

## Future of Web Based Library And Information Services: An Indian Scenario

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### Abstract

**Purpose :** To highlight the potential of web services for libraries.

**Approach :** A brief description of web services is followed by future of web services and present scenario in India.

**Findings :** Web services offer many advantages to the library community, but the majority of these advantages need standardization of web services and active involvement/participation of library staff.

**Conclusion :** This paper is a clarion call to the library community to be actively involved, perpetrate orientation programmes to users and prevent the loss of proprietary web services by supporting the development and use of standard web services.

**Keywords:** World Wide Web; Web Services; Library Services; Web Logs; RSS; Library Webpage; Standards.

### 1. Introduction

Web services are the latest candidate in technology for enabling distributed computing. Web service provides a way to describe their interfaces with enough detail as to allow a user to build a client application to access their functionality. A web service is a software system designed to support computer to computer interaction over the internet. Web services are not new and usually take the form of an Application Programming Interface (API). Web Services, with broad industry support and emerging stability in standards, are likely to succeed. In today's world of extreme competition on the business front, information exchange and efficient communication is the need today. The web is increasingly an important resource in many aspects of life such as education, employment, government, commerce, healthcare and more. As this is the age of internet it provides many more facilities to its users. Most of the web based library service provider is getting a lot of feedback from their effective users.

According to OASIS (2000), Web services are registered in a way that potential users can find them easily. This is done with universal Discovery Description and Integration.

### 2. Library Services

Library services refer to facilities that are provided by a library for the use of books and dissemination of information and meet the user's requirement. The well known existing library services are cataloguing, classification, circulation services, reservation renewal, new arrivals, current contents, current awareness services, selective dissemination of information, indexing and abstracting,

reference service, document delivery, interlibrary loan, externally purchased databases, access to other library catalogues, access to online databases, internally published news letter, reports and journals, bibliographic services and so on. With the increasing use of Internet all these services has now changed its mode to web environment.

### **3. Web**

The growth of World Wide Web also known as www, or simply the web has been one of the most remarkable development in the history of documentation. Web is popularly used as the synonymous term of World Wide Web or Internet or online. The web is client or server system used to access all kinds of information to anyone on the net. The information can be in the form of regular text, hypertext, pictures, sounds, use net news groups and other types of data. To access information from web, use client program called browser is necessary. In the web, information are stored in pages and each page can hold not only information but links to other pages. In each page a particular word or sequences of words are highlighted and there is a link between the highlighted item and other information, this is called hypertext.

#### **3.1 Web Services**

Web services go beyond the functionality of simple web pages and provide dynamic application functionality that can be remotely invoked. [1]. For example, OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) is an increasingly popular web service standard that enables repositories to make their resource metadata available to any organisation that wishes to harvest it. The goal of web services is to be "interoperable building blocks for constructing applications" [2] Standard building blocks could be identified as of relevance to libraries: core; function-specific; and industry-specific.

The term "web service" is misused on many occasion. Some products advertised as web services do not provide application-to-application functionality, but are simply web-based search engines. Similarly, products with the confusing title "World Wide Web Service" generally refer to simple web enablement rather than web service enablement. The applications involved in web services are often referred to as web service consumers and providers.

#### **3.2 Web Based Library Services**

The librarian has been moving away from the 'gatekeeper to knowledge' for a very long time now. One of the reasons that CD-ROM based databases proved so popular is because they allowed users to access materials for themselves, run their own searches and keep up to date from their own desks, without needing to constantly come down to the library, or ask the librarian to intervene in

the data collection process on their behalf. Of course [3], this did not mean that the librarian became less important in fact, on the contrary, the role has become even more important, because it is the librarian who is responsible for teaching end users how to work effectively in the gathering of data, to choose the most appropriate resources, and to deploy them within the organization.

The Internet has encouraged that decentralization, while at the same time providing information professional with the ability to follow through with that movement, and reach out to users in ways that have not been possible before. Web based library services puts the technical control and development of resources right in the hands of the librarian in an unprecedented way. On the other hand, providing information and selective dissemination of information services are something that librarians have been doing for centuries.

Email is also widely used by publishers and researchers. TOCs and RSS feeds are being circulated by using email service. Email is a web based excellent medial and most probably the most popular media. Library can use this web medium for various purposes specially for delivering some web based services.

