Open Access Initiatives in India

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Presentation Outline

- Open Access Publishing (OAP) and developing countries
- Potential for OAP in India
- Current open access initiatives
- OAP model for India

Open Access Publishing (OAP)

- Provision of free online access to quality 'Open domain' and 'Open access' scholarly material
- Enablers:
  - Global movement and initiatives for open access – OAI, BOAI, SPARC, FOS,…
  - Free online publishing and digital repository software
  - Protocols for metadata and interoperability

Open Access Publishing (OAP)…

- Value of OAP to Developing Countries:
  - Protect IP
  - Remove access barriers ('price' and 'permission' crises)
  - Enhance national research capacity
  - Improved visibility - global platform for local research – improved collaboration – information flow
  - Improved economy

Potential for OAP in India

- Large number non-commercial R&D institutions (academic, R&D labs)
  - 2,900 (R&D directory, NSTMIS, DST, 2001)
  - Academic institutions:
    - Universities (graduate, research): 290
    - Colleges: 12,600
    - Teachers: ~ 400,000
  - R&D labs under govt. science agencies
    - Industrial research, defense research, agricultural research, medical research, biotechnology, environment, S&T, IT, space, energy, ocean development, etc.

Potential for OAP in India…

- Potential for OAP:
  - Science journals
    - Universities and R&D institutions
    - Professional societies and associations
  - Technical reports
    - Sponsored R&D projects
    - In-house R&D projects
  - Theses and dissertations
  - Conferences
  - Research papers – preprints, post-prints
  - Unpublished research findings
  - Patents, standards

Current Open Access Initiatives

Some Examples

Current Open Access Initiatives

- Scholarly science journals
- Theses
- Institutional E-Print archives
- Books (out of copyright)
- Data
- Metadata level open access
- Portal and gateway services

Scholarly Science Journals

- Indian Academy of Sciences (IAS)
  - Established: 1934
  - Organizes meetings, discussions, seminars, symposia and publishes 11 journals.
  - All journals web accessible
  - Digitization of issues right from the first volume is under way
  - http://www.ias.ac.in/

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Scholarly Science Journals…

- IAS Journals available online:
  - Proceedings of the Indian Academy of Sciences - Chemical Sciences (www.ias.ac.in/chemsci)
  - Proceedings of the Indian Academy of Sciences - Mathematical Sciences (www.ias.ac.in/mathsci)
  - Proceedings of the Indian Academy of Sciences - Earth and Planetary Sciences (www.ias.ac.in/epsci)
  - Sadhana (Academy Proceedings in Engineering Sciences) (www.ias.ac.in/sadhana)
  - Pramana - Journal of Physics   (www.ias.ac.in/pramana)
  - Journal of Biosciences   (www.ias.ac.in/jbiosci)
  - Bulletin of Materials Science   (www.ias.ac.in/matersci)
  - Journal of Astrophysics and Astronomy   (www.ias.ac.in/jaa)
  - Journal of Genetics   (www.ias.ac.in/jgenet)
  - Resonance - Journal of Science Education   (www.ias.ac.in/resonance)
  - Current Science   (www.ias.ac.in/currsci)

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Scholarly Science Journals…

- Indian National Science Academy (INSA)
  - Established: 1935
  - Publish journals, organize scientific discussions and bring out proceedings and monographs
  - DSIR supported project for digitizing and web hosting of INSA journals:
    - Indian Journal of Pure & Applied Mathematics
    - Proceedings of INSA A Physical Sciences
    - Proceedings of INSA B Biological Sciences
   - Indian Journal of History of Science
  - http://www.insa.ac.in/

Theses

- Vidyanidhi
  - A digital library initiative for digitizing and hosting theses and dissertations
  - Dept. of L&IS, University of Mysore
  - Supported by DSIR, GOI
  - Part of global ETD initiative
  - Develop workflows, DTD, multilingual support…
  - http://www.vidyanidhi.org.in/
- Other theses initiatives: IIT, Delhi and IIT, Mumbai

