

Status of Digital Library in India

Dr.Pramod Kumar Hota

Librarian, Bengal College of Engineering and Technology, Bidhan Nagar, Durgapur, West Bengal

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.

2. INITIATIVES OF DIGITAL LIBRARY IN INDIA

In India, the concept of digital libraries and digitization has started in the last decade. The Government of India has already taken initiatives with the help from the United States of America. The initiative of the Digital Library of India has its root in the Million Book Project (MBP) initiated by the National Science Foundation of the USA at the Cambridge Million University with India as a partner. The Indian Institute of Science, Bangalore is the focal point of this activity in India. The objective of the collaborative project has to digitize one million seminal books which happen to be in the public domain and making them available on the web only one at any time anywhere in the world. As part of the project, India launched the Digital Library of India Portal in September, 2002. While inaugurating the portal Dr. A.P.J. Abdul Kalam, the then Honorable President of India, in his inaugural address said "India has taken the initiative at the right time". The Department of Culture, Ministry of Tourism and Cultural Government of India also launched the National Mission for manuscripts in February, 2003 by Shri Atal Behari Vajpayee, the former Honorable Prime Minister of India. The main objectives of the mission are to facilitate conversion and preservation of manuscripts through training, address, financial assistance to document catalogue and promote access to Indian manuscripts to encourage scholarship and research and to build a National manuscript library. The Central Secretariat Library has also undertaken massive work on digitizing the Government document resources.

In India, the Library and Information Centers have initiated the digital library projects to establish it by procuring digital resources in the form of CD-ROM based databases, on line databases, online journals, e-books rare and valuable

archival collection of importance. These documents needed to be digitized carefully. So digitization are very important to preserve knowledge resources, art and culture, education, science and technology literature and humanities, media and entertainment, preservation of culture heritage and history.

3. MAJOR DIGITIZATION INITIATIVES IN INDIA

Some of the important digitization initiatives undertaken in India are as follows:

3.1 National Science Library/National Digital Library

The NSL has over 2,40,000 printed collection of S&T documents which includes monographs, bound volumes of journals, reports, theses/dissertations, standards, and patents etc. The NSL's collection policy is to build resources with an emphasis on high end R&D reference sources, Indian S&T publications, foreign language dictionaries, library and information science, information & communication technology, computer science, conference proceedings, technical reports and other sources relevant to S&T community of the country. Department of Information Technology too has in the past supported projects in the area of Digital Library Initiatives. The initiatives have been essentially of two types: Setting up of Mega Centers, Scanning Centers in collaboration with Indian Institute of Science, Bangalore and Carnegie Mellon University, USA.

Under the collaborative Programme, scanners for these centers were provided by Carnegie Mellon University, USA, under Million Book Universal Digital Library Programme. Indian Institute of Science, Bangalore is coordinating this Programme under the guidance of Professor N. Balakrishnan, Associate Director. The digital data generated by these scanning centers under this activity is web enabled on "Digital Library of India" web site <http://www.new.dli.ernet.in>. This site in addition to above scanning centers has data from other scanning centers too that were supported by IISc, Bangalore/CMU, USA. List of Projects and Current Status including Achievements is as follows:

