


Subject: Library and Information Science

Production of Courseware

 **-Content for Post Graduate Courses**



Paper No: 08 Digital Libraries

Module : 23 Digital Library Initiatives in India (Part I)



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Digital Library Initiatives in India (Part I)

I. Objectives

The objectives of this module are to discuss and impart knowledge on the following aspects of digital library initiatives in India:

- Introduce the concept of digital libraries;
- Problems & challenges for development of digital libraries in India;
- Discusses digital library initiatives in India.

II. Learning Outcomes

After completion of this module, the students will gain knowledge on different digital library initiatives so far taken and working in India.

III. Structure

- 1 Introduction
- 2 Problems and Challenges
- 3 Current Digital Library Initiatives in India
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1. Introduction

Information is considered as the fulcrum for power and prosperity. It is very essential for economic and social development of the society. The revolution in Information and Communication Technology has started delivering information in digital format with greater speed and economy which triggered development of digital library. The ICT provides greater opportunities in archiving, accessing, digitizing and preserving the traditional knowledge. The open source software movements added newer avenues for greater expansion of digital libraries worldwide. Traditional knowledge available in one or another form is being explored, documented, preserved, and made accessible through networks of digital libraries and archives. The popularity of the word “Digital Library” can be traced to the Digital Library Initiatives (DLI) that was started in 1994 as a joint initiative of the National Science Foundation (NSF), Department of Defense Advanced Research Projects Agency (DARPA), and the National Aeronautics and Space Administration (NASA). Six universities were given the funds for investigation and development of underlying technologies for digital libraries. The second phase of the project was initiated in February 1998. The landmark initiatives that led the path towards the Digital Library movement are the project MERCURY at Carnegie Mellon University; CORE project at Cornell University, the TULIP project and ENVISION at Cornell Institute of Digital Collection, Open Book Project at Yale University, Networked Digital Library of Theses and Dissertation (NDLTD), National Science, Mathematics, Engineering and Technology Education Digital Library (NSDL).

Digital Library development in India is taken up for preserving art culture and heritage of India in mid 1990s. India became de-facto signatory of the UNESCO Universal Declaration on Cultural Diversity, adopted unanimously by the UNESCO General Conference at its 31st session held on 2 November 2001 to strengthen the access to diverse cultural resources available across the country (Das, 2012). Indian state and non-state agencies in collaboration with the Carnegie Mellon University, Universal Digital Library project of the US-NSF (under and Indo-US Science and Technology Collaboration initiatives) have taken significant initiatives in digitization and preservation of vast pool of knowledge available in the physical forms of manuscripts, rare books, out-of-print books and archival materials. Also, those agencies have collaborated with neighboring South Asian countries and shared to a networked community using an online platform. Besides, individual institutions and universities are participating in global digital library movement such as Networked Digital Library of Theses and Dissertations (NDLTD). Moreover, Library and information centre of higher education and research institutes have taken up task setting up institutional repositories with in- house digital content like research reports, publications of researchers, theses and dissertation etc. Several organizations including research institutes and academic institutes are making their existing journals available in open access, e.g. INSA, IAS, CSIR, etc. INFLIBNET Centre has taken-up various open access initiatives such as OJAS: a platform offered to faculty and researchers in universities to host their open-access journals, institutional repositories, namely ShodhGanga, ShodhGangotri and IR@INFLIBNET,

IndCat: union catalogue of various library resources i.e. books, journals and theses, VIDWAN: Subject Expert Database, Info-Portal: A Subject Gateway to Indian Scholarly Internet Resources, etc.

The module, Digital library Initiatives in India, is divided in two parts. The first part discusses about the problem encountered for digital library initiatives in India. It also discusses major digital library initiatives in India. The second part of the module elaborates on initiatives taken towards library consortia, open courseware, metadata harvesting services, etc.

2. Problems & Challenges:

The digitization initiatives in India are encountered with the problems such as lack of national policy, preservation policy, intellectual property rights policy for content development of digital information, rigidity in the publishers' policies and data formats, OCR facilities for Indian languages, etc.

