Design and Development of Digital Library : an initiative at TISS

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Abstract:

Digital Libraries are the systems providing users the organised information access to repository of information and services at knowledge base. Ultimately, it is the demand for high quality content and ease of access and use that will drive the initiation and development of digital libraries. The major objectives and principles of digital library have been narrated with applied knowledge system at TISS library. The functional components of the Digital Library have been presented as a model for the information services of the library. The digitisation activities and procedures are also discussed here.

Introduction

Libraries form a vital part of the world's systems of education and information storage and retrieval. They make available- through books, films, recordings, and other media- Knowledge that has been accumulated through the ages. People in all walks of life- including students, teachers, business executives, government officials, scholars, and scientists- use library resources for their research. Large number of people also turn to library to satisfy a desire for knowledge or to obtain material for some kind of leisure-time activity. In addition, many people enjoy book discussions, and other activities that are provided by their Libraries.

The Library of the future will be less a place where information is kept on a portal through which students and faculty will access the vast information resources of the world. The Library of the future will be about access and knowledge-management, not about ownership. The main products of the library and information professionals in the 21st century will be introduction of the digital Libraries and the archives.

Evolution of Digital Collections

In 1993, the British Library initiated the "Electronic Beowulf Project" to capture, enhance, and preserve forever this cultural artifact in digital form. Not only has the manuscript been captured in its current form, but it is now available for study anywhere. This is only one example of how, throughout the world, libraries, museums and archives are digitizing the important documents and images of our culture, both to preserve them for future generations and to make them more accessible to our own.

Through the 1990s, digital library projects were largely experimental activities. Many important advances in digital library techniques came through research sponsored by the U.S. National Science Foundation (NSF) and the U.K. Joint Information Systems Committee (JISC). In 1999 these projects began expanding internationally when NSF linked its digital library research program with similar activities being undertaken by JISC, resulting in the JISC-NSF International Digital Library Initiative. The objectives of this three-year program were to:

- Assemble collections of information that were not otherwise accessible or usable because of technical barriers, distance, size, system fragmentation, or other limits.

- Create new technology and the understanding to make it possible for a distributed set of users to find, deliver, and exploit such information.

- Evaluate the impact of this new technology and its international benefits.

Since then, many other groups have become involved in the expansion of digital library technologies and techniques, including the European Union, Association for Computing Machinery (ACM), the Institute of Electrical and Electronics Engineers (IEEE), the International Federation of Library Associations (IFLA), the American Library Association (ALA), the Coalition for Networked Information (CNI), and the Digital Library Federation (DLF).

What is Digital Library ?

Digital libraries were viewed as systems providing a community of users with coherent access to a large,

organized repository of information and knowledge. One group made the provocative proposal that this organization of information was characterized by the absence of prior detailed knowledge of the uses of the information. The ability of the user to access, reorganize, and utilize this repository is enriched by the capabilities of digital technology.

Digital libraries are for the foreseeable future need to span both print and digital materials and that the central issue was to provide a coherent view of a very large collection of information. In this sense, an emphasis on content solely in digital format is too limiting. Really, the objective is to develop information systems providing access to a coherent collection of material, more and more of which will be in digital format as time goes on, and to fully exploit the opportunities that are offered by the materials that are in digital formats. Additionally, the comprehensiveness and value of the collection accessible through a digital library system can be strengthened by the ability to integrate materials in digital formats that have not been well-represented, easy to access, or effectively usable in traditional library collections, such as multimedia, geospatial data, or numerical datasets. There is, in reality, a very strong continuity between traditional library roles and missions and the objectives of digital library systems.

There are many definitions, ranging from the electronic catalog that describes physical items in a "brick and mortar" library to advanced multimedia environments housing all-digital collections.

