Impact of Internet and World Wide Web Environment on Libraries

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Abstract: The paper focuses on the impact of lnternet on various library processes, services and products. It also emphasises the challenging role of librarians and information professionals in the present lnternet era. The paper attempts to understand and evaluate the use of the Internet as an information source by libraries of India and aims to determine the utilization of Internet in library activities and services, search methods employed, problems encountered and associated factors. The paper is also discussed the impact of information technology and role of libraries in the age of knowledge and information societies.

Keywords: Role of Librarian; Internet; World Wide Web; Intelligent Agents; Search Intermediary; Facilitator; End-User Trainer

Introduction

Information technology has transformed the whole world into a global village with a global economy, which is increasingly dependent on the management and distribution of information. Over the last decades the world has been experiencing significant development in which the need to acquire, utilize and share knowledge has become increasingly essential. The Internet and its successor technologies will have the important features of a massive library system, where people can roam through the electronic equivalent of book stacks, with assistance from the electronic equivalent of reference librarians. In short, one major reason why characteristics of the Internet are so compatible with those of universities is that some of the Internet's most significant capabilities resemble, and dovetail with, the capabilities of university research libraries. Just as the research library is an extremely powerful instrument for learning, so too is the Internet ... " Internet is considered as a great information source to the academic and research community and also a great information tool to the library and information centres to supplement their

information support to the user community. The collaboration with computer and information technology scientists in the design and maintenance of information access systems for the effective use of Internet and Web in the interest of information seekers has become imperative. An attempt has been made to understand and evaluate the impact of Internet and World Wide Web Environment on Libraries.

Unlimited Scope of Internet

The Internet is changing the notion of library from a walled place into a virtual library, i.e., a library without walls. Even public libraries like Atlanta-Fulton Public Library of USA are offering Internet access to the users including electronic reference service and remote log-in by dial-up. Although the Internet boasts of reaching 160 countries, there is not much to be happy about its impact on developing countries. The balance is heavily tilted towards developed countries; very few nodes with inadequate infrastructure and unreliable telecommunication links are available in the developing countries. It is a well established that the telephone infrastructure is synonymous with economic strength; poor infrastructure undoubtedly results in obstructing the economic growth. In a study undertaken in 1994, it was found that the computer nodes were strongly associated with per capita income. Of the 9,10,149

Internet connections in 1992, about 97 per cent were located in developed countries; about 65 per cent in USA alone followed by other wealthy countries of OECD. (Moorthy and Karisiddappa, 1996) For her entire population of about 86 million, India had a mere 6 nodes. Currently, the Internet connections in India amply make it clear that it is available in Government and financially strong research institutions only. It will take a few more years before Internet and global network access technologies become easily available to all libraries in the country. The decentralized nature of the Internet, the WWW, and the lack of direct control of any participating host/network makes it impossible to provide the users with the same end-to-end network support that the users may get when subscribing to a network like NICNET or ERNET etc. However, the rate of progress depends upon several factors such as user acceptance, economics, commitment to established products and services and also the pace of technological advances.

Librarians and Intelligent Agents

An intelligent software agent as a mediator in information retrieval (IR). Software agents are autonomous programs which perform a specific personalized task in a heterogeneous and distributed environment. These autonomous, intelligent agents make decisions on behalf of the user, by narrowing the search domain and

decreasing the human computer interaction, phenomenally. With the increasing number of institutes and universities across the country and globe it has become very important to share library services rather than duplicating the library facilities everywhere and incurring huge expenditure. In the present paper, the architecture for a digital library DIGLIB is proposed, which helps a user or a group of users identify and find reading material in a virtual or brick and mortar library of his or her interest. DIGLIB uses a software agent which is a unique combination of filtering and information agent to facilitate intelligent search. The information agent performs a general search on various sites rigorously based on a keyword and phrases. The short listed sites are further subjected to a specific search by the filtering agent. The information agent performs a breadth first search on the links ahead and also provides navigation recommendation. A rule-base is maintained by the filtering agent using premises like broad area of interest, specific area of interest, type of article, book, magazine, journals, periodicals etc. to be searched for further narrowing the search domain and suggesting URNs of digital libraries of user's interest. An attempt has been made to design a digital library interface using an intelligent agent which continually runs in the background and facilitates the task of finding a suitable

match between the desired library service and user's requirement. (Prakash, 2004)

Qualities of Software to Become Intelligent Agent

It is reasonable to say that the intelligence level of agents can be correlated to the degree to which they implement the following properties or qualities. Software agents differ from conventional software in that they are long-lived, semi autonomous, proactive, and adaptive. They define an agent as hardware or software based computer system that enjoys the properties: (Tewari et al, 2013)

− Autonomy: agents operate without the direct intervention of humans or others, and have some kind of control over their actions and internal state.

