Designing digital architecture with intelligent building for information access at the Tuberculosis Research Centre, Chennai

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Abstract

This paper focuses on how the digital architecture is being effectively used in the Tuberculosis Research Centre's library for information access system making it more users friendly. More recently multi-media information retrieval systems have become vital with increased international attraction/attention. This will increase the end users and their platforms connected to the internet/intranet. Further this will explore the opportunities for research at the intersection of web and user's information. Moreover this will bring out how simply the computational infrastructural tools are being utilized in remote access to reach publicly available information.

Objective and Design

Modeling information access architecture and graphic design knowledge for users' attention

1. Introduction:

Digital or electronic technologies are significant replacing tools being used in the methods for changing the information resource dissemination platform. The electronic resources include online journals with full-text/PDF documents, cumulative databases, Web sites, Web Pages, Newsgroups, Web based or Email based discussion groups and electronic newsletters. Presently the majority of the articles retrieved from online resources. Bring proper access point for the users to the relevant information on the net will be a wealth for the society. Development of our economy and environment will depend on the scientists' and scholars' research work. Much of these works being published through journals' articles. Journals are the indispensable tool for expanding vision by providing about new research at a global level in all fields of knowledge. Computer interfaces are evolving into user friendly tools and enhancing the accessibility of information through full-text resources.

2. Literature filtering

Without a connection with literature and reading, a researcher will suffer. Literature could play an important role to tell the truth as how the rest of the research goes on in the world. Literature filtering is the process of identifying relevant documents in streams of information. Literature alone would bridge the gap between the research and scientists' world. An outcome of research output without current literature information is quite impossible. Finding text that satisfies the user's information needs is not merely simple but considerable progress has to be made with relevant techniques that are significantly more effective. *The information extraction techniques, primarily developed in the context of the Advanced Research Projects Agency (ARPA) Message Understanding Conferences (MUCs) are designed to identify database entities, attributes and relationships in full text*. Both efficiency and effectiveness are important

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* http://www.dlib.org/dlib/november95/11croft.html

for proper filtering the relevant document. With enormous increase in information on-line and the consequent need for better techniques to access this information would be fulfilled by the emergence of new application viz., digital library is both an opportunity as well as a challenge.

3. Digital architecture

Professionalism would always play a vital role in information scientists' work architecture. With the enormous increase in the number of text resources or literatures available online, and the consequent need for better techniques to access the information is keep increasing. Dealing electronic media and make creative website for professional establishment would always be prized by the users/scientists and leads better impact. The current state of information extraction tools requires a considerable investment to build new applications. Our library and information division' site newly the 'information access laboratory' encouraging our scientists by eliminating their access barriers and enhance their research through online e-resources with our information access lab. Since our office has an excellent intranet facility that induces us to establish the library services in e-media.
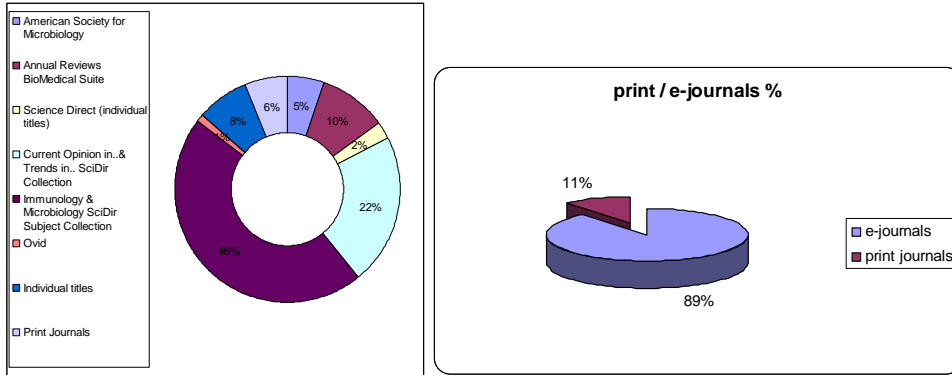
3.1 Multi-media application

Multimedia information access provides an artifacts technology to smooth scientists' daily lives with pleasure to improve their experiences at work. Multimedia retrieval refers to techniques being developed to access images, video and sound databases apart from text descriptions. The perceived value of multimedia information retrieval systems will become very high and more effective.

