



WEB TECHNOLOGY FOR LIBRARY AND INFORMATION SERVICES

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ABSTRACT

Web Technology is playing a vital role in current society. Recent developments in the technologies have brought changes in the modes and methods of information, storage, retrieval and transmission. Web technology has open new dimension to the information systems. WWW has created a sound impact on the library and information centers to have access to different information sources and disseminate to the users. This paper mainly discusses

INTRODUCTION

The Web or World Wide Web (W₃) or Internet or Online is basically a system of Internet servers that support specially formatted documents. Today's world is digital world, which is concerned with creation, sharing and using information in digital form. Information are floating in all directions and moving in the air around us. We have to catch the right information and make it available to right person at the right time, which is the aim of any modern library. Developments in ICT have brought revolutionary changes in the modes and methods of information storage, retrieval and transmission. Libraries play a vital role for the promotion of education and research, with the initiation of Internet and the advancement of ICT it became possible to have the access to various information sources and databases available in various parts of the globe. The Internet has emerged as important sources for different types of information users.

The web technology has already changed the way of information is stored, retrieved, corresponded and broadcast, it is likely to modernize the way publishers, publishing industry and scientists functioned in the era predominately guided by the printing technology. It has given great opportunity for Library and Information Science professionals and providing new forms of library and information services. Today's world is digital, which is concerned with making, sharing and accessing information in digital form. The main aim of modern library is to deliver the correct information at right time to the right person. Information has spread in all the corner of the world. Web has



about the importance of web technology on library and information services. The emerging web technologies such as Podcasting, Instant Messaging, Blogs, Social Networking Sites, RSS, Wikis, , Tagging, Mobile Libraries, Mobile OPACs, QR, Cloud Computing, Semantic has been discussed in this paper. Web technology provides significant advantages by integrating different library and information services with a common user interface provided by web browsers. The challenges includes lack of skilled professionals, inadequate computers access, insufficient time, lack of library orientation, and lack of systems. The paper recommended that Libraries should be allowed to recruit library and information professionals with computer science background, proper budget provisions should be made available, proper budget provisions for training of staff should be done for smooth functions of Library and documentation centers, Library orientation programs should be carried out for users.

KEY WORD: *Web, Library and Information Services, Technology, Application, Internet*

become more popular for dissemination of information and it have different features like websites, portal, social networking sites, RSS, blogs, wikis etc. Some of the valuable resources are freely accessible on web and has become an important tool for the dissemination of information.

Some of the Impacts of the web Technology for library and information services are; Increased computer power leading to speedier and cheaper computer processing, Cheaper data storage for example, optical storage media, Digitalization of information text, graphics, photographs speed, sound video, Better data transfer between different systems and media, Improved telecommunication, such as ISDN with greatly increased capacity for data Transmission, Decreased size of equipment and Increasing reliability of hardware and software.

Web-Technologies and its relevance of Ranganathan's Law

- Web Resources are for use
- Every users his or her web resource
- Every web resource its user
- Save the time of the user
- The web is a growing organism.

Application of web-technologies in the Library and Information Services

E-Mail Service: Electronic mail is the more popular term, E-mail, refers to the transmission of a message electronically through electronic signals. In other words, E-mail is a no



simultaneous interpersonal electronic communication. Electronic mail is one of these technologies which has become a very popular media in most of the developed nations for public and private message handling. Libraries and information centers have come to realize the effectiveness of this media and have started using it for their routines (Chavan S. P. & Aute G. P. 2011). Electronic mail is a simple way for computer users to exchange messages among different distant computers linked with different networks service providers. It applies the laws developed by Dir. S. R. Ranganathan in their book “Five fundamental laws of Library Science “as it is cost effective, saves time, effort, money, paper and resources. E-mail provides facilities to send text messages, programs, graphics and attachments etc. in the form of audio/video to pre-defined list of users

Social Network: Social networking is the most traditional form of social media. This site provides a means to interact over the internet, e-mail and even mobile phones. Examples of social networking sites are; Facebook: 2.6 billion monthly active users, Twitter: 166 million daily active users, LinkedIn: 160 million users in the U.S. alone. Platforms like Facebook, Twitter, and LinkedIn are often called “networking” platforms because they allow user accounts to interact with each other in a variety of different ways. Social networking website provides great opportunities for Librarians to interact with their users as it places them in the digital social space of their users. The websites can be used effectively for outreach and promotion. Librarians can get first-hand information about the user through interacting with them.

Instant Messaging (IM): Instant Messaging (IM) can provide a very cost-effective way to offer an online reference service with an improved level of communications flexibility that can attract a new group of information seekers, especially those using mobile communications devices (Shirley Forster 2006). IM is a form of real-time communication between two or more people based on typed text, images etc. IM has become increasingly popular due to its quick response time, its ease of use, and possibility of multitasking. It is estimated that there are several millions of IM users, using for various purposes viz: simple requests and responses, scheduling face to face meetings, or just to check the availability of colleagues and friends.