H. Thomas Hickerson, Cornell University's Associate University Librarian for Information Technologies & Special Collections believes that "A major portion of library activities are technology-supported and have been for years. The Internet has had an incredible impact, but libraries have a history of managing large systems and using technology to deliver bibliographic information,"

Bernie Hurley, the Director for Library Technologies at U.C. Berkeley, draws the distinction between traditional library automation and digital libraries. Hurley notes that "digital libraries are different in that they are designed to support the creation, maintenance, management, access to, and preservation of digital content."

Sun Microsystems defines a digital library as "the electronic extension of functions users typically perform

and the resources they access in a traditional library". These information resources can be translated into digital form, stored in multimedia repositories, and made available through Web-based services.

Major Digital Library projects in India

Following are the some of the major Digital Library projects that have been initiated and under operational.

The University of Hyderabad became the first institution in India to install the Digital Library Program along with Virtua. The Digital Library initiative was a joint project between VTLS, SUN Microsystems and University of Hyderabad. The University is installing a full Virtua system with the High Resolution Image Navigator to display its digital content. In addition to the implementation of Virtua, the program calls for the digitization of several hundred books and manuscripts held in the library.

Nalanda (Network of Automated Library And Archives) is the result of the ongoing Digital Library Initiative at National Institute of Technology Calicut Library, Kerala. Nalanda Project aims at a full-fledged Digital Library at NITC to cater to the increasing demand for information resources from the Campus User Community as well as from Remote Users from rest of the Country; particularly from the Southern States of India.

ICICI Knowledge Park, Hyderbad is world class National R&D infrastructure of the highest standard, developed jointly by Andhra Pradesh Governement, ICICI Bank Limited and Department of Scientific and Industrial Research (DSIR), Government of India.

UNIVERSAL DIGITAL LIBRARY - a million books to the web, IISC, Bangalore. A project proposal for NSF support under the Indo-US Science and Technology Collaboration initiatives.

Digital Library Initiative at TISS (DLI)

Unlike previous eras, ours is an age of lifelong learning. Society expects that people will continually gain new skills and knowledge. Sociologically, education has become increasingly important as the core of professional and personal success. The library, historically a cornerstone of scholarly endeavor, is re-inventing itself in today's

networked society to meet these new demands. The library is evolving into an electronic portal to a growing global collection of digital content. The doors to this virtual library are now open 24 hours a day, seven days a week, and the library's holdings come to the user when needed. Today's library includes sophisticated tools that make it easy to find the best information resources, delivering them to one's desk- top at the push of a button.

One of the first design issues in the creation of a digital library is to prepare a list of high-level requirements. This list includes what information the library will contain, how that information will be generated, what audience the information is intended for, and how the data will be accessed. An effort has been made here with a vision from TISS of what the digital library can be, its components and practical direction on how to approach development of a digital library, and insight into what could be the future library.

Sir Dorabji Tata Memorial Library develops and provides essential and specialised information resources and services to meet the growing information needs by; i) developing user-based resources, ii) organising information resources iii) providing human and technologically moderated access to information; and iv) aiding users to identify, locate, obtain and evaluate information.

Goals

With the digital library, an individual can;

- Gain access to the holdings of libraries worldwide through automated catalogs
- Locate both physical and digitized versions of scholarly articles and books
- Optimize searches, simultaneously search the Internet, commercial databases, and **library** collections
- to enable users easily access digital collections, regardless of location, language or formats,
- to give efficient access to world wide information directly to the faculty and research scholar's desktop
- to provide a highly interactive electronic network giving access to digital library resources in support of student research and teaching faculty.

Objectives

- To improve P.G. education by allowing students to use digital collections
- To empower students to convey a richer message through the use of multimedia and hypermedia technologies
- To empower other universities to unlock the information resources
- To advance digital library technology

Key components of TISS Digital Library

As shown in Figure-1. a fully developed digital library environment involves the following elements.