The aspect of indexing is considered very important i.e., capability of handling a wide variety of document formats. This includes myriad formats such as HTML, Acrobat, Power Point, images, word etc. The work handling with multi-media architecture designing would receive a lot of attention from the users. To develop a common platform with the

integration of multi-media capabilities and information retrieval system is an important aspect. True integration of multi-media and information system would definitely provide significant changes in the research platform. We developed our Information Access Lab front page with Flash software. Understanding those applications and the designing experience behind the screen would be part of the process of deciding which applications are of fundamental importance and which are most transient. Research in this area is focused on increasing the skills required for new applications. Such a multidisciplinary approach is a pivotal point for changing and challenging the information scientists' digital-rich environment work progress.

4. e-Resources at TRC

Traditionally the information retrieval would have focused on user's ability to locate books, journals, theses, etc in the library. There was a barrier in acquiring or retrieving or providing library services and resources between the users and the libraries. Slowly, the services being offered by the libraries have been increased and expanded in various electronic formats. The on-line web-based media is now occupying a comfortable place in information providing systems. The information revolution in the recent years, worked as a catalyst to create localized access point at TRC namely, the information access lab especially for local services delivery. This changes increasing the electronic use of networked access to full-text resources. Our subscription covers 89% with online resources viz., online journals, cumulative journals collection, subject collection, comprehensive source and databases. Our e-resources have been registered with static IP. Hence, our scientists can access our e-resources locally, more effectively, through network from any where at our campus 24 hours, year-round.

Legend:
- American Society for Microbiology
- Annual Reviews BioMedical Suite
- Science Direct (individual titles)
- Current Opinion in..& Trends in.. SciDir Collection
- Immunology & Microbiology SciDir Subject Collection
- Ovid
- Individual titles
- Print Journals

Donut chart values: 6%, 5%, 10%, 8%, 2%, 22%, 46%

print / e-journals %

- e-journals
- print journals

11%, 89%

5. Information Access Lab at TRC

Effective tailor made interfaces for information systems would give a high priority for users. The novel interfaces must support the sophisticated functions like in-house as well as global resources; browsing and retrieved information visualization. Then the research work will become more

interesting. With the advent of the World Wide Web and the increase in the use of the Internet, there has been a corresponding increase in demand for text and image retrieval systems in distributed local area network environment. This would be an 'added-value' to our e-library or Information Access Lab.

6. Description

Our information access lab (e-library) aims to be a comprehensive source of information on the applications and implications of new computational information technology, automation, OPAC, user interfaces, networks and the web interlinks to our subscribed e-journals and various specialized sites available in the world like, international tuberculosis links, search engines, National Union catalogue, online dictionaries, specialized databases, Open access resources, etc. It provides a time-consuming vehicle for direct entry into the related resource page within few mouse clicks. Its primary interest is to manage the use of resources at our library as well as retrieval of all forms of information outside our centre. It enables our scientist population to keep up to date with developments in their field without having to wade through lengthy search.

6.1 E-Journals

'E-journals' is a digital journals gallery comprising all our subscribed journals, arranged A-Z title index, having direct hyperlink facility to their electronic sites, co-operating with the World Wide Web. This will provide access to full-text articles or PDF (Portable Document Format). Scientist community of our centre can access from anywhere at our campus to any of the listed journals with single mouse click to reach the appropriate website without using any username or password, since all of them have been registered with our static IP. The back volume application provides the details about the in-house periodical volumes.

