

LIBRARY KNOWLEDGE PORTAL: AN ADVANCED USER INTERFACE FOR DISSEMINATING SERVICES

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Abstract: Today's digital libraries are extremely complex information systems, which run on the Internet. The facilities of digital libraries are increasing daily as the technology advances with a motive to provide the appropriate information to its users. The very purpose of the digital libraries is to provide the required information to its users in a convenient and fashioned manner. Since the digital libraries are running on the Internet and the users are from different psychological, educational and social backgrounds, the usage of digital libraries is varying from user to user which entail the need of best user interface. Hence, a portal represents a web site that provides a single point of access to applications and information. From an end user perspective, a portal is a web site with pages that are organized by tabs or some other form of navigation. Each page contains a nesting of sub-pages, or one or more portals—individual windows that display anything from static HTML content to complex web services. Library's knowledge portal has been described as the most popular form of the technology that provides networked information about library's collections, digital resources, web sites, and services.

Keywords : Knowledge portal, Knowledge management, FOSS, User interface, CMS, drupal

1. Introduction:

Twenty first century's libraries are not only conventional or physical library but have a sound existence in virtual or digital environment. Digital Libraries provide an infrastructure for creating, structuring, storing, organizing, processing, retrieving, and distributing multimedia digital information via Internet. Digital libraries are disseminating the knowledge globally by breaking the physical barriers. Digital libraries are truly a technology for the masses, which plays a vital role in sharing of knowledge and culture. Digital libraries can't be used in isolation; human interaction is the most important aspect of it. User Interface is one of the major components that affect its use. The user interface system, has gained much deliberation due to the fact that it affects the usability, which is a key factor for the success of a product.

So, we can say that, dissemination of the library services of a digital library is directly proportionate to the efficiency of the library website, more specifically user interface of the library. To enhance the efficiency, knowledge portals are very useful. A knowledge portal speed up this process of learning and facilitates more effective transfer between tacit and explicit knowledge automatically, as well as contain structured information, knowledge networks and communities,

discussion forums and collaborative workspaces. So that the library website can be able to better encourage the collaborative work space and several services through the user interface.

2. Problem and Motivation:

Library is a temple of knowledge and library website should be the mirror of its collection. But the problem is generally library website is not able to serve the purpose. In India most of the libraries do not have a proper website; those are more specifically only a webpage along with main institution or organization. Generally in this kind of webpage they provide the general information such as opening/closing time of library, about their staff, general policy of the library and collection of books, journals and so on.

We need to realize that library websites are not only for providing general information but have also some responsibility to give more information about the resources and provide a pathway to its users to share their knowledge through a single platform. To conquer this situation; knowledge portals have come into the picture.

3. Concept of Knowledge Portal:

Before going to the discussion on knowledge portal we have to understand the concept of knowledge, knowledge management and portal.

3.1. Knowledge:

Knowledge is obtained from information, but is more meaningful and richer than information. Knowledge is dynamic and non-uniform in nature. Mainly two types of knowledge are available; these are explicit knowledge and implicit knowledge. The Librarian is very familiar with the explicit knowledge as it is recorded in the books, journals, CDs and etc. This knowledge can easily be served to the user but what about implicit knowledge? Implicit knowledge is that knowledge which can be considered as personal or what a person knows, it is not written or documented in anywhere.

3.2. Knowledge Management:

After identifying the knowledge, the next step is to how to manage that knowledge. The motivation behind the origin of knowledge management was the information detonation. Every academic institution produces large quantity of data and information, which requires fruitful management to identify and retrieve the required information at the right time. So the concept of knowledge emerges as a strategy to develop academic institutional knowledge and capacity to obtained relevant knowledge from information.

Knowledge Management is a form of expertise centered management which draws out tacit knowledge and converts to explicit knowledge and disseminates to the users.