Vidyanidhi – DL of Theses
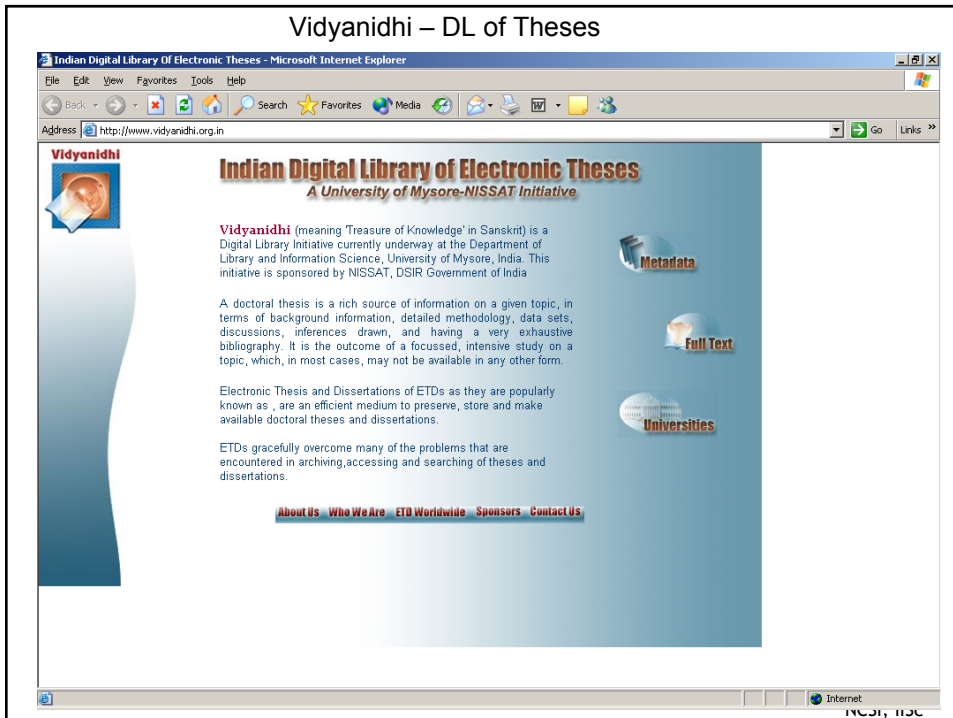
Institutional E-Print Archives

- eprints@iisc
  - E-Print archive of Indian Institute of Science, Bangalore
  - Online digital repository of IISc research papers
  - Research papers (preprints, post-prints), book chapters, tech reports, unpublished findings, conf papers, magazine articles
  - Set up using eprints.org open source software
  - Part of worldwide institutional e-print archives
  - http://eprints.iisc.ernet.in/

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Books

- Universal Library project
  - Indian Institute of Science, Bangalore (with CMU, USA)
  - Goal: Free-to-read, searchable collection of one million books (out-of-copyright)
  - Test bed for research - language processing, indexing, search and retrieval
  - http://144.16.85.66/

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Universal Library Project
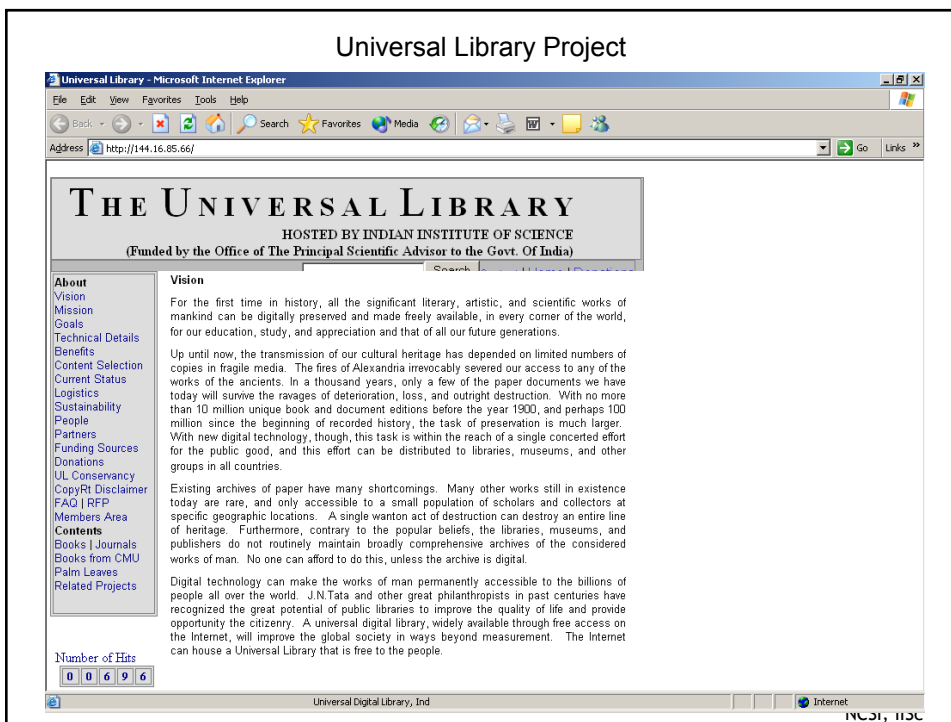
Data

- National Chemical Laboratory (NCL)
  - National Collection of Industrial Microorganisms (NCIM)
    - Culture collection of around 3700 strains of algae, bacteria, fungi and yeast
    - Free access to all related data
    - http://www.ncl-india.org/ncim/
  - National Centre for Biodiversity Informatics
    - Indian biodiversity informatics
    - http://www.ncbi.org.in

Open Access at Metadata Level

- National Informatics Centre (NIC)
  - INDMED – bibliographic database of Indian biomedical literature – 75 Indian journals
  - http://indmed.nic.in/
- INFLIBNET
  - Resource sharing network of Indian universities – UGC programme
  - Databases – experts, R&D projects…
  - http://web.inflibnet.ac.in/

Other Major Initiatives

- National Health Information Collaboration (NHIC)
  - WHO/ ICMR project - Heath InterNetwork India
  - Portal for Indian health data and information
  - Free open source software under development
- URDIP: CSIR Unit for Research and Development for Information Products
  - Open access to Indian patents and medicinal plants
- Gateway services for open access resources
  - SciGate: Science Information Portal (IISc)
  - AeroInfo: Aerospace Virtual Library (NAL)

OAP Model for India

How do we replicate these OAP examples?

