Digital library initiatives in India: a proposal for open distance learning

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DIGITAL LIBRARY INITIATIVES IN INDIA:  
A PROPOSAL FOR OPEN DISTANCE LEARNING

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'ABSTRACT'

Information and communication technologies have brought significant changes in all-round development of the society through transmission of information. Information is the fulcrum for power and wealth and very crucial for economic and social development of the society. In India, a number of digital library initiatives and digitization programmes have been initiated across the country. Most of the digital library initiatives are government funded. The Ministry of Communications and Information technology has also established the Digital Library of India. This paper discusses various problems, challenges and issues involved in design and development of digital libraries in India.

The paper highlights the role of Distance Education Council (DEC) as an Apex body in co-ordinating Distance Education, Research and technology transfer in India. One of the greatest strength of Open Distance Learning (ODL) is its ability to harness the latest communication technologies to reach the unreached and to reduce inequalities and respond to socio, cultural and economic contexts of the learners and promote excellence. It's approach and framework stand on three pillars – relevance, equality and excellence. This paper proposes a Digital Library System for Open Universities in India.

KEY TERMS: Digital Libraries; Open Distance Learning

1. INTRODUCTION

Information and Communication Technologies (ICTs) have brought significant changes in all-round development of the society through transmission of information. Application of information technology to Library and Information Science has provided wider opportunities in archiving and accessing knowledge in the digitized form besides conservation and preservation of the traditional knowledge. Digitization of materials will provide enhanced access to the electronic information sources and the users can access the digital content irrespective of time and space boundaries.

In India, digital library initiatives were undertaken initially with a view to preserve the art, culture and heritage of the country. Some special libraries are also engaged in digital library initiatives in a limited way. However, initiatives in academic libraries particularly in the Open Distance Learning Libraries (ODL) are yet to venture into the digitization. As such, this paper proposes to:

- Study the digital library initiatives undertaken so far by the Government and other organizations in India.
- Examine the challenges and problems faced in the digital library initiatives, and
- Propose a digital library initiative for the ODL institutions in India.
2. DIGITAL LIBRARY INITIATIVES IN INDIA

Many large libraries throughout the world started digitizing their materials in early 1990s. In 1992 Cornell University formed the digital access coalition to explore the use of digital imagery which is now taken up by the Cornell Institute of digital collection. Launched in 1992, the Yale University Open Book Project has converted its micro filmed volumes of 19th & 20th century books into digital format. The US Digital Library Initiative is funded by the National Science Foundation and was launched in 1994.

In UK a series of digital library initiatives were launched during late 1990s. British library was one of the key players in development and digitization initiatives in U.K. Public libraries in U.K formed a National Grid for Learning and become important provider of Electronic information.

Among the digital library initiatives of Open Universities, the Open University of HongKong (OUHK) Electronic library and U.K. Open University (UKOU) Library are worth mentioning. The Electronic library of OUHK provides access to electronic resources, electronic books and other reference material and can be used at any time, anywhere by its students, staff and faculty. The UKOU also provides access to its learners electronic resources by user name and password. It also provides links to several open access journals and reference materials. International Centre for Distance Learning (ICDL) located in the Open University’s Institute of Educational Technology also has digitized library which includes information on distance education institutions, courses and literature pertaining to distance learning.

India is also not behind. A number of initiatives are being taken-up, in India towards digitization.

The concept of digital libraries in India began in the mid 1990s with the spread of information technology, the internet and the support of the Central Government. In 1996, this concept was recognized during the Conference on Digital Libraries organized by the Society of Information Science at Bangalore. Though a few libraries have made attempts earlier in this direction, the digital library initiative in India is still at budding stage.