1. Initial conversion of content from physical to digital form Eg. ETDs (Electronic Theses and Dissertations) – Digital conversion of Dissertations and Theses and providing access to full text (PDF as well as HTML formats) as well as browsing facility for the same.
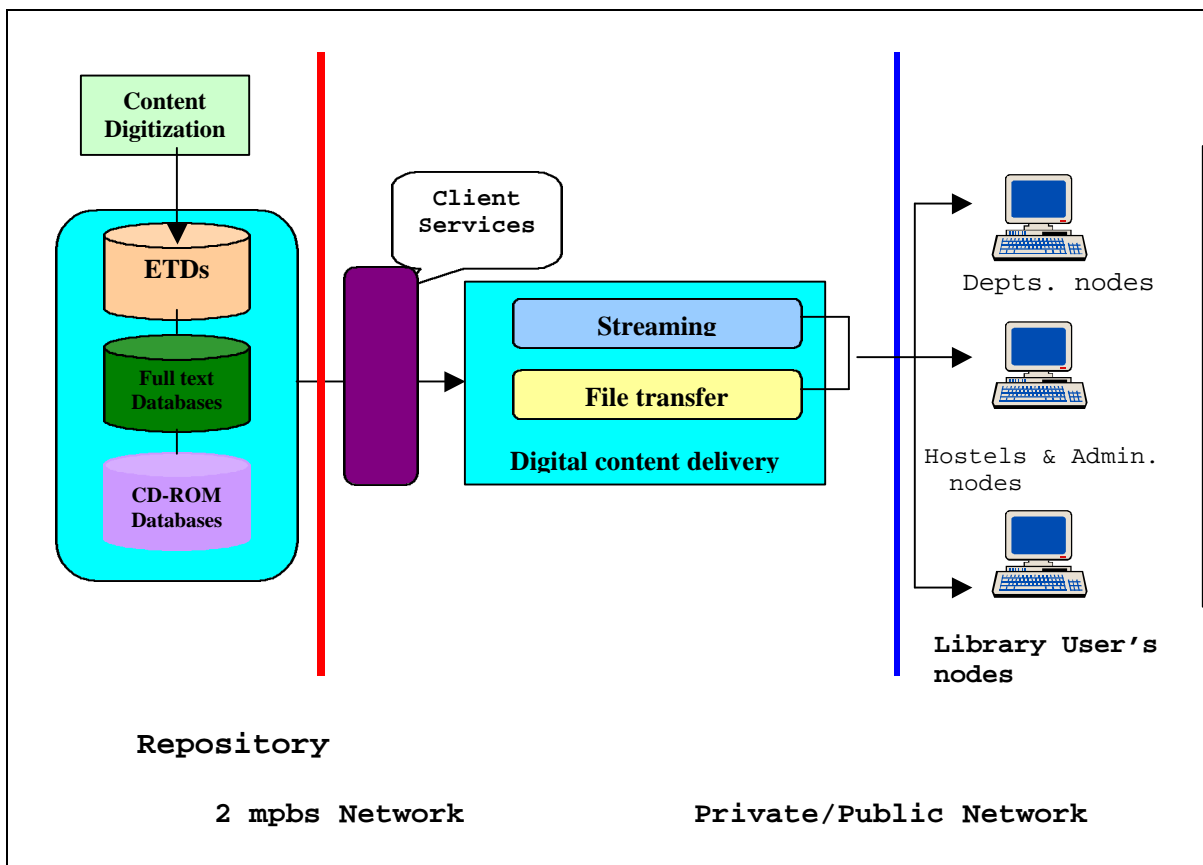2. Storage of digital content in an appropriate repository system.

Figure-1. Functional Components of TISS Digital Library

3. 2 mbps high speed leased line from ERNET India under UGC-Infonet Scheme
4. Client services for the browser including repository querying
5. Digital content Delivery through file transfer or streaming media.
6. Private/Public network
7. User's access through a browser.

Digitisation activities at the Library

- Design and development of Library homepage.

- Intranet and linkage to each TISS faculty's computer node from Library Database.

- Digitisation and Access to Contents pages of *Indian Journal of Social Work,* on-going projects of the Institute.