RSS (Really Simple Syndication): RSS is a structured XML-based metadata schema used to distribute news items, primarily through a web medium. RSS is an XML application that allows users to gather content as it is created and as sites are updated. When such a web feed is created, interested users can subscribe to it (Holvoet, 2006). Syndicated web pages are viewed with feed readers. RSS distributes a list of headlines, update notices, and sometimes full-text content. The Application of RSS in Library and information services include; Announcement of the availability of new books and other resources in a given subject area, Librarians can subscribe to RSS from the sources for compiling their customized alerts, Promote events organized in the library for Library Users, Enhance Library Instruction for different Web 2.0, Library 2.0, Blogs, Wikis, RSS, Tagging,



Podcasting, IM programs/courses by integrating appropriate resources and Announce availability of new research and learning opportunities in various research.

Blog: Blogs serve as an efficient tool for "marketing" library events and resources. Librarians use blogs to disseminate professional and general information, while libraries often use blogs for announcements. Libraries utilize blogs in a novel way that allows them to disseminate information to their patrons. It is also used to provide information about new acquisition and encouraging the use of library services (Walia & Gupta, 2012). Both blogging and community building platforms could be helpful to those who want to encourage discussion around very niche industries or topics. For example, on these platforms, you might see discussion about anything from alternative health to machine learning. This site allow users to post about interesting niche topics, like memes, events, politics, and pop-culture. When users publish a post, these platforms allow other users to share them or add to the conversation with their own commentary. Examples of Major Platforms is Tumblr and Reddit.

Wiki: Wikipedia (2007) defines a wiki as: a type of Web site that allows the visitors to add, remove, edit, and change some content, typically without the need for registration. It also allows for linking among any number of pages. A wiki is a hypertext publication collaboratively edited and managed by its own audience directly using a web browser. Wiki have emerged as a powerful social media platform for facilitating and improving communication and collaboration between library staff and users. It is a platform that allows users to add, remove, edit and change some of content of information without the need for registration. Wikis offer the opportunity to share knowledge and information, but they are not usually considered "authoritative" or "scholarly." Because people can invent facts or pass off ideas as facts on a wiki, they contain a lot of suspect information. Although some larger wikis (like Wikipedia) make the effort to verify information or cite sources, these sites are still not considered reliable or trustworthy. This is like an open web page and who have access permission can publish or edit the information on these web pages by using their browsers. Professional communities are using wikis as reference guides that reflect the collective knowledge of the community. Wikis can be used for Information and knowledge share, proving reference services, collaborative space among libraries and users, etc.

Podcast: A podcast is a series of audio or video digital-media files which is distributed over the Internet by syndicated download, through Web feeds, to portable media players and personal computers (De Sarkar, T. 2012). Though the same content may also be made available by direct download or streaming, a podcast is distinguished from other digital-media formats by its ability to be syndicated, subscribed to, and downloaded automatically when new content is added. Podcast highlights about new resource, it can be a publishing tool for users and librarians' oral presentations and Libraries can subscribe



podcasts from lead publishers of scholarly communication for interactive learning experience to the users

Tag: A tag is a keyword that is added to a digital object (e.g. a website, picture or video clip) to describe it, but not as part of a formal classification system. The concept of tagging has been widened far beyond website bookmarking, and services like Flickr (Photos), YouTube (video) and Audio (podcasts) allow a variety of digital artifacts to be socially tagged. Tagging makes information searching easier on the Internet. In which users can create and change the metadata, especially subject headings to the contents. This acts like an open catalogue to the information. In this users can give subject headings to their interested documents/ contents and also write reviews of the contents. In web OPAC system users can tag their interested documents and also write comments and reviews on interested documents.

Mobile Library Websites: With the increased use of Internet through mobile, libraries are required to redesign their web pages as mobile optimized interactive and participative library web pages to provide dynamic information services to users on a 24X7 basis via mobile devices. Libraries should be aware of mobile web browsers, screen resolutions and size, etc., while creating web pages. The website must be redesigned to have less graphics, so that the page loads much faster and with minimal keyboard operations, to ease the mobile user. In this context, text-only websites are easier and faster to navigate and fabricate into new applications.

Ask-A-Librarian: Ask-A-Librarian services are internet based question and answer service that connects users with individuals who possess specialized knowledge and skill in conducting precision searches. Most of these services have web based question submission form or e-mail addresses or both. Users are invited to submit their queries by using web forms or through email. Once a query is ready by service, it is assigned to an individual expert for answering. An expert responds to the query with actual information or a list of information services. The response is either sent to the user's e-mail account or is posted on the web so that users can access it after a certain period of time

Quick Response Codes (QR): The Quick Response (QR) Code, commonly referred to as QR Code, was invented in Japan by the Toyota subsidiary Denso Wave in 1994. A QR code is a matrix barcode readable by smartphones and mobile phones with cameras. Libraries need to market their services. A Quick Response codes is the best tool for that. A QR code is an alternate terminology for a "Quick Response" or "2D" barcode that can be read by downloadable smart phone readers with camerascanning capabilities. QR is good tool where library can market their services such as; search, ask us, hours and locations, computer availability, video tutorials, and social media using this code. User will take a picture of the code and then he/she can access any library service they want. QR code uses in libraries in catalog records to offer patrons basic information about an item, including the location and call number.