Table 1
Digital Library of India and their Status

Sl. No	Name of Project and Implementing Agency	Objectives and deliverables of the Project	Status of the Project
1	Establishment of Digital Library of India by ERNET, India.	<ul style="list-style-type: none"> • Make Collaborative arrangement between institutions in India and US to digitize around a million books. Contain different type of content both of technical literature and art Facilitate easy access and optimize the bandwidth (both domestic and International). Set up servers at 13 nodal centers and Link the nodal centers on the ERNET India's backbone for making available digital books accessible for anyone on the net. 	Project Completed. Installed servers at 13 Nodal centers. Provided the connectivity to 6 nodal centers i.e. internet bandwidth of 2 Mbps to SERC, IISc., Bangalore, IIIT, Hyderabad, 1 Mbps to IIIT, Allahabad, 512 Kbps to C-DAC, Noida & Rashtrapati Bhawan and 128 Kbps to Sri Jagadguru Shankracharya Sharada Peetham, Sringeri.
2	Setting up of Scanning Centers in Uttar Pradesh for participation in the Million Book Universal Digital Library Project of Carnegie Mellon University of USA by IIIT, Allahabad.	To digitize books of common interest to the communities and make them available in a location and time independent way.	Project completed. The scanned data web enabled. http://www.new.dli.ernet.in
3	Setting up of Scanning Centers in Maharashtra for participation in the Million Book Universal Digital Library Project by MIDC, Mumbai	Conversion of rare books of common interest in digital forms and makes it available on the web.	Project completed. Scanned data web enabled. http://www.new.dli.ernet.in
4	Setting up of Scanning Centers at Hyderabad for participation in Million Book Universal Digital Library Project by Central Library, Hyderabad and State Central Library Hyderabad.	Conversion of rare books of common interest in Telugu and Sanskrit in digital forms and makes it available on the web.	Project Completed. Scanned data web enabled on www.new.dli.ernet.in
5	Advaitasara project (Digitization of ancient manuscripts other & south Indian Languages pertaining to the vedas, vedangus, upanishad and other sastric studies by Sri Sri Jagadguru Shankaracharya Mahasamsthanam, Dakshinamanga Sri Sharada Peetham, Sringeri.	Digitization of ancient manuscripts.	Project Completed. Scanned data web enabled on www.new.dli.ernet.in
6	Digital Archivin	Digital Archiving for preservation of rare manuscripts and old magazines from mid 19th Century to 1950 available with 'Nagri Pracharini Sabha, Varanasi.	Project completed. The scanned data web enabled on www.dli.cdacnoida.in
7	"KALASAMPAD" Digital Library -Resource of Indian Cultural Heritage (DL-RICH)- by IGNC; New Delhi.	To enhance the access to cultural resources using digital technology. Digital resources made accessible to the students, Scholars, researchers and scientific community.	Project completed. The scanned data web enabled on www.ignca.gov.in/dlrich/welcome.html
8	Digital Archiving for Preservation of Rare Manuscripts and Folios Available with Namgyal Institute of Tibetology – Sikkim by Namgyal Institute of Tibetology – Sikkim with technical support of C-DAC Kolkata.	<ul style="list-style-type: none"> • Digital Archiving for preservation of rare manuscripts and folios available with Namgyal Institute of Tibetology, Sikkim. • Digitization of Hymns reactions. 	Project Completed Scanned data web enabled on www.new.dli.ernet.in
9	Setting up of scanning center at Sringeri, Karnataka for participation in Million book	• Heritage Collection & Digitization/ OCR of Palm Leaf	Project Completed Scanned data web enabled on