Frequently Asked Questions (FAQ) is an online document that poses a series of common questions and answers on a specific topic. This web feature is widely used by libraries and popular among user community. Central Library, IIT Kharagpur has given the FAQ link <<http://www.library.iitkgp.ernet.in/FAQ.html>> to help users to know more about library services, rules and regulations.

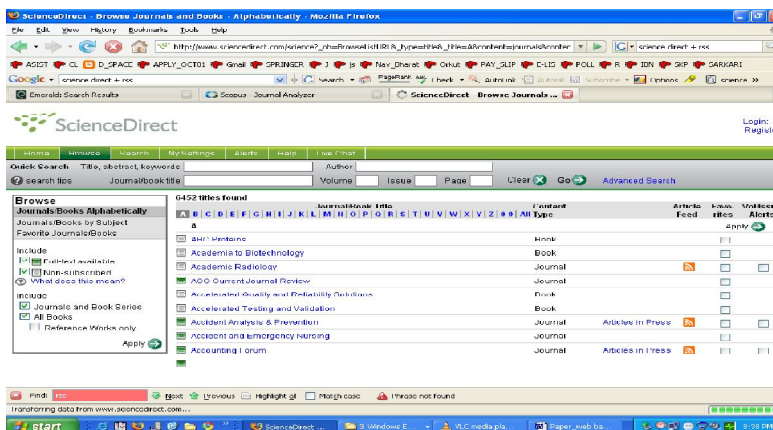
Web-OPAC (Online Public Access Catalog) [4] is a web based search platform. Regardless of physical location, Web OPAC brings information at the fingertips of members, whether the member is in the library or at a remote location. It brings the library online. Library users have to interact with the library. Their queries are not just about the bibliographic information available with

the library but they also require many services like reservation of books & periodicals, status about the books they have taken etc. Some of the major services available through Web-OPAC are Library Catalogue; Search facility on entire database; Group wise restricted access for users and guest.

### **3.2.1 Using RSS In Library Setting**

RSS is such a powerful and all-pervasive technology with so many possibilities. RSS (Really Simple Syndication) is an XML based format used to send new items or information [5]. For the keen and enthusiastic Information Professional the value of RSS goes far beyond that of a mere consumer. It is possible for the professional to become a publisher more easily than before. Librarians have been publishers on the net for many years now, ever since the first library web page appeared but

publishing in this way is very often a slow and laborious process, often requiring a technical member of staff to code web pages. RSS is relatively easy to use.



Screen shot: 1

RSS feeds are now being used increasingly and frequently and library system vendors are starting to add RSS feed functionality into catalogues and other library systems to allow feeds of new books or new resources to be set up. The Massachusetts Institute of Technology (MIT) Library [6] (<http://libraries.mit.edu/help/rss/barton/>) use RSS feeds to highlight new books as these are added to the library catalogue.

### 3.2.2 Web Logs As An Information Provider

Web logs are just a simple, very useful way to keep up to date with what is happening in a subject area, or with a particular individual or organization and the associated resources. Web logs are often described as online diaries. Many web logs are designed simply to act as a way of recording what an individual is doing or thinking at a particular period of time. The best way is to view the blogs where experts in particular subject area are able to share their knowledge, understanding and opinions with other people, often based on current event or specific or general interest. For example:

- [www.liszen.com](http://www.liszen.com), which connects user to over 500 libraries and library related web logs. By simply running a search for a subject that interests you and to take a look at some of the post that people have made on particular subject area. In library a web log that lists new additions to the library that includes new books, new subscriptions (both form - print & electronic). It can be used very effectively to interact with users. Users can post their own view and comments. Through web logs library events and programs can be promoted. Web blogs are a great way of reaching out to users and setting their involvement in a far simpler and easier way than any other methods.

### **3.2.3 Book Marking Services In Library Content**

Book marking service is a good example of web-based service. Book marking system refers to the way in which, users save links to web pages that they want to remember and/or share. Social book marking service can provide a useful resource for its clients depending on the users of the information center and their information needs any pages that provided useful information tagged and made available on an appropriate web page. Book marked collection of good quality data will save a considerable time of both the information professional and its users. It also provides another mechanism for staff to keep each other informed about new sources as they are discovered. A number of libraries are already using book marking system. For example: Lansing public library (<http://del.icio.us/lansing public library>). In a very short space of time book marking has moved from a solitary activity based on the use of computer to a global resource where individuals can share their interests, favorite resources and useful links with everyone.