Majority of the Digital library initiatives were largely confined to limited uses such as subscribing to e-journals, scanning documents and installing them on the intranet. But there is every need for rapid change in this scenario of libraries in India to use the Information Technology (IT) and ICTs which are confined so far to the prestigious National institutes such as the Indian Institutes of Technology (IIT), Indian Institutes of Management (IIM), Indian Institutes of Science (IIS) Research Institutes under the control of NISSAT and some special Libraries. Some government agencies and institutions, mostly in the public sector are also engaged in digitization of their libraries in a limited a way. However, it is evident from the initiatives taken so far in this direction that the great potential of ICTs for developing digital libraries has not yet been fully utilized. Some of the important digital library initiatives and programmes initiated across the country are reviewed below (Refer Annexure-1 for list of major initiatives)

Archives of Indian Labour

The Archives of Indian Labour was set up in July, 1998 as a collaborative project of V.V. Giri National Labour Institute and the Association of Indian Labour Historians. The core activities of the archive are Digital Archiving, Research, Collection, Public Interface & Dissemination. It was instituted in order to address the urgent need for preservation of rapidly decaying documents and material on labour and to provide for greater public access to the same, as It was felt that documents and data on Indian Labour are being irretrievably lost due to lack of an organized initiative to preserve these documents in the country. The archive, apart from being a repository of documents also builds collections and initiates research in the field of labour history.
Digital Library of India

Digital Library of India (DLI) is the biggest national level digital library initiative in India. It is a part of the Universal Digital Library Project, envisaged by Carnegie Mellon University, USA, which has some other international partners such as China and Egypt. DLI is coordinated by Indian Institute of Science, Bangalore and is supported by Ministry of Communications and Information Technology, Government of India. The Mission is to create a portal for the Digital Library of India which will foster creativity and free access to all human knowledge. As a first step in realizing this mission, it is proposed to create the Digital Library of one million books, predominantly in Indian languages, available to everyone over the Internet. This portal will also become an aggregator of all the knowledge and digital content created by other digital library initiatives in India.

Digital Library of art Masterpieces

HP Labs, (Hewlett Packard’s) announced a pilot project with the Centre for Development of Advanced Computing (CDAC) to digitize part of the art collection in the National Gallery of Modern Art (NGMA). NGMA plans to put up images of the paintings on the net, from which customers can order full-sized prints. The museum will make reproductions on demand on Hp design Jet printers and sell them. Similarly, the Indira Gandhi National Centre for the Arts (IGNCA) has taken up multimedia projects for the digitization of traditional artwork and artifacts that will be made available on the web. The digitization of “Geet Govinda,” an important classic of Indian literature, is one of their successful ventures.

Down the Memory Lane

The National Library of India has initiated in late 1990s a digitization programme, known as ‘Down the Memory Lane’, to digitize rare books, manuscripts and other resources from its collection. The English books that were published prior to 1900 and Indian books published before 1920 were taken into consideration. Similarly, the Central Secretariat Library has initiated a programme to digitize government publications like, Gazette of India, Commission & Committee Reports, Annual Reports of the Ministries.

Indian National digital Library in Engineering Science & Technology

The Ministry of Human Resource Development (MHRD) has set-up the Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium on the recommendation made by the Expert Group. INDEST Consortium is the most ambitious initiative taken up so far in the country. It welcomes other institutions to join and offers highly discounted rates of subscription and better terms of agreement with the publishers. INDEST Consortium presently include ACM Digital Library, ASCE Journals, ASMe Journals, Capitaline, Euromonitor (GMID), IEL Online, Indian Standards, Nature, ProQuest Science, ScienceDirect, Springerlink and bibliographic databases of Compendex, Inspec and MathSciNet.

Kalasampada

Indira Gandhi National Centre for Arts (IGNCA), established a Digital Library, known as “Kalasampada”, (Digital Library Resource for Indian Cultural Heritage). It includes non-print as well as printed materials. The users will have access to the highly researched publications of the IGNCA from a single window. The integration of multimedia computer technology and software provides a new dimension in the study of the Indian Art and Culture.

Khuda Baksh Oriental Public Library

The Khuda Baksh Oriental Public Library has initiated digitization of Arabic and Persian manuscripts of the medieval India. It is one of the Oriental Libraries having rich collection of Persian, Arabic, Urdu and other languages manuscripts.
Mobile Digital Library (Dware Dware Gyan Sampada)

For spreading and promoting literacy among the common citizens, Internet enabled Mobile Digital Library was brought to use. Mobile Van with satellite connection for Internet connectivity is used. The van is also fitted with printer, and binding machine for providing bound books to the end user from a single point. This is a product from C-DAC-ERDC Noida.

Mukhtabodha Digital Library and Archiving Project

The Mukhtabodha Project is an attempt to create a digital library in Indian languages specially the ancient texts on palm leaves, birch tree barks etc.