Jeevan (2004) and Dr. Gurram Sujatha (2008), in their separate papers, have encountered following problems of the digitization initiatives in India:

- Lack of clear cut policy at National level with main focus on sustainability
- Outdated software and hardware and difficulty in upgrading the same.
- Non-availability of cost effective new technological advancement.
- Lack of multiple Indian language OCR facilities.
- Non-standard technical activities, data description and transmission characteristics.
- Non-availability of well-trained skilled personnel.
- Lack of management support
- Lack of proper preservation policy
- No Intellectual Property Rights policy for content development of digital information.
- Rigidity in the publishers' policies and data formats
- Implementation of Access Right
- Selection and Security of Content
- Efficient Internet bandwidth
- Financial Support

The above mentioned problems affect the success of digitization initiatives and the creation of digital libraries. These problems have to be addressed positively for development of digital libraries in the country. Three factors that need to be considered more seriously to ensure planned digital resource development programmes and digital libraries in the country are national policy for digitization, sustainability issues and digital divide, as identified by Gurram Sujatha (2008).

3. Current Digital Library Initiatives in India

Government institutions of national importance, national level institutions, research organization, universities, state government institutions, financial institutions, private institutions are key player for initiating digital libraries in India. Some of the important digital library initiatives and programmes initiated across the country are as follow:

3.1 Digital Library of Books

3.1.1 Digital Library of India (<http://www.dli.ernet.in/>)

Year of Establishment: 2003

Implemented By: Indian Institute of Science (IISc), Bangalore

Mega Scanning Centres: Indian Institute of Information Technology Hyderabad (IIIT Hyderabad); Centre for Development of Advanced Computing, Noida (CDAC Noida); Centre for Development of Advanced Computing, Kolkata (CDAC Kolkata)

Participating Institutions: Indian Institute of Information Technology Hyderabad; ERNET (Education and Research Network) India; Centre for Development of Advanced Computing (CDAC)

Supported By: Ministry of Communications and Information Technology, Government of India, National Science Foundation, USA

Alternative URL: <http://tera-3.ul.cs.cmu.edu/ULIB/>

Description: Digital Library of India was formally launched by the then president of India Dr. A. P J. Abdul Kalam on 8th September 2003 to preserve knowledge and cultural heritage of India. It is part of the Universal Digital Library Project of the US-NSF and Million Books Project envisaged by Carnegie Mellon University, USA. The project is supported by the Ministry of Communications and Information Technology, Government of India and coordinated by Indian Institute of Science, Bangalore. It digitizes and preserves all significant libraries, artistic and scientific works in its three regional mega scanning centre and 21 scanning centers and makes it freely available to world for education and research. The structured metadata of scanned document is created and uploaded to Digital Library Portal which provides a searchable interface to access full-text contents.

Current Status: At present, Digital Library of India hosts 4,80,335 books containing about 168 million pages. The books came from about 48 different languages in various subjects.

3.1.2 Vigyan Prasar Digital Library (<http://www.vigyanprasar.gov.in/digilib/>)

Year of Establishment: 1989

Implemented By: Vigyan Prasar, Noida

Participating Institutions: National Council for Science & Technology Communication (NCSTC), New Delhi; NCSTC Network, Delhi; National Children's Science Congress

Supported By: Department of Science & Technology, Government of India

Alternative URL: <http://www.vigyanprasar.gov.in/dream/index.asp>

Description: Vigyan Prasar, an autonomous organization under Department of Science and Technology, Government of India, was established in 1989 for communication of science and technology. Vigyan Prasar maintains an open access digital library to spread scientific knowledge, where the digital collection contains digitized full-text versions of all significant scientific works that are being published by Vigyan Prasar.

Current Status: 80 books in English, 49 books in Hindi and 17 books in other languages and audio video scientific content in CD ROM are available in this digital library. Dream 2047, a popular science magazine and an open access periodical, is also archived in Vigyan Prasar Science Portal from volume one issue one onwards.

3.1.3 NCERT Online Text Books (<http://www.ncert.nic.in/textbooks/testing/Index.htm>)

Year of Establishment: 1961

Implemented By: National Council of Educational Research and Training (NCERT), New Delhi

Supported By: Ministry of Human Resource Development, Government of India

Alternative URL: <http://www.ncert.nic.in/textbooks/backup/index.htm>

Description: National Council of Educational Research and Training (NCERT) was established by the Government of India in 1961 as an autonomous organization to assist and advise the state and central governments in the implementation of their policies for education, especially to bring about qualitative changes in school education. The NCERT has initiated a national portal where school textbooks, based on the National Curriculum Framework 2005, are freely available on the Internet for students and teachers. This portal provides easy navigation to textbook chapters by title/subject of the book for a particular class. The entire book or individual chapters can be downloaded as per the terms of use as mentioned in the Copyright Notice.