### **3.2.4 Library Web Page**

Library webpage [7] is very much essential for any library. It is a useful tool to keep informed about library activities and new services. It saves the time of the user, which is more important. The online, web based journals opens rich and variegated new vistas. Clearly, library webpage allow easy bridging of distances. The internet leaps over continents. All libraries whose aim is to support research in concerned subject must maintain library webpage. Libraries may put services provided by them on web to serve user community such as Library collection; Library timing/working days; Library rules; Library services (CAS/SDI/Reference services); New books; Recent issues of journals; List of subscribed online journals; Software list; Latest issues of journals; Popular Documents - based on circulation and reservations; Place reservation / hold on certain documents; Outstanding List - renewal facility optional; Procurement request for purchasing new books and other media; Approve document for procurement; User feedback.

### **3.2.5 Web Based Chat Systems to Interact With Library Users**

Now a day many libraries use chatting system to interact with its users. Web based chat requires different software and more sophisticated set up. In web based chat system enquirers go to a specific page on the library site and connect with the librarian to seek an answer to their information requirements. For example: California's Ask Now service at [www.asknow.org](http://www.asknow.org) [8]. The software allows the librarian to push pages to an enquirer co-browse where both are able to view the same page and save the chat session if necessary. An advantage of this type of service is that libraries have been able to join together to provide a unified enquiry service, which can span a large geographic area.

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#### **4. Access To Database**

All major publishers have made available their databases (full text / bibliographic) on web. Almost all the full text databases and bibliographic databases services are available on web. Full text databases like IEL Full Text; Elsevier Science Direct; Springer Verlag; Proquest's ABI/INFORM; ASTP; ACM Digital Library; ASME; ASCE; ASTM Standards; ASTM Journal; BIS Standards; EBSCO Databases; Emerald Full Text; Nature Journal; Capitaline; and AIP/APS Journals and bibliographic database like COMPENDEX; INSPEC on EI Village; SciFinder Scholar; ISI Web of Science; MathScienceNet and JCCC are online accessible and playing an important role in ongoing research and development. For example: ProQuest is a web based information service providing access to a number of databases covering various subject disciplines including business and management, education, science, computing, medicine, telecommunication.

#### **5. Involvement of Library Staff**

Involvement of Library professional is very essential in providing web based library and information services to user community. Skilled manpower will be a bonus otherwise also semi-skilled professional may be given depth orientation about importance of web, subscribed e-resources, open source available, information technologies, and information seeking behaviour of users. It would be ideal situation if all members of staff were keen and enthusiastic, looking forward to coming into work each day and ready to explore an exciting world of new resources and challenges. It is expected from library professionals to start using new resources as soon as it is being subscribed by library or made available online.

#### **6. Future**

Even standards web services are only useful if potential users know that they exist, how they can be access and what they offer. This information is available to a varying degree and in a variety of formats, depending on the service in question. Amazon and Google are sufficiently dominant in the marketplace that users will take the time to download and study documentation from their respective sites. But, for most service providers, a more consistent method is necessary.

If web services are to achieve their potential in libraries, library-relevant services must be registered via an appropriate registry. The creation of a registry specifically for standard library relevant web services, however, could be invaluable in promoting such standards and facilitating their use by libraries. The use of standard web service enabled software would facilitate the move away from the monolithic integrated library system. Standard web service interfaces between system components would enable the mixing and matching of both proprietary and open source components. This would make open source software a more viable option for libraries. Third parties could develop new features and tools that used the web services exposed by the supplier components. There are still major gaps in the repertoire of library relevant web service standards. For some applications, appropriate standards will be under development elsewhere in the information industry. Where this

is not the case, new standards should be developed by appropriate library-related consortia in conjunction with the standards bodies.

The participating libraries should have the infrastructure for providing the service to their users. The librarian should take one more step further instead of just providing access to the internet. He or she should take the responsibility of evaluating the web resource for providing the effective web services. The librarian should have depth knowledge about the web resources and the search engine, which will give the real power to the reference librarian to answer the queries. The librarian should create a web directory of the inter resources so that it can be used or referred to by a user whenever it is needed for providing the services. The users of the library should be given a proper training and explanation about Internet and the search option.

Vendors initiative for enabling web services is a positive example of such a consortium. The primary goal of web service provider should be to make library services seamlessly available to the larger world of information handling and processing, whether through tools like Google, through use of e-learning services, or via information portals in general. The top three areas recommended were: authorization; routine transactions with financial and e-learning systems; and enabling gateway searching of library databases.