6.2 Consortia

Consortia are the groups of research institutions come under one roof focused on particular research area and applying computational technology to access the resources. Our information access lab provides direct interface to J-gate, ICMR Journal Custom Content Consortium (JCCC@ICMR) and content consortia for four major tuberculosis institutes in India (JCCC@HIN). J-Gate is a gateway to global e-journal literature and seamless access to millions of journal articles available online by linking to full-text publishers' site; has consortium subscription for all Indian Council of Medical Research' institutes and having an IP authenticated access for our centre. JCCC is J-Gate Custom Content for a group of homogeneous consortia members. JCCC-ICMR is an extension of JCC, for Indian Council of Medical Research institutes. It provides a common gateway to e-journals for all the ICMR institutes of the consortium. It has common access and search interface for all journals subscribed by these institutes. Content will be mirrored in the service provider's server of all these consortium institutes. E-mail can also be sent form one consortia member to the other.

ICMR has consortium subscription for 'Proquest Information and Learning' database. It is an e-resource in collecting, organizing and publishing worldwide for researchers. It provides maximum exposure for digital dissertations web based access to citations and abstracts and 24-pages previews of dissertations and theses. It is a library of thousands of full-text journals with coverage from 90s available on web with CD-ROM back up.

6.3 IndiaHealthStat

IndiaHealthStat has interlink provision with our Information Access Lab for a comprehensive source for India-centric health statistics (www.IndiaHealthStat.com). The information on India health statistics, India health care system, Indian health issues and Indian health ministry, Aids, disabled population, family welfare, health education, health

infrastructure nutrition and other vital statistics on health, are regularly updated on this site.

6.4 Instruction to Authors

Scientists are aware of the absolute necessity to know how to submit their contributions. One-step ahead we provide guidelines for 'Instructions to Author' (also known as Instructions for Authors) for all our subscribed journals at a single click, which tremendously saved our scientists' time. Usually this will be available in any one issue of a volume or a year; whereas, the information access lab provides the exact guidelines designed by the respective publishers for contributors for publishing their work in a recognized format, where they wanted to publish.

6.5 Publications

'Publications' provide the bibliographical details of our Centre's output include author, title, source and abstract. It is an index for all TRC Publications since 1956 year wise. It aims to distribute and archives research papers on tuberculosis and its related areas in electronic version. It increases awareness and understanding of tuberculosis research. The 'current subscription' application provides the details of this year subscription.

6.6 Catalogue

The 'catalogue' brings out the status of our print and electronic collections (books, back volumes of journals, current journals, annual reports, audio cassettes, CD-ROM, gratis materials, slides, theses, video cassettes, WHO publications and reprints) via campus wide access for our scientists. This will allow users to search our catalogue of nearly 10000 titles by author, title, subject, call number, accession number, series, notes, ISBN, ISSN and publisher. Once the user found their title can view the current status of the material(s), whether it has been issued (to whom) or on the shelf. This will further enhance the circulation control. 'Handling books' is being demonstrated with power point presentation about how to handle the

books/journals/bound volumes in better way without spoiling the original condition of the paper back and hard bound materials.

6.7 Interlink

6.7.1 Tuberculosis Link

The 'Tuberculosis link' is a gateway to provide link to other international tuberculosis related sites' home page like WHO International Global Tuberculosis, International Union Against Tuberculosis and Lung Disease, USA National Tuberculosis Center, USA Stanford Center for Tuberculosis Research, CDC Division of TB Elimination, Surveillance of Tuberculosis in Europe etc., in single platform. 'Search engines' is an interlink corner for international popular and Meta search engines' gateway includes MetaCrawler, Inference Find, Dogpile, Medical World Search etc. Meta Search Engines quickly and superficially search several individual search engines at one and the results will be compiled in a compact format.