Current Status: The service provides easy access to textbooks of all subjects published by NCERT for classes I to XII in Hindi, English and Urdu.

3.2 Digital Library of Manuscripts

3.2.1 Kalasampada: Digital Library Resources for Indian Cultural Heritage
(<http://www.ignca.nic.in/dlrich.html>)

Implemented By: Cultural Informatics Laboratory, Indira Gandhi National Centre for the Arts (IGNCA), New Delhi, India

Supported By: Ministry of Communications and Information Technology, Government of India

Description: The Indira Gandhi National Centre for the Arts (IGNCA), in collaboration with the Ministry of Communication and Information Technology, initiated a digital library on indigenous cultural heritage named Kalasampada (Digital Library: Resources of Indian Cultural Heritage (DL-RICH)) for the development of a databank of cultural heritage. DL-RICH provides online access to digital images of cultural heritage resources such as manuscripts, rare photographs, rare books, rare painting, sculptures, handicrafts, monuments, artifacts, festivals, as well as varieties of textual, graphical, audio-visual and multimedia resources. This portal provides access to different segments of its collection with English interface and English transliterated metadata information.

Current Status: Kalasampada facilitates scholars' access to the materials including 272,000 manuscripts, 100,000 slides, thousands of rare books, 4,000 rare photographs, 400 hours of audio and video along with research publications, fifty tutorials produced by the IGNCA. It also hosts a Sanskrit text repository, called Gaudiya Grantha Mandira that covers more than 400 chapters from different oriental texts. Kalasampada received the 'Golden Icon: Award for Exemplary Implementation for e-Governance Initiatives' under the category, Best Documented Knowledge and case study, given by India's Department of Administrative Reforms and Public Grievances in 2005.

3.2.2 National Databank on Indian Art and Culture (NDBIAC)

(http://ignca.nic.in/ndb_0001.htm)

Implemented By: Indira Gandhi National Centre for the Arts (IGNCA), New Delhi, India

Supported By: MCIT and Archeological Survey of India

Description: In its second phase of digitization project, INGCA started National Databank on Indian Art and Culture (NDBIAC), a pilot project of Department of Information Technology, Ministry of Communication and Information Technology (MCIT), and Archaeological Survey of India, Government of India with an aim to enhance the accessibility of Indian cultural resources using digital technology. NDBIAC provides access to digitized images and audio-visuals provided by ASI and state archaeology departments. It also gives access to virtual walk throughs of archaeological monuments, back issues of ASI journal "Indian Archaeology - A Review", ASI reports and rare books in Indic languages (Hindi and Sanskrit) and English.

Current Status: The project is pilot project and aim to cover over 100,000 visual, 1000 hours of audio and video, 25000 rare books on art and culture and walk-through of some of the archaeological monuments.

3.2.3 National Mission for Manuscripts (<http://www.namami.org/index.htm>)

Year of Establishment: 2003

Implemented By: National Mission for Manuscript

Supported By: Ministry of Tourism and Culture, Government of India

Description: The Department of Culture, and Ministry of Tourism and Culture, Government of India, launched the National Mission for Manuscripts in February 2003 with an aim to locate, document, preserve and render vast collection of manuscripts which are available in variety of themes, textures and aesthetics, scripts, languages, calligraphies, illuminations and illustrations. NMM established a network of 47 MRCs (Manuscript Resource Centres), 32 MCCs (Manuscript Conservation Centres), 32 MPCs (Manuscript Partner Centres) and more than 200 MCPCs (Manuscript Conservation Partner Centres) across the country for identifying, inventorying, preservation and conservation of endangered documentary heritage collections available in the form of manuscripts. NMM maintains a National Database of Manuscripts named 'Kritisampada'.

Current Status: At present total 20 lakh data are available on NMM Website.