How can we adopt OAP in an organized manner?

…across the country?

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OAP Model for India…

A Proposal:

- Evolve a national network of distributed, inter-operable, open access digital repositories of S&T research material
  - Institutional digital repositories
  - Open access science journals, conferences…
- Network with global open access services

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OAP Model for India…

- Motivation:
  - Strong support for open source software in India
  - Increasing interest in use of digital library software (e.g. Greenstone, eprints.org)
  - Emerging global OAI inter-operability framework (e.g. e-print archives)
  - Availability of OAI compliant open source digital library and online publishing software

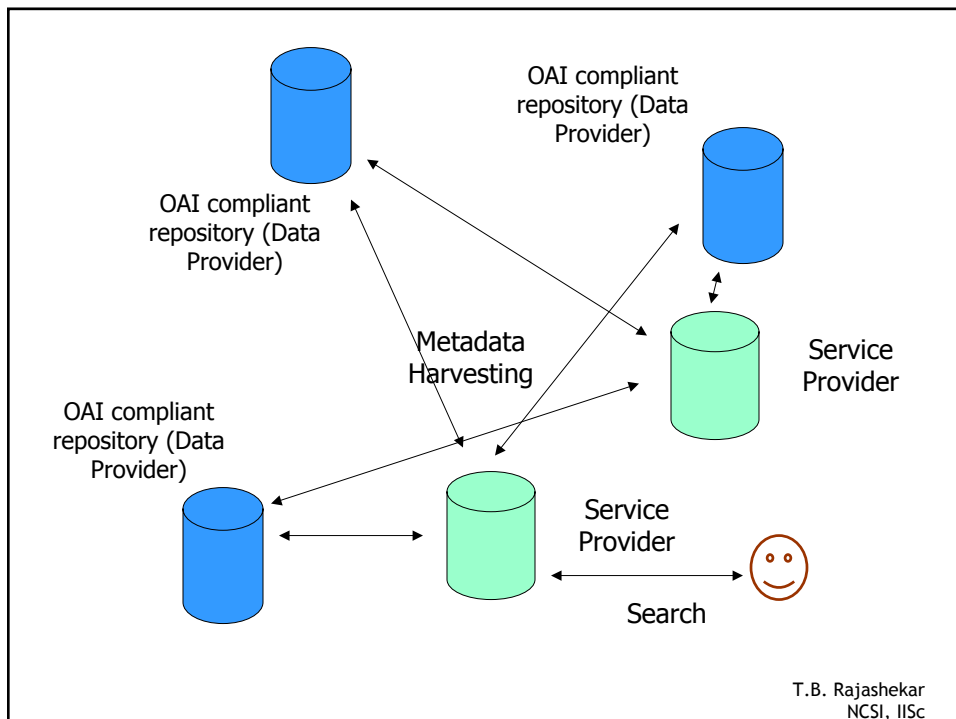T.B. Rajashekar
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OAP Model for India …

- Realizing the model:
  - Academic & R&D institutions: Set up online digital repositories of their research output
  - Science journals (academic and R&D institutions, and professional societies) - adopt open access publishing
  - Establish new online-only open access journals
    - Areas of local strength (e.g. agriculture, medicine)
    - Graduate student journals
  - Incorporate peer review/ quality control

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OAP Model for India …

- Operation of the model
  - Digital repositories - act as data providers and expose their metadata for harvesting
    - Use freely available OAI compliant software (e.g. DSpace, ePrint.org, CERN CDSWare, OJS, Greenstone DL) or develop necessary support
  - Service providers - harvest metadata from the repositories and offer variety of services at national level

OAI compliant repository (Data Provider)

OAI compliant repository (Data Provider)

OAI compliant repository (Data Provider)

Metadata Harvesting

Service Provider

Service Provider

Search

OAP Model for India …

- Role of libraries:
  - Significant role
  - Establish and operate institutional repositories
  - Support researchers with open access publishing activities
  - Best suited to provide document preparation and content management expertise

Conclusion

- National level mechanism essential to promote and coordinate OAP systems
  - Improve awareness of open access
  - Regular training – tools, processes, standards
  - Support setting up of working models, services
  - National Resource Centre for OAP?
- UNESCO, ICSU, ICSTI, CODATA need to actively promote and support developing country initiatives