3.3. Portal:

In simple sentence, we can say that portal is a single point of access to get the information. A portal is website that is organized by some tabs and navigation to direct the user to get the required information. In a single window it offers the search engine and useful links and so on. There are mainly two types of portals. Those are vertical portal, which provide information for a particular domain. For example, agriculture portal provides only agriculture related information. Another one is horizontal portal, which touches maximum domains and provide little bit of information for everyone. For example, Yahoo portal snippet information and gives it to the users from more than 25 domain.

3.4. Portal v/s Website:

Portal is a single window platform by which a user can access broader array of resources. On the other side, website is a collection of images, videos and web pages which are related to a common URL. It is basically a domain name which is hosted on a server and accessible via a network.

3.5. Knowledge Portal:

Knowledge portal is the best knowledge management tool to manage any organizational knowledge. Knowledge portal is the gateway to the institutional databases, it includes both internal web contains and external web contains. Even a user from remote area will be able to access the same knowledge portal. A user of a knowledge portal will offer the potentiality to create, transfer, deliver and access information and education without borders. The user can get the search interface and the useful links which are organized by tabs. The main functionality of knowledge portal is to capture the implicit knowledge and store for further use. It offers forum for discussion among the users and the experts. We know that human beings can understand a topic in a better way by discussion rather than reading the topic from books and study materials. It also offers to capture the intellectual capital and self experience from forum for future use for the same problem. Blog is another main feature of knowledge portal. It gives the users to get idea from domain/subject experts' blog.

4. Work methodology of knowledge portal:

Some procedure is required to make a knowledge portal successful. This includes

- i. *Selection of contents:* Knowledge experts (more specifically domain experts), knowledge workers due to their long experience on a particular domain or subject and ability to know the psychological needs of the users, they are most capable person to identify the available knowledge of any institution and select those for knowledge portal.
- ii. *Validation of contents:* after selecting the knowledge, the domain experts are required to evaluate the contents and give the suggestions where to add, delete and which part of the content is required and which is not..
- iii. *Up-to-date:* the main aim is to always keep the knowledge portal up-to-date with current information otherwise the user can become unwilling to use the knowledge portal.
- iv. *Evaluation procedure:* Some statistical techniques have been developed to quantify how much knowledge portal's contents are sufficient to the user. This measure helps to know which links, contents are more searched and which are not. With this measurement, institution can modify its knowledge portal.

5. Principle behind designing good user interface in Knowledge Portal:

A user interface is the design of computers, appliances, machines, devices and software application focus on the user experiences and interaction. The aim of a good user interface is to establish a connection between users/patrons and the machine which provides valuable information. A knowledge portal must provide a single point of access to a huge quantity of information that is available to a diversity of d patrons with a different psychological, academic, social backgrounds and information needs over Internet. All the users of library do have similar psychology to access the information from the interface. By considering the various patron requirements, the designers have to follow the designing principles that are discussed below:

- i. *Simple-* The library user interface should be simple and straightforward. A well organized simple user interface can easily provide the information that a user wants.

- ii. *Access-* The library user interface should provide full access facility to the user.
- iii. *Familiar-* The user interface of a library should be familiar with the patrons. Users should not have to learn new things to access the interface.
- iv. *Prevent Errors-* The user interface should be designed in such a way that patron can't make errors. The interface should provide technique to detect the error and give simple instruction that user can understand.
- v. *Multimedia Support-* In the present day, libraries not only offer the textual information but also multimedia information. So, user interface should support the multimedia information.
- vi. *User Profile-* Libraries are offering the user profiles in order to serve valuable services like SDI. The User Interface must act according to the settings specified in the user's profile and the settings should be changeable from time to time by the users.
- vii. *Multilingual Support-* Nowadays, most of the libraries offer information that is not in one language. So, user interface should support multilingual facility.