National Institute of Advanced Studies (NIAS), Bangalore

This institution has started digitization of paintings and the Microfilming of Indian Publication Project (MIPP). The NIAS has also started work on rare manuscript preservation projects for both microfilm and microfiche.

National Mission for Manuscripts

The Department of Culture, Government of India has launched the ‘National Mission for Manuscripts’ in 2003 with the main objectives of conservation and preservation of Manuscripts for posterity. India, being the largest repository of Manuscripts, rare books, classics etc., urgently needs digitization to preserve as well as give access to. The National Informatics Centre (NIC) has prepared detailed guidelines for digitization of Manuscripts.

National Resource Centre for Women

The National Resource Centre for Women was set up by the Government of India as a Virtual Resource Centre on Women’s issues. It serves as a decentralized, participatory and partnership oriented entity aiming at giving access to digital catalogues of different libraries dealing with women’s issues, reports of diverse nature, statistics, events, legislation etc using different media to reach the clientele at different levels.

Parliament Library

In order to cater to the needs of Members of Parliament and officers and staff of Parliament Secretariat a digital library has been set up in the parliament library. A large number of index-based databases of information was initially developed by the computer centre. The data stored and available now in PARLIS databases for online retrieval relates to questions, debates, reports, bio-data of present and past members of parliament including photographs and addresses etc.

Vidyanidhi

Vidyanidhi – a Sanskrit word means “Treasure of Knowledge”. It is begun as a pilot project to demonstrate the feasibility of electronic Theses and Dissertations. As per the Action Plan of the National Task Force on Information Technology and Software Development, it is mandatory for all universities and deemed universities across the country to host every thesis/dissertation on a designated website. This national policy has provided a policy framework for initiating a digital library of ETDs. ‘Vidyanidhi’ project was started in the year 2000 at the Department of Library and Information Science, University of Mysore, with the sponsorship of National Information System for Science and Technology, Government of India. The Project’s vision is to build and strengthen the research capacities and enhance the quality of doctoral research in India.
3. PROBLEMS ASSOCIATED WITH DIGITAL LIBRARIES – POSSIBLE SOLUTIONS:

The digitization initiatives in India are encountered with the problems of lack of technical infrastructure, trained manpower, finances and policy initiatives. Some of the problems are:-

a) Lack of clear cut policy at National level with main focus on sustainability
b) Outdated software and hardware and difficulty in upgrading the same.
c) Non-availability of cost effective new technological advancement.
d) Lack of multiple Indian language OCR facilities.
e) Non-standard technical activities, data description and transmission characteristics.
f) Non-availability of well-trained skilled personnel.
g) Lack of management support
h) Lack of proper preservation policy
j) Rigidity in the publishers’ policies and data formats

The above factors affect the success of digitization initiatives and the creation of digital libraries. These problems have to be addressed positively to ensure planned digital resource development programmes and digital libraries in the country. In order to achieve it, the following factors may be taken into consideration.

I. National Policy for Digitization – Should focus on:

- Education and life long learning for all citizens
- Information to enhance participation of citizens in the socio-economic development
- Promotion of business and economy, training and employment
- Traditional knowledge and preservation of cultural heritage
- Developing repository of historical evidence and community history

II. Sustainability issues:-

For issues related to sustainability, the main focus will have to be on the following areas:

- user focused Policy and Strategies
- provision for refreshing the data
- user charges, prices, framing guidelines for fixation of prices,
- people’s participation, Political and administrative will,
- capacity building to develop skilled man power,
- co-operative subscriptions, shared technology system, resource sharing, joint archives
- changing role of librarians and information professionals

III. Digital divide:-

The major issues to be addressed in India before taking initiatives to create the digital libraries are:-

- Creation of basic infrastructural facilities such as internet and telecommunications etc.
- Creation of awareness among the users on usage of technology.
4. DISTANCE EDUCATION IN INDIA

In order to meet the growing need for educational access and to achieve the goal of democratization of education, bringing education to the reach of unreached, alternate systems of education have been developed across the globe. Distance or Open Learning has evolved as an alternate system making education more accessible to the learner at affordable cost. Today, across the world, the concept of ODL has gained momentum and is recognized as an acceptable medium for imparting education. The revolutionary changes in electronic media and ICTs contributed to further development of the system and paved way to multimedia instruction using e-materials, Radio, Audio-visual methods, teleconferencing, computer conferencing and extensive use of internet.