- Provision for linking social science library sites : National and International

www.geocities.com/tisslibraryin
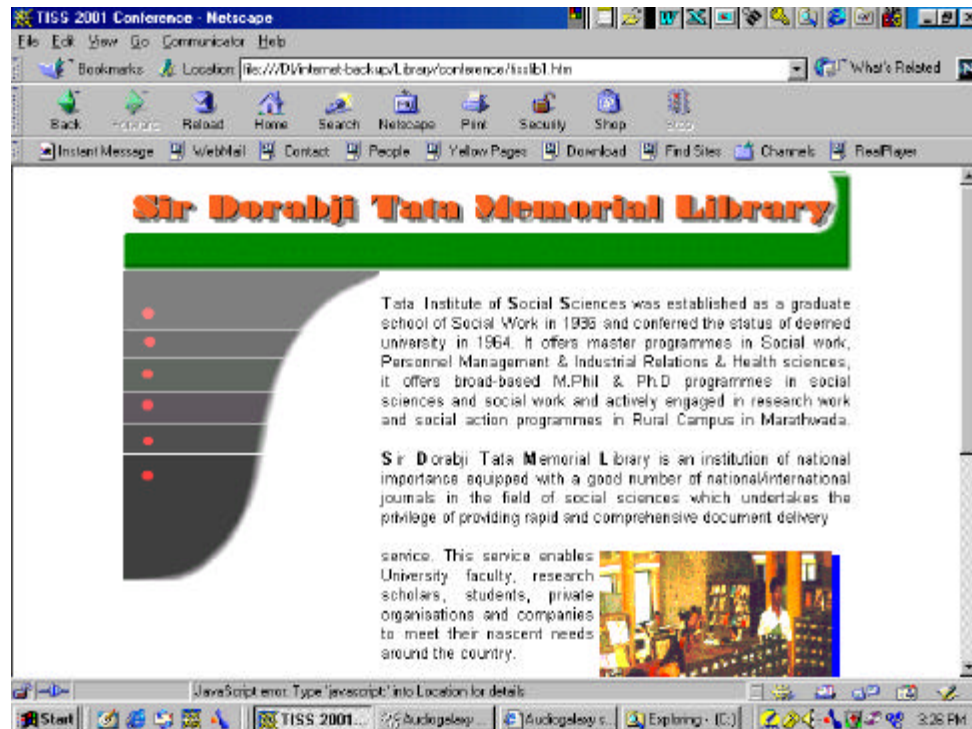
Digital content delivery through Document Delivery Service

The Library is an institution of national importance equipped with a good number of national/international journals in the field of social sciences which undertakes the privilege of providing rapid and comprehensive document delivery service. This service enables university faculty, research scholars, students, private organisations and companies to meet their nascent needs around the country. In the year 2000 UGC-INFLIBNET has identified SDTM Library as one of the Six Document Delivery Centres spread across the country which caters to the information needs of social scientists.

Following map shows location of all Document Delivery Centres.

1. Banaras Hindu University, Varanasi
2. India Institute of Science, Bangalore
3. Jawaharlal Nehru University, New Delhi
4. Punjab University, Chandigarh
5. Tata Institute of Social Sciences, Mumbai
6. University of Hyderabad, Hyderabad

Conclusion

The world of libraries and Information Centres has been witnessing a sea of changes due to its development and deployment of information and communication technologies have not only changed the way information is generated, organized, stored and distributed but more importantly they have become indispensable tools for teaching, learning and research. Since the new technologies are forever redefining the model of delivering instruction and service to keep pace with the technological advancement in Information and Communication Technology to meet the expectations of the users. Library is making sincere effort to establish a modern knowledge management based library.

    The library is growing to be more as a:

- disseminator of knowledge and trainer in information technology

- act as promoter of extension activities with regard to the creation of the database, publication of the multimedia and other documents and the distribution of documents
- information professionals who will co-operate to exchange information in a liberal way.
- part of the global information system to facilitate the communication among the academicians and research scholars all over the country

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