6. How to construct Knowledge Portal:

With the help of HTML5 and CSS3, we can construct the knowledge portal. But the main problem is, developing knowledge portal with HTML5 and CSS3 requires concept of syntax, coding and other IT knowledge. Library and information professional generally don't have sound knowledge of IT and web technology. Library can give the responsibility of making knowledge portal to any IT company but they have to remember that libraries have limited finance for serving the user against the increasing user base and demand for quick service. The price of the hardware is going down while the price of software is increasing day by day. So, the best solution is Free/Open Source Software (FOSS). There are various FOOS content management system/software (CMS) available for building knowledge portal. So let's discuss the concepts of Free/Open source Software and content management system/software

6.1. Free/Open Source Software (FOSS):

The software that is free for anyone to use along with the availability of source code i.e. anyone can modify, fix, append to, remove from; completely change the code according to one's wish can be considered under the umbrella of Open Source Software.

6.2. Content Management System/software (CMS):

Before knowing about CMS, we have to first understand the three root elements that are content, management and system.

In general, content is any type or unit of digital information. It can be text, video, graphics, documents, records etc. in another words, it can be anything that is likely to be stored and manage in an electronic format. The management refers to be process and rules of storing content. The system itself is definable as software or tools that facilitate to manage the content in an efficient manner.

So we can say that, content management system is computer software for storing, modifying, transferring and achieving the electronic content and manage them in a systematic way.

6.3. FOSS Content Management System/Software:

There are various free and open source CMS software is available on internet. Some of the popular content management software are-

- i. Drupal (<https://drupal.org/>)

- ii. Joomla (<http://www.joomla.org/>)
- iii. Php-Fusion (<http://www.php-fusion.co.uk/news.php>)
- iv. Pimcore (<http://www.pimcore.org/>)
- v. CMS Made simple (<http://www.cmsmadesimple.org/>)
- vi. Website Baker (<http://addon.websitebaker.org/pages/en/home.php>)
- vii. Concrete5 (<http://www.concrete5.org/>)
- viii. Redaxscript (<http://redaxscript.com/>)
- ix. xoops (<http://www.xoops.org/>)

Drupal and Joomla are the most famous CMS software among above.

7. Practical implementation:

We have tried to develop a knowledge portal using Drupal. In this knowledge portal we have provided the header section with menu/sub-menu and in the left/right section online reference services.