In India, the University of Delhi was the first to introduce distance learning programmes in 1962 through its correspondence courses. Soon it was followed by several other universities.

The first Open University was established in 1982 in the country. The Open University and distance education institutions are now in a position to meet the demand for education. India has a vast network of distance education institutions, with around 106 dual mode institutions and 14 single mode Open Universities, (Refer Annexure – II for list of Open Universities in India).

The Distance Education Council (DEC) is responsible for promotion of the Open and Distance Learning (ODL) system and for coordination and maintenance of standards in distance education in the country. In pursuance of these objectives, DEC has taken a number of initiatives for providing support to State Open Universities (SOUs) and other Correspondence Course Institutes (CCIs) of conventional universities. The Council extends technical and financial support for development of infrastructure, institutional reforms, professional development and training, student support services, computerization and networking for improvement of quality of education. With the recent initiatives of the DEC, about 40 conventional universities have established new Distance Education Institutions (DEIs). The number of dual mode universities in the country now is 106.

5. DIGITAL LIBRARY – A PROPOSAL FOR ODL

Distance Learners’ characteristics are different from students in the traditional universities. They are generally adults, employed and have family responsibilities. Their motivation levels are generally high and are willing to take responsibility for their own education. Mostly they are self-directed and study on independent basis. They choose a variety of ways for learning and take control over their learning. They are mainly constrained by the problems of access and retrieval of the required information from libraries. The problems as described by Angel and Budnick (1986) and Cooper and others (1998) are:

a) The distance learning institution may not offer library services to the learners.
b) Learners have reluctance to travel long distances to use the library
c) Lack of information literacy skills.
d) Lack of knowledge in using libraries or using electronic information sources.
e) Reluctance to approach the librarian and library staff members for help in retrieving the information.

Digital library provides an answer to most of the information access problems of the distance learners. Today, ODL institutions bring education at the doorsteps of the learners through networks. The Internet also plays a vital role in acting as a powerful tool to the learners. Digitization of scholarly materials is one of the many initiatives undertaken by institutions across the globe, which facilitates wide access and availability of such materials.

The ODL institutions can initiate a consortium that will plan, co-ordinate and implement a national level digital library for the benefit of distance learners. Each individual member institution of the consortium should share its learning resources. This way, a wide range of collection of learning materials can be developed. This should be made available to the learners and accessible through the Intranet and the Internet. A digital rights management system can be interlinked with the digital library to address the copyrights and other related
issues. Copyright laws are very old in India and need to be amended keeping in view of the digitization. In the proposed consortium approach all the participating open universities should come to a consensus on the copyright issues to promote open access initiative.

India has one Open University at the national level and 13 State Open Universities offering courses only in distance mode. These universities have libraries to meet the information needs of their learners. All these universities subscribe to several high value journals with substantial duplication. In addition, they publish newsletters, annual reports, thesis, course materials, old question papers etc., which are important resources for the learners.

The duplication of resources can be avoided, if a nodal agency is formed under the aegis of Distance Education Council. This nodal agency will create necessary infrastructure to network the digitized resources of all the universities and rationalize the access of the high valued electronic journals and other resources. The proposed digital network with DEC as the nodal agency is presented below:

**Proposed Digital Library Network of ODL**

There are several digital libraries for distance learning in the world which are highly successful (ICDL, Hong Kong Open University etc). Similarly in India also an attempt has been made in this direction by establishing INDEST and Infonet consortia.

All the open universities should come to an understanding regarding digitization of the material and networking of the resources for implementation in a phased manner.

The nodal agency will provide access to all the member ODL institutions:

- Online databases;
- Online electronic journals in various subject disciplines;
- ‘Research in progress’ in various ODL institutions;
- Link to all the related ODL institutional digital repositories;
- Expertise available in various ODL institutions etc.
Digital libraries of ODL institutions should aim at providing the following services to the learners:-

- Digital / virtual reference service
- Information service through e-mail
- Access to OPACs
- Powerful search tools to retrieve the whole or parts of a digital documents, etc.