3.2.4 Muktabodha: Digital Library and Archiving Project

(http://www.muktabodhalib.org/digital_library.htm)

Year of Establishment: 2003

Implemented By: Muktabodha Indological Research Institute, New Delhi

Participating Institution: French Institute of Pondicherry (IFP), Ecole française d'Extrême-Orient (EFEO)

Supporting Agency: SYDA Foundation, USA

Alternate URL: http://www.muktabodhalib.org/SECURE/digital_library_index.htm

Description: The Muktabodha Digital Library and Archiving Project is initiated by Muktabodha Indological Research Institute in July 2003 to preserve scriptural texts related to the Tantric and Agamic traditions, as well as India's oral tradition of Vedic chanting and the ritual and philosophical knowledge associated with it. The goal of the Digital Library is to preserve rare Sanskrit manuscripts and texts in multiple digital formats, and make them accessible through website for study worldwide.

Current Status: It has preserved paper transcripts of Shaiva Siddhanta, from the French Institute of Pondicherry including 210,000 digitized pages in over 2,000 texts, Vedic manuscripts of Gokarna, 24 volumes of the Shaiva Siddhanta Paripalana Sangha Devakottai in the South Indian scripts, 75 volumes texts of the Kashmir Shaivism.

3.3 Electronic Theses & Dissertation (ETD)

3.3.1 ShodhGanga: Indian ETD Repository (<http://shodhganga.inflibnet.ac.in/>)

Year of Establishment: 2010

Implemented By: INFLIBNET Centre

Participating Institutions: More than 160 Universities

Supported By: University Grants Commission

Description: ShodhGanga is a digital repository set-up for submission of electronic version of theses and dissertations by research scholars in universities in India and make them available in open access to the world-wide academic community in response to the UGC Notification (Minimum Standards & Procedure for Award of M.Phil. / Ph.D Degree, Regulation, 2009). ShodhGanga is set-up using Dspace that uses internationally recognized protocols and interoperability standards. 160 Universities have signed MoU with INFLIBNET Centre to join in ShodhGanga project and deposit their theses.

INFLIBNET Centre also maintain a repository of approved synopsis submitted by research scholars to the universities for registering themselves for the Ph.D programme called ShodhGangotri (<http://shodhgangotri.inflibnet.ac.in/>) with an aim to measure trends and directions of research being conducted in Indian universities and to avoid duplication of research.

Current Status: ShodhGanga provides access to more than 14500 electronic theses and dissertations from 160 universities. Shodhganga Received the eIndia Jury Choice Award for Best ICT Enabled Higher Education Institute of the Year 2011. **ShodhGangotri** provides access to more than 1712 synopsis submitted by research scholars from various universities.

3.3.2 Vidyanidhi Digital Library (<http://www.vidyanidhi.org.in/>)

Year of Establishment: 2000

Implemented By: Department of Library Science, University of Mysore

Supported By: NISSAT, DSIR, Government of India, Ford Foundation and Microsoft India

Description: Vidyanidhi is a portal of doctoral research in India. It began as a pilot project in 2000 with support from government, the Ford Foundation and Microsoft India archive of dissertations, as well as a set of resources for doctoral research in India. The Vidyanidhi Digital Library has two layers: a metadata database and the full text of theses.

Current Status: More than 5000 full text and 50,000 bibliographic records of these submitted to the universities in India were hosted in Vidyanidhi. The vidyanidhi website was not functional in March 2014.

3.4 Institutional Repositories

There are 99 institutional and subject wise repositories in India that are registered in Registry of Open Access Repository (ROAR). Institutional repositories initiated in India can be viewed at <http://roar.eprints.org/>.

3.5 Digital Library of Journals - Initiatives by Scientific Society and Publishers

3.5.1 Indian Academy of Sciences (www.ias.ac.in/pubs/journals/)

Implemented By: Indian Academy of Sciences (IAS), Bangalore

Partner Institutions: Current Science Association, Bangalore; Indian Institute of Sciences, Bangalore; SpringerLink, Germany

Supported By: Ministry of Science and Technology, Government of India

Description: The Indian Academy of Sciences (IAS) is a scientific academy funded by the Government of India. Digital platform is developed to provide online access to 11 peer reviewed journals with all backfiles and other publications, including reports, newsletter, patrika, year book and annual report etc. published by Indian Academy of Science.