	universal Digital library project of Carnegie Melon University of USA by Sringeri Math, Sringeri Karnataka.	Manuscripts, Kaditas, Paper Manuscripts and printed books on Vedas. Vice & Video recording of Shastrartha deliberations Transcriptions of Vaidik, Sanskrit Manuscripts and Books. Development of indexing using self learning mechanism of DB2 content manager for manuscripts.	www.new.dli.ernet.in (Scanned data is available under the Project at Sl. No. 5). Project: Advaitasarada project (Digitization of ancient manuscripts other & south Indian Languages pertaining to the vedas, vedangus, upanishad and other sastric studies).
10	Setting up of scanning centre at Goa for participation in Million book universal Digital library project of Carnegie Melon University of USA by University of Goa.	Digitization/OCR of rare books in Portuguese, Marathi and Konkani in the Digital forms and make them available to public and also on the web.	Project Completed Scanned data web enabled on www.new.dli.ernet.in
11	Setting up of scanning centre at Hyderabad for participation in Million book universal Digital library project of Carnegie Melon University of USA by University of Hyderabad.	Digitization/OCR of rare books in Telgu, Sanskrit, Hindi, English & Indian History, etc.	Project Completed Scanned data web enabled on www.new.dli.ernet.in
12	Setting up of scanning centre at BharatiyaJnanpith for participation in Million book universal Digital library project of Carnegie Melon University of USA by BharatiyaJnanpith, LodhiRoad, NewDelhi	Digitization/OCR of rare books and manuscripts etc. of Jain Heritage culture in the digital forms and make them available to public and also on the web.	Project Completed Scanned data being web enabled www.new.dli.ernet.in
13	Setting up of Scanning Centers in Maharashtra for participations in the Million Book Universal Digital Library Project by University of Pune.	Conversion of rare books of common interest in Marathi and Sanskrit in digital form and make it available on the web.	Project Completed Scanned data web enabled on www.new.dli.ernet.in
14	Print your own book -Mobile Digital Library by C-DAC Noida.	<ul style="list-style-type: none"> • Mobile Digital Library is to bring 1 million digitized books • Expanding access to Information and Knowledge in schools, library, hospitals etc. • Updating digital library with available contents. 	Project Completed Books scanned, printed and distributed in schools. DLI regularly updated.
15	Creation of Digital Library of Books in President House by C-DAC Noida.	To create a free-to-read, searchable collection of data in the form of images in the first phase and then conversion of data into text format in English and Indian languages by scanning the books and indexing the images through keywords.	Project Completed Digital library created in President House. Scanned data web enabled on www.new.dli.ernet.in
16	Establishing Centres for Digital Archiving and creation of rare knowledge pertaining to Ayurvedic Medicine, integrating & showcasing of the content created through Digital Library outlet for Uttaranchal State by C-DAC Noida.	Digitization Manuscripts & Information related to Ayurvedic and forestry.	Project completed. The scanned data web enabled on www.dli.cdacnoida.in
17	Development of National Databank on Indian Art and Culture (A pilot project) by IGNCA.	Digitize Copy right free books, Visuals, Recording of Audi/Video and - Walkthrough historical Monuments.	Project completed. The scanned data web enabled on www.ignca.gov.in
18	Digital Library of India 2: Creating a large collection of WideNationalInterest at IIT, Hyderabad.	“Digitize (IPR Free) book.	Project completed. The scanned data web enabled on http://dli.iit.ac.in/phase2.html
19	Creation of Model Electronic Library System at the University of Delhi at Delhi University.	Digitize copyright free books and Conducting the programs on Digital Literacy / Competency for faculty, students and	Project completed. The scanned data web enabled on www.library.du.ac.in/dspace

		researchers.	
20	Mega Center Digital Library of India–2nd Phase: Content Creation (East Indian Languages and in English) and Storage and Access” by C-DAC, Kolkata.	Digitize (IPR Free) books.	Project completed. The data is to be web enabled www.new.dli.ernet.in

3.2 Digital Library initiative at National library of India, Kolkata

The digitization of in- house materials was started in the National Library in 1999 and 3.2 million pages were digitized in to two phases: 1900-2000 and 2005-2006. These were mostly in Bengali and English books published before 1900 and the 1335 manuscript Tutinamah. From April, 2010 a dynamic website, hosted by NIC was linked in the earlier static site. An online public Access catalogue is now accessible through the internet (Web OPAC) in this site(www.nationallibrary.gov.in). A New server-storage systems has been made operational, the local Area Network has been extended. The web-OPAC now contains about 8,50,000 bibliographies records and it seems to have sunk in that electronic catalogue. The statistics include a retro-converted electronic catalogue. The static part of the website has been thoroughly edited and corrected. In 2011, the National Library started subscribing to the 10 megabit per second internet leased line from BSNL to provide internet connection to users and members of the staff. After the gap of over five years, the third phase of digitization most selected materials in library started in October, 2011.

3.3 ETDS initiative in India: Electronic Theses and Dissertation Projects of INFLIBNET Centre, Ahmedabad

The INFLIBNET hosts database of bibliographic records of Ph.D. submitted to various universities in India starting from 1905. The INFLIBNET center bring it electronically original research to light is to publish it electronically and give students and researchers free and open access to these documents via the World Wide Web.

3.3.1e- P G Pathsala-The MHRD, under its National Mission on Education through ICT (NME-ICT), has assigned

work to the UGC for development of e-content in 77 subjects at postgraduate level. The content and its quality is the key component of education system. High quality, curriculum-based, interactive content in different subjects across all disciplines of social sciences, arts, fine arts & humanities, natural & mathematical sciences, linguistics and languages is being developed under this initiative named e-PG Pathshal.

3.4 VidyaNidhi Projects

The Library and Information Science department of Mysore University has begins work in July, 2003 with the grants from the Ford Foundation. In the pilot stage 200 theses of Mysore University mainly in Kanada have been digitized and placed on the projects website www.vidynidhi.org.in for free access and download.

