise from countries cultures and national library dignity in culture, and sanctity of reading in these countries.

REFERENCES

[1] H. Behzadi and M. Sanji, "Presentation of theoretical model for exploitation of content management systems in library websites," *Scientific Communications*, vol. 15, no. 3, pp. 25-30, June 2010 [Persian]

[2] H. Yu, "Content and workflow management for library website: case studies," *Hershey, Information Science Publishing*, 2004.

[3] M. Seadle, "Content management systems, Content and workflow management for library website: case studies," *Library Hi Tech.*, vol. 24, no. 1, pp. 5-6, Feb. 2006.

[4] F. Osareh and A. Moradmand, "Recognizing main features in designing websites of national libraries in the world to present a proper pattern for qualitative improvement of Iranian National Library's website, Information architects and their central role on content management," *Informationology*, vol. 2, no. 5-6, pp. 170-190. March 2005 [Persian]

[5] M. Haji Zeinolabedini, L. Maktabifard, and F. Osareh, "Analysis of national libraries websites in the world, Information architects and their central role on content management, Information architects and their central role on content management," *Educational and Psychological Studies*, vol. 25, no. 3, pp. 173-194, Nov. 2006 [Persian]

[6] R. Warren, "Information architects and their central role on content management," *Bulletin of the American Society for Information Science and Technology*, vol. 28, no. 1, pp. 23-25, Oct./ Nov. 2001.

[7] M. Yoosefi Fard and G. R. Fadai Araghi, "Presenting proper features for content management system of Iranian national libraries websites based on elements in websites of university libraries in the world," *Library Message*, vol. 15, no. 1, pp. 65-93, July 2009 [Persian]

[8] L. M. Vande Creek, "Usability analysis of Northern Illinois university libraries website: a case study," *OCLC Systems and Services*, vol. 21, no. 3, pp. 181-192, March 2005.

[9] M. T. Ascher, H. Lougee-Heimer, and D. J. Cunningham, "Approaching usability: a study of an academic health sciences library website," *Medical Reference Services Quarterly*, vol. 26, no. 2, pp. 37-53, June 2007.