As the number of proprietary web service solutions increase, it is vital that the library community, as a whole, provides coordinated and active support come as much from libraries as from vendors: the former have the most to gain and the most to lose.

## **7. Indian Scenario**

In India, all the Universities have good libraries and most of them are providing web based services. Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) services are being provided to users' community by using web technology at maximum but still few of them are lacking behind due to lack of basic infrastructure and lack of skilled man power. The IITs, IISc, IISERs, NITs, IIMs are the best of them which are providing web based services in true sense. Email is widely used for providing web based services such as new arrivals of books, recent arrivals of print journals, updation to Library web page, new e-resources, Inter-Library Loan etc. Web-OPAC is quite popular among user communities in academic institutions. The launching of INFLIBNET Centre, Ahmedabad by the UGC in the late eighties has opened up new vistas in the organization of academic and research libraries in India. Presently INFLIBNET is involved in creating infrastructure for sharing of library and information resources and services among Academic and Research Institutions. INFLIBNET works collaboratively with Indian university libraries to shape the future of the academic libraries in the evolving information environment. Major services provided by INFLIBNET are Document Delivery through JCCC; Bibliographic Union Database; Library Soul Support; Walk-in Users; and Print Archives.

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There are few e-journals service providers in India. JCCC is one of them. J-Gate Custom Content for Consortia, is a customized solution for accessing and sharing journal literature subscribed by all the IITs, IISc and IIMs, individually and collectively through INDEST Consortium [9]. Joining this community of resource sharing consortium are 17 National Institutes of Technology to whom the benefits of JCCC@INDEST is extended as secondary members. JCCC@INDEST is a common gateway to access 6326 e-Journals from 1309 publishers, subscribed by IITs, IISc. IIMs (17 Libraries). Publishers included in JCCC@INDEST are ACM Digital Libraries; American Society of Civil Engineers (ASCE); American Society of Mechanical Engineers (ASME); IEEE Electronic Library; Nature; Elsevier and Springer.

## **8. Conclusion**

Services are the heart of any kind of library or information Centre. The library or information centre is in the practice ensuring that its users are served as quickly and effectively as possible, using the web based services the most appropriate tools. There are lots of resources now available that can assist in the process and good information professional will be interested to explore them to provide additional benefit to users community. As librarians offering a service it is tempting to always try to ensure that it is in a finished form that can be deployed and used. The extent to which this is acceptable will differ from professional to professional, organization to organization, and user to user; there is no right or wrong answer for every case.

Librarians want to provide information and answers to clients. They have a curiosity about everything and a keenness to interact with people, and a desire to make the lives of others that much easier. Their role within an organization cannot be overlooked – it is tremendously important. By using web service, librarians are providing new and interesting resources to user community to continue to do what librarians have always done so well in the past – bringing order out of chaos and making information readily available.

Web services can empower libraries, offering more control and simpler system customization and integration. But these and other advantages are dependent on web services being standardized. If a large number of proprietary web services are adopted, the web service potential will never be fully achieved in libraries.

## **References**

1. Wusteman, Judith. OCLC Systems & Services: International Digital Library Perspectives. Vol 22(1), 2006. pp 5-9
2. Gardner, T (2001). An introduction to web services. Ariadne, No. 29, 2 October, available at: [www.ariadne.ac.uk/issue29/gardner/intro.html](http://www.ariadne.ac.uk/issue29/gardner/intro.html)
3. Bradley, Phil. How to use web 2.0 in your library. London: Facet publishing, 2007.



4. Pathak, S K (2003). Importance of Library webpage in Special Libraries: A case study of IUCAA Library. 48th ILA Conference Proceeding, January 22-25, 2003, NIMHANS, pp.482-486.
5. Elsevier's Science Direct < <http://www.sciencedirect.info/using/> > accessed on 12.09.2008.
6. □ Massachusetts Institute of Technology <<http://libraries.mit.edu/>> accessed on 02.09.2008.
7. Pathak, S K (2003). Importance of online resources in special libraries: An overview of IUCAA Library. NACLIN - 2003, October 14 - 17, 2003, Jadavpur University, Kolkata. pp. 116-126.
8. LISZEN-Library & Information Science Search Engine < <http://liszen.com/> > accessed on 10.09.2008.
9. Informatics: J-Gate Custom Content for Consortia <http://jccc-indest.informindia.co.in/> accessed on 01.09.2008

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