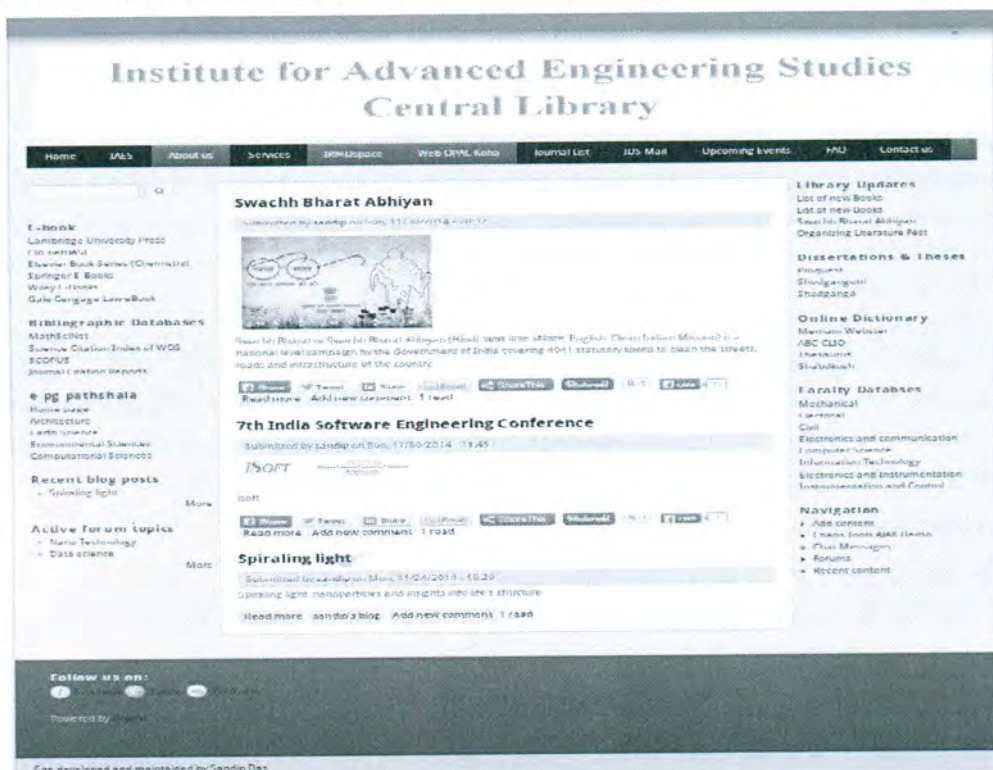


Figure: screen shot of demo knowledge portal

8. Conclusion:

The role of the librarian is, that of a selector and organizer of information on the web. The portal offers the user the ease of searching many sources at once, integrating results from licensed resources and local databases and bibliographical descriptions of digitized material. Equally, the familiar portal interface is an option for searching databases that are unfamiliar to the users. Librarians bring their expertise with content, their knowledge of copyright, their commitment to customer service and their experience in creating customized web-based information delivery systems.

9. References:

1. Das, Sandip (2014). Content Management and its application: An Overview. Available at <http://www.liscom.org/postContent/fullPaper/pdf/paper%20presented/C%20%20Content%20Management%20and%20its%20application%20An%20Overview.pdf>, accessed on 25th Nov 2014
2. Design of Knowledge Portal. Available at http://shodhganga.inflibnet.ac.in/bitstream/10603/9772/10/10_chapter%205.pdf, accessed on 2nd oct' 2014
3. Ismail, Aisyah and Sulaiman, Shahida (2011). A Model for Knowledge Portal to Support Communities of Practice. Available at <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6140715>, accessed on 2nd oct'2014
4. M, Letha M. (2006). Library portal: A Tool for Web-enabled Information Services. DESIDOC Journal of Library & Information Technology. Available at <http://publications.drdo.gov.in/ojs/index.php/djlit/article/view/3691>, accessed on 3rd oct' 2014
5. Walia, P K, and Suboohi, Siddiqui (2010). Knowledge Management through Knowledge Portals in Libraries: Challenges and Issues. Available at <http://ir.inflibnet.ac.in/handle/1944/973>, accessed on 4th oct' 2014
6. Goswami, Tarini Dev (2007). Knowledge Portal: Challenges Before Library and Information Professionals. Available at <http://ir.inflibnet.ac.in/handle/1944/1031>, accessed on 5th oct'2014
7. Laxminarayana, B and Sunil, Adupa and Sudheer, Soora (2007). Implications of Knowledge Portals on Library Information Services. Available at <http://ir.inflibnet.ac.in/handle/1944/1045>, accessed on 10th oct'2014
8. Zala, Lavji N and Patel, Niraj R (2006). Library Portal : A Gateway of Information. Available at <http://ir.inflibnet.ac.in/handle/1944/1153>, accessed on 11th oct'2014
9. Konnur, P V and Kacherki, Umeshreddy (2006). Library Portal: Role of Librarian. Available at <http://ir.inflibnet.ac.in/handle/1944/1154>, accessed on 15th oct'2014
10. Jotwani, Daulat (2005). Library Portal: A Knowledge Management Tool. Available at <http://ir.inflibnet.ac.in/handle/1944/1575>, accessed on 20th oct'2014
11. Neubauer , Wolfram and Piguat, Arlette (2009). The Knowledge Portal, or the vision of easy access to information. Available at <http://www.emeraldinsight.com/doi/pdfplus/10.1108/07378830911007691>, accessed on 21st oct; 2014
12. Sastry, Hanumat G and Reddy, Lokanatha C(2009). User Interface Design Principles for Digital Libraries. Available at http://www.researchgate.net/profile/Lokanatha_C_Reddy/publication/228680679_User_Interface_Design_Principles_for_Digital_Libraries/links/0912f505ed378c77b2000000.pdf, accessed on 21st oct;2014