Cloud Computing: Cloud computing is the practice of using remote servers on the internet to manage, store and process data instead of using a personal computer. Cloud computing can allow a user to access applications and data from any computer at any time since they are stored on a remote server. Cloud computing is the best for the libraries who cannot afford technology and staff. Cloud computing is using for hosting library websites, backing up media collections, or storing and accessing bibliographic data. 5.14. Semantic Web Semantic web will provide us with the option to share, unite, search and organize the web information in easy manner. Sharing and organizing information available in every corner of the web, which is the main aim of this generation and expected to be achieved with the help of semantic web technologies. Semantic web is using in libraries as a build tools for discovering and navigating digital resources on the web, data architecture scalable to the entire Web and as interoperable across systems, institutions, and domains.

Social Bookmarks: Social bookmarking is a method for Internet users to share, organize, search, and manage bookmarks of web resources. Unlike file sharing, the resources themselves aren't shared, merely bookmarks that reference them. The Application of Social Bookmarks in Library and information services include; Simplifying bibliographic distribution lists, users can describe them by providing specialized knowledge, Elaborating link services recommended from specific fields of knowledge, Sharing resources with other users who are using them for research and Promoting participation and interactive with users.

Semantic web: Semantic web will provide us with the option to share, unite, search and organize the web information in easy manner. Sharing and organizing information available in every corner of the web, which is the main aim of this generation and expected to be achieved with the help of semantic web technologies. Semantic web is using in libraries as a build tools for discovering and navigating digital resources on the web, data architecture scalable to the entire Web and as interoperable across systems, institutions, and domains.

Geo-Tagging: Geo-tagging is the process of adding geographical identification metadata to various media such as a geo-tagged photograph or video, websites, SMS messages, QR Codes or RSS feeds and is a form of geospatial metadata. The data usually consists of coordinates like latitude and longitude, but may even include bearing, altitude, distance and place names. Geo-tagging helps users to find specific information located at specific location. According to (Urban, 2010) Tito Sierra and Markus Wust, both from North Carolina State University Libraries were able to create virtual campus tour using geo-tagging (tagging specific locations on a map) and geo-location (pin-pointing your exact location) technologies.

Mash-ups: Mash-ups is a hybrid application of the web which integrates information from different sources at one platform. In simple words it is an application that combines data



or functionality from two or more external sources to create a new service. Mash-up are web-based services “that pull together data from different sources to create a new service (Anderson, 2007). Google Maps, Google Calendar, worldCat interfaces, Google Scholar, Google Books and title images in OPACs from Google Books and Syndetic Solutions are among Mash-ups that are applied in libraries (Mahmood and Richarson, 2011).

Mobile base Services: Mobile base Services Today’s students and faculties are using the Smart phones always. According to (Wilson & McCarthy, 2010) the mobile revolution is upon us. Library must move toward mobile development with internet users. Libraries must prepare a strategic plan to use the mobile library to market their service. The wireless technology and mobile phones are becoming an essential part of everyday life and are changing the way one connects and interacts with the world. This passion for mobiles by users has thrown plenty of opportunities for libraries to create mobile-friendly library and information services, which may lessen the risk of exclusion. The libraries need to switch over from ‘physical places’ to ‘virtual places’ to embrace and serve ‘netgens’ and ‘digital natives’ who prefer their libraries to be where they are and prefer to access and share information from anywhere at any time.

Mobile OPACs: Mobile OPACs Having a mobile OPAC is great step for the library. “Mobile OPACS, or MOPACS, provide library users with varying degrees of access to the information contained in traditional OPACS, and tend to be available as either Trans coded web sites formatted for handheld devices or as standalone, downloadable applications. OCLC’s World Cat Mobile application pilot allows users to search for and find books and other materials available in their local libraries through a web application they can access from a PDA or a smart phone.

Issues and Challenges of Web Technology in Library and Information Services

The major challenges that are creating problems with the use of web technology in the libraries and information centers include lack of skilled professionals, inadequate computers access, insufficient time, lack of library orientation, lack of systems, lack of financial support, lack of authority support, lack of cooperation among the library staff, lack of expertise of ICTs and lack of getting feedback from library users.

Conclusion

Rapid growth of the Internet and associated technologies, in particular the Web, has opened up an entirely new medium for providing improved library and information services for the users. Web based library and information services will become more popular and sophisticated as the World Wide Web (WWW) becomes common place all over the world and to be successful players in the digital world. Library and Information Centers must continue to concentrate on the web design and implementation issues. As



we actively transfer library and information services, our main purpose remain the same, to serve and teach users to find, evaluate and use information effectively.

Recommendations

Libraries should be allowed to recruit library and information professionals with computer science background, proper budget provisions should be made available, proper budget provisions for training of staff should be done for smooth functions of Library and documentation centers, Library orientation programs should be carried out for users.

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