6.7.2 Open Access Resources

'Open Access Resources' is a portal, providing the details of open sources link for health science resources like BioMed Central, Directory of Open Access Journals, Free medical e-Books, Free Medical Journals, HighWire Press, medIND, PubMed Central etc., which are freely available at a global level, what researchers may not have regular access or awareness about those sites. It leads to wider dissemination of information. On the other hand any researcher can publish his literature in any open access journal allows anyone to read it. The journals also permit author's self-archiving. None of the journals charge for article submission, processing or publication fee from the author or author's institution. It aims at increasing
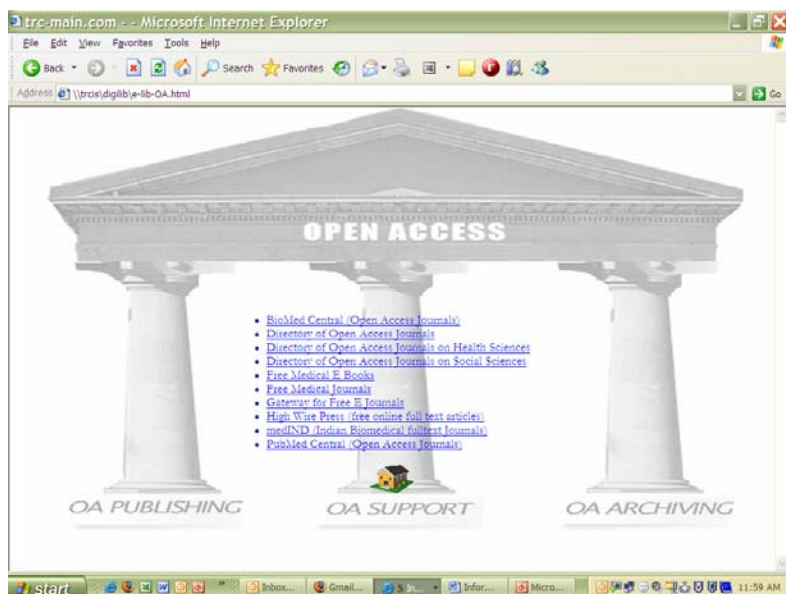
the visibility or accessibility and impact of the published content. Bethesda meeting defines Open Access as, the author(s) and copyright

holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship as well as the right to make small numbers of printed copies for their personal use*. Hence the Open access is a property of individual works, and not necessarily journals or publishers.

6.7.3 Specialized Databases

Leading health science databases' interfaces are being interlinked under a portal named 'specialized databases'. This includes MEDLINE via PubMED, BioMed Central, CancerNet, eMedicine, MedInfo Guide, MedWebPlus etc. 'Trial access' has the interlink connectivity for the existing online trial access facility for journal, database etc. being offered by the publisher. All library services' electronic forms are being made available under 'forms'.

6.7.4 ICMR Circle

'ICMR Circle' establishes hyperlinks to all the twenty one permanent institutes and six Regional Medical Research Centres of Indian Council of Medical Research in India at single platform.

6.7.5 Union Catalogue

The 'Union Catalogue of Biomedical Serials' is a serials holding database of 188 major medical libraries in India being maintained by ICMR-NIC

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* http://www.earlham.edu/~peters/fos/bethesda.htm

(National Informatics Centre) Centre for Biomedical Information, New Delhi. It is an important information tool for locating national and international journals available in those libraries. This database is being regularly updated and can be accessed by users at free of cost.

7. Conclusion

As Follett Report's remarked "the exploitation of IT is essential to create the effective library services of the future", our Information Access Lab is already getting its development with computational multi-media technology. Our mission is to accelerate the development of existing computational technologies to allow efficient access by our scientists by developing interactive environments embedded with computers. Further we like to develop this information access lab as a dynamic knowledge providing hub for tuberculosis and health science resources. The continuous initiatives taken and investment made in recent years in the acquisition of digital resources to our library now form a significant importance. Undoubtedly such developments are bringing far wider users to our growing eLibrary program.

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and enthusiasm to help are an asset for me. I am indebted and very grateful to him.

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