3.5 Indian National Digital Library in Engineering Science and Technology (INDEST) Consortium

The Ministry of Human Resources Development (MHRD) has set up the INDEST consortium on the recommendation made by the expert group appointed by the ministry under chairmanship of Prof. N. Balakrishnan. The Ministry provides funds required for subscription to electronic resources for 38 institutions including IISC, NITs, IIMs and a few other centrally funded government institutions through the consortium headquarters set- up at the IIT Delhi. Moreover, the INDEST Consortium, as open- ended propositions, welcomes other institutions to join it on their own for sharing benefits. It offers in terms of highly discounted rates of subscription and better terms of agreement with the publishers.

Table 2
Major Digital Library Initiatives and Digitization Programmes in India

Sl No	Name of Digital Library Initiative	Host Institution	Funding Body	URL	Subject	Types Documents Digitizing
1	Digital Library of India (DLI)	Indian Institute of Science (IISc.)	Ministry of Communication and Information Technology(MCIT)	www.dliemet.in	All subjects	Books, Manuscripts, etc.
2	Kalasampadr Digital Library. Resource for Indian Cultural Heritage (DL.RICH)	Indira Gandhi National Centre for Arts (IGNCA)	Ministry of Communication and Information Technology (MCIT)	www.igncagov.in/dlrich/	Oriental Studies, Literature, Culture and Heritage	Slider, Books, Manuscripts, Audios, Photographs, Videos,

						Microfilms, Journal, Newsletter, etc.
3	Traditional Knowledge Digital Library (TKDL)	National Institute of science Communication and Information Resources	Department of Indian Systems of Medicine and Homoeopathy (ISM&H)	www.tkdl.res.in	Traditional Knowledge, Indian Systems of Medicine, Health and Hygiene	Monographs, Patents, Excerpts/ Slokas from Ancient Literature, etc.
4	Mobile.Library	CDAC Noida	Ministry of Communication and Information Technology (MCIT)	http://mobilelibrary.cdacnoida.in	All Subjects	Books
5	Nalanda Digital Library	NIT ,Calicut	All India Council for Technical Education (AICTE)	www.nalanda.nitc.ac.in	Science and Technology, Management	Monographs, Articles, etc.
6	Archive of Indian labour. Integrated Labour History Research Programme	V.V.Giri National labour Institute and Association of Indian Labour Historians		www.indialabourarchives.org	History, Indian Labour, Industrial Relations	Monographs, Reports, Archival Records, Photographs, etc.
7	National Science Digital Library (NSDL)	(NISCAIR)		www.niscair.res.in	Science and Tech, History of Science	Monographs, articles, etc.
8	Learning Objects Repository	Consortium for Educational Communication	University Grants Commission (UGC)	www.cec-vhe.ac.in	All Subjects	Audio-Visuals, Audios, Videos, etc.
9	Digital Library in Business and Management	Center for Development of Digital Libraries (CDDL), Indian Institute of Management Kozhikode (IIMK)	Ministry of Human Resource and Development (MHRD)	http://intranet.iimk.ac.in/gsd/cgi.bin/library	Management, Business, Industries	Books, Reports, Articles, etc.
10	Dawn the Memory Lane	National Library	Ministry of Culture	www.india.org	All subjects	Books & manuscripts, etc
11	Digitization Central Secretariat Library	Central Secretariat Library	Ministry of Culture	http://csl.nic.in	All subjects	Gazette of India, Commission and committee reports Annual Reports etc.
12	Digitization of Manuscripts	National Mission for Manuscript	Ministry of Culture	http://namami.nic.in	Cultural Studies, Literature, Culture and Heritage	Manuscripts
13	Patents Designs	Technology Information Forecasting and Assessment	DST	www.indiapatents.org.in.in	Science and Technology	Patents Designs

		Council.				
14	Digitization of Patents, Designs and Trademark	Patent Office	Ministry of Commerce and Industry	www.patentoffice.nic.in.	Intellectual Property, Science and Technology	Patents Designs and Trademark
15	Digitization electronic achieving indexing and retrieval systems of the Indian Journal of Medical Research.	Indian Council of Medical Research (ICMR)	Indian Council of Medical Research (ICMR)	www.icmr.nic.in	Medical Sciences, Biological Sciences	Journals Articles, Monographs, Reports