Expected Benefits from the proposed Digital Library are:

Apart from providing wider access and free flow of information to distance learners and to all those involved in open distance education, the proposed digital library provides several advantages. Some of these are –

- Networking and sharing of resources can be done easily;
- It provides cost effective solutions to libraries;
- More information can be provided at the press of a button. The user do not have to travel from long distances and his/her time and resources will be saved;
- Information can be updated continuously much more easily;
- Collaboration and exchange of ideas is possible;
- Improved preservation of resources;

6. CONCLUSION

So far, the Indian digital library initiatives are mainly seen as academic and research oriented. Though some useful resource material such as land records, cartographs, policy documents, legal judgments, parliamentary discussions etc., are being made available, they are not on large scale. Most of these initiatives are done in isolation without any coordination with other similar institutions.

It can also be seen that many of the initiatives are one time projects with a limited grant, often without any proper planning for continuity. Important issues such as project objectives, preservation methods, content selection, coordination with other similar initiatives, access mechanism, sustainability and cost factor are not addressed.

None of the existing digital library projects meet the specific needs of the ODL users. With the booming of the Indian economy, and an increasing skilled work force, the need for continuing education programmes is ever increasing. The population of India has crossed the one billion mark and ODL is playing a very significant role in educating the masses. It is expected that the proposed consortium of ODL digital libraries would go a long way in making the Indian workforce the best of its kind in the world.
ANNEXURE – I
Major Digital Library Initiatives, Digitization Programmes and
Institutional Repositories in India

Archives of Indian Labour
http://www.indialabourarchives.org

CSCS Media and Culture Archive

Digital Library of India
http://www.dli.ernet.in

Digital Repository of NCL
http://dspace.ncl.res.in

Digitization, Electronic Archiving, Indexing and Retrieval system of the Indian Journal of
Medical Research
http://www.icmr.nic.in

Digitization of Manuscripts
http://namami.nic.in

Digitization of Patents, Designs and Trademarks
http://www.patentoffice.nic.in

Down the Memory Lane
http://nlindia.org

DSpace @ NITR
http://dspace.nitrkl.ac.in/dspace/

ePrints@IIMK
http://etd.ncsi.iisc.ernet.in/

Eprints @ IIT Delhi
http://eprint.iitd.ac.in/dspace

ETD @ IISc
http://eprints.iisc.ernet.in

IGNCA Digital Library
http://ignca.nic.in

INDEST
http://panit.iitd.ac.in/indest

IITMK
http://www.iitmk.ac.in/iitmk/digitallibrary.htm

Indian Institute of Science NCSI
http://vidya-mapak.ncsi.iisc.ernet.in/cgi-bin/library

Indian Institute of Technology
http://www.library.iitb.ac.in/~mnj/gsdli/cgi-bin/library

Kalasampada
http://www.ignca.gov.in/dlrich/
Khuda Bakhsh Oriental Public Library
http://kblibrary.bih.nic.in/

Librarians Digital Library
http://drtc.islibang.ac.in

Mobile e-Library
http://mobilelibrary.cdacnoida.in

Muktabodha
http://www.muktabodhalib.org/digital_library.htm

Nalanda Digital Library
http://www.nalanda.nitc.ac.in

National Resource Centre for Women
http://nrcw.nic.in/

National Science Digital Library
http://www.niscair.res.in

National Tuberculosis Institute
http://ntiindia.kar.nic.in

OpenMed@NIC
http://openmed.nic.in

Parliament Library
http://164.100.24.208/ls/library/library.htm

Technology Information, Forecasting & Assessment Council
http://www.indianpatents.org.in

TIFR Digital Library Initiative
http://www.tifr.res.in/scripts/content_r.php?terminalnodeid=20050

Vidyanidhi
http://www.vidyanidhi.org.in
### List of Open Universities in India

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<th>Sl. No.</th>
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<td>68,865</td>
<td>State</td>
<td><a href="http://www.baou.org">www.baou.org</a></td>
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<td>33,172</td>
<td>State</td>
<td><a href="http://www.ksoumysore.com">www.ksoumysore.com</a></td>
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<td>1997</td>
<td>25,244</td>
<td>State</td>
<td><a href="http://www.wbnsou.com">www.wbnsou.com</a></td>
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<td>PT. SUNDERLAL SHARMA OPEN UNIVERSITY, BHILASPUR, CHHATTISGARH</td>
<td>2005</td>
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<td>2006</td>
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http://india.gov.in/sectors/education/ignou.php


www.ignou.ac.in