Current Status: Access to 11 journals with backfiles

3.5.2 Indian National Science Academy (www.insa.ac.in)

Implemented By: Indian National Science Academy (INSA), New Delhi

Supported By: National Information System for Science and Technology (NISSAT), Department of Scientific and Industrial Research (DSIR), Government of India

Description: The Indian National Science Academy (INSA) was established in 1935. It is funded by Government of India. INSA, with support from NISSAT, has initiated e-journal@insa project in 2002 to facilitate conversion of INSA journals from print to digital format and host them online. This portal provides access to current and back volume full-text literature of INSA journals, organizes scientific discussions, proceedings and monographs annual report, year book etc.

Current Status: Access to 7 journals with backfiles

3.5.3 NISCAIR Research Journals (<http://nopr.niscair.res.in/>)

Implemented By: NISCAIR

Description: NISCAIR has developed Online Periodicals Repository (NOPR) to preserve its 17 research journals, working papers, preprints, technical reports, conference papers and data sets in various digital formats. All publications can be access full-text in PDF format through NOPT platform.

3.5.4 IndMed (IndMED@NIC: <http://indmed.nic.in>) (OpenMED@NIC: <http://openmed.nic.in>)

Implemented By: MEDLARS Centre (IMC), Bibliographic Informatics Division, National Informatics Centre (NIC), New Delhi

Supporting Agency: Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare, Government of India

Description: National Informatics Centre (NIC) and Indian Council of Medical Research (ICMR) had collaborated to setup Indian Medlars Centre to provide information support and services to the medical research community. The Centre produced two important resources; the first is IndMed@NIC, which indexes more than 100 prominent biomedical journals of India from 1985 onwards. This bibliographic database is accessible online. The second resource is OpenMed@NIC that provides open access to the full text articles of 108 Indian biomedical journals. Different publishers, mainly learned societies in the respective specialized areas, publish these journals in print-on-paper format. The new project entitles “National Databases of Indian Medical Journals” is in process for maintaining, updating and improvising these two important national resources.

3.5.5 Open Journal Access System @ INFLIBNET (<http://www.inflibnet.ac.in/ojs/>)

Implemented By: INFLIBNET Centre

Description: Open Journal Access System @ INFLIBET Centre provides digital platform for hosting of electronic version of journals into open access mode with all processes of submission, peer-reviewing, editing, layout designing and publishing built into it. It encourages universities and institutions that are publishing journals in print format to use the OJAS @INFLIBNET for hosting electronic version of their journals free-of-cost on server at the INFLIBNET Centre. The OJAS@INFLIBNET provides full-text access to 14 journals published by universities and higher education institutions.

Current Status: Access to 14 open access journals

3.5.6 Indianjournals.com (www.indianjournals.com)

Implemented By: Divan Enterprises, New Delhi

Partner Institutions: Academic and Professional Institutions/ Societies in India and other Asian Countries

Description: IndianJournals.com provides single window access to multidisciplinary Indian journals published by different scholarly societies and institutions.

Current Status: Out of 150 journals, 11 are open access journals. This journal gateway also provides access to subscription-based content.

3.5.7 Medknow Publications Pvt Ltd (www.medknow.com/journals.asp)

Implemented By: Medknow Publications Private Limited, Mumbai

Partner Institutions: Bio-medical Institutions and Scientific Societies in India and other Asian Countries

Description: Medknow Publications Private Limited is a publisher of high-quality peer-reviewed scholarly open access journals in India. It publishes, maintains and hosts 48+ open access peer reviewed scholarly journals, mainly in the biomedical subject areas on behalf of learned societies and associations.

Current Status: Access to 48 journals

3.5.8 Kamla-Raj Enterprises (www.krepublishers.com/KRE-New-J/index.html)

Implemented By: Kamla-Raj Enterprises, Delhi

Partner Institutions: Academic Institutions and Scholarly Societies in India

Description: The Kamla-Raj Enterprises is a Delhi-based publisher established in 1933. Kamla-Raj publishes seven print-based peer-review scholarly journals mainly in the areas of social sciences which are also available in electronic format on open access. These journals are OAI-compliant. The publisher maintains an archive of each of these open access journals starting from volume one.

4. Summary

The module, Digital library Initiatives in India, is divided in two parts. This is the first part of the module. It discusses about problems & challenges for development of digital libraries in the country. It then discusses about digital library initiatives and programmes initiated across the India such as digital library of books, digital library of manuscripts, electronic theses & dissertation, institutional repositories, digital library of journals, etc. The second part of the module elaborates on initiatives taken towards library consortia, open courseware, metadata harvesting services.

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