Table 3
Major Institutional repository Initiatives in India

Sl. No	Name of IR	Institution	Pattern of Submission	Website address	Type of Documents available	Software Used
1	Librarians' Digital Library (LDL)	Documentation Research & Training Centre, India Statistical Institute	National	http://drtc.isibang.ac.in	Articles, conference papers, theses	D-space
2	Vidyanidhi	University of Mysore	National	http://www.vidyanidhi.org.in	Theses and dissertations	D-space
3	OpenMed@ NIC	National Informatics Centre	National	http://eprints.iimk.ac.in	Articles, conference papers	GNU E-Prints
4	ePrints@IIMK	Indian Institute of Management, Kozhikode	Institutional	http://eprints.iimk.ac.in	Articles, conference papers	GNU E-Prints
5	ETD at IISc	Indian Institute of Science	Institutional	http://etd.ncsi.iise.emet.in/	Theses and dissertations	D space
6	ePrints at IISc	Indian Institute of Science	Institutional	http://eprints.iise.emet.in/	Articles, conference papers	GNU E-Prints
7	ePrints at IIT Delhi	Indian Institute of Technology, Delhi	Institutional	http://eprints.iitd.ac.in/despace	Convocations addresses, faculty research publications	D space
8	NAL Institutional Repository	National Aerospace Laboratories	Institutional	http://nal.ir.nal.res.in	Articles, seminar papers, technical reports	GNU E-Prints
9	Digital Repository of NCL	National Chemical Laboratory	Institutional	http://dspace.ncl.rcs.in/	Theses, patents, project reports	D space
10	DSpace@ NITR	National Institute of Technology, Rourkela	Institutional	http://dspace.nitrkl.ac.in/dspace/	Conference Papers, Journal articles, reprints	D space

4. NATIONAL DIGITAL LIBRARY

The National Digital Library of India (NDLI) was launched in 2016 under Ministry of Education, the Government of India and dedicated to the nation on June 19, 2018, by union human resource minister Prakash Javadekar... The main features of NDLI are

- Educational materials are available for users ranging from primary to post-graduate levels.
- NDLI has been designed to benefit all kinds of users like students (of all levels), teachers, researchers, librarians, library users, professionals, differently abled users and all other lifelong learners.
- Information can be personalized based on the education level, choice of language, difficulty level,

media of content and such other factors. This is thus like a 'customised service' provided in a 24x7 integrated environment where learners can find out the right resource with least effort and in minimum time.

- Repository hosts contents from multiple subject domains like Technology, Science, Humanities, Agriculture and others.
- More than 60 types of learning resources are available - books, articles, manuscripts, video lectures, thesis, etc.
- Items are available in more than 70 languages.
- Repository integrates contents from different Indian Institutional Repositories.

5. CONCLUSION

Most of the libraries in India have adopted the digital library concept of digital storage, searching and communication. Although technology is advancing very rapidly there is an absence of implementing of the new technology due to lack of adequately trained manpower. Dr. A.

P. J. Abdul Kalam described digital library is where the past meet the present and creates a future. A digital library provides equitable access to knowledge to all the people, irrespective of place, caste, creed color or economic status. The digital library unites rather than divide. Therefore, there is a need of time to develop initiative of digital libraries.

REFERENCES

1. <http://deity.gov.in/content/national-digital-library>
2. <http://drtc.isibang.ac.in>
3. <http://dspace.ncl.rcs.in/>
4. <http://dspace.nitrkl.ac.in/dspace/>
5. <http://eprints.iimk.ac.in>
6. <http://eprints.iise.emet.in/>
7. <http://eprints.iitd.ac.in/dspace>
8. <http://etd.ncsi.iise.emet.in/>
9. <http://nal.ir.nal.res.in>
10. <http://www.vidyanidhi.org.in>
11. www.dliemet.in
12. www.igncagov.in/dlrich/
13. www.indialabourarchives.org
14. www.nalanda.nitc.ac.in
15. www.tkdl.res.in
16. www.cec-vhe.ac.in
17. www.niscair.res.in
18. <https://ndl.iitkgp.ac.in>