− Social ability: agents interact with other agents via some kind of agent-communication language.

− Reactivity: agents perceive their environment which may be the physical world, a user via a graphical user interface, a collection of other agents, the Internet, or perhaps all of these combined and respond in a timely fashion to changes that occur in it.

− Proactiveness: agents do not simply act in response to their environment; they are able to exhibit goal-directed behaviour by taking the initiative.

Strengths, Weaknesses, Threats and Opportunities for Librarians in the Web

1. Strengths: India has a particularly strong IT industry that can be an important commercial factor for the western countries to consider in their future cloud related development. Accordingly, an Indian library does not have the economic strength to impact on the western countries. The main strength and hence advantage of India, however, consists in its consolidated and synergetic efforts to address new technological innovations, trends and governmental issues. As India has strong IT industry now, up-coming Indian companies are offering cloud services for Indian libraries at affordable prices. Moreover in India many institutes are not in condition to purchase high end server and costly software for their library, in this situation the cloud computing will provide grate platform to host their data on cloud to serve their users.

2. Weakness: However, India is not as fast as US and Europe in the development and considering the timelines of research to reach market-readiness as opposed to the fast movements in the market itself. The time is a critical resource with respect to positioning India in the global cloud development market. Implementation of cloud in the libraries is not easy task as there are many administrative and financial matters involved. Adopting cloud services means we have to be depending on the service provider. Many Indian libraries does not have even internet connection to connect with the cloud, in this case, it is very difficult to implement cloud based services.

3. Opportunities: India is an emerging market for IT industry and, Indian government is also providing help to Indian university libraries to get high speed internet connection for research purpose, in view of these libraries/institutions/ universities can consider cloud based library services to serve their users. Using cloud computing libraries can offer modern information services in user friendly format. With the use of these advanced technology library staff can also get an opportunity to learn new technological changes occurred in the field. As the cloud is a third party service if, any problem occurs, then the experts will provide the quick solution without interrupting library services.

4. Threats: These opportunities are obviously counterweighted by some threats that particularly relate to the effort involved in the implementation. The threats namely connectivity problem, hidden cost for add-on services

by service provider, compatibility, lock in period etc. The most important is migration of data from one service provider to other is a very difficult task. (Pandya, 2012)

Role of Librarian in Internet and World Wide Web Environment

Digital collections, common communication protocols, wireless networks, gigabit-per-second data transmission, handheld computers, the astounding growth of the world wide web, and other technological advances, especially those related to the internet, seem to offer libraries boundless opportunities to reach a level of service that was once considered an unattainable ideal. The ethos of the internet, unrestricted universal access to information, seems closely akin to the Library Bill of Rights and the democratic principles of public education commonly attributed to the development of public libraries in the United States. The future of libraries as guided by the internet and its associated technologies may appear to represent a path toward perfection, a future that holds the promise of barrier free information access. Although library administrator may draw on such rhetoric to inspire staff (or themselves), persuade founders to support technology, and shape an ideal to aspire toward, nonetheless they are aware that in practice the internet presents libraries with as many challenges to fulfilling their missions as it offers them opportunities to excel.

Conclusion

The role of librarians is continuing to evolve with the adoption of Internet and World Wide Web into the profession of librarianship. The internet has thus integrated nearly all aspects of the library activities, the librarians can now use the Internet for exploiting the catalogue of the other institutions, ordering books and journals online, participate in ILL, use e-mail, and discuss through list serves, support reference service through remote databases and most important of all establish library/home pages to project their collection and services on the site. Libraries of the 21st century can help fight poverty and narrow the gap between rich and poor. For the first time in history poor are getting opportunity to enhance their wealth through the creation and use of knowledge. And libraries are taking a central role in this notable movement.

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