Open Access Landscaping in India : Building Institutional Repositories (IRs) Using 'DSpace'

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Presentation Plan

- India's Scientific Potential
- Availability of Scholarly Literature
- Prescriptions
- OA and its missions
- OA Efforts in India
- IRs and its Features
- IR Softwares

- Features and Functionality
- DSpace presence in India
- DSpace Promotion in India and the Asian Region
- Training Programmes
- Support Organization

Higher Education Scenario in India

- A vast country having one of the largest higher education system in the World

- 171 Universities, 19 Central Universities

- 99 Deemed Universities

- 17000+ Colleges, 2000+ Polytechnics

- 100,00,000+ (100 Lakhs) Students

- 4,57,000+ (4.57 Lakhs) Teachers

- 888,000+ educational institutions

- World class institutions of higher learning such as IISc, IITs, NITs, IIMs, Universities…

Scientific Research

- The third largest scientific and technical manpower in the world
- Vision oriented efforts since Independence (1947 +)
- Exclusive Government Departments for Science & Technology, Atomic Energy, Space, Electronics, Oceanography, Biotechnology…
- Over 300 Research Laboratories belonging to CSIR, ICMR, ICAR, ICSSR, DRDO, ISRO…
- Education/Science performed by IISc, IITs, NITs, IIMs…and most of the Medical/Engineering/Business Schools, Universities and research labs are of international standards

Scientific Productivity

❖ Science in India presently shows sings of stagnation

❖ Number of Scholarly Articles in SCI – 12,000 (approx.)

❖ Total number of articles SCI + non-SCI – 30,000+

❖ A large number of articles are left uncaptured by international indexing / abstracting / full-text databases

❖ Contributes only a small percent to the International literature

Availability of Scholarly Information/Literature

❖ Widening Divide between Information Haves and HaveNots

❖ Non-availability of international science literature (peer reviewed scholarly content)

❖ Only a few of the Institutions have endowed infrastructure

❖ Lack of exposure and lack of a level playing ground to the academic/scientific community

❖ Adverse influence on India's overall scientific productivity

Prescriptions

❖ Do Not Change the Scholarly Communication Practices

❖ Embrace and Promote Open Access

❖ Publish the findings in the publication of choice (national / international);

❖ Also contribute to Open Access Archives

❖ Consider Publishing in Open Access Publications

Open Access

❖Open Access Publications (OAP)

+

❖Open Access Archives (OAA)

Examples of OAP

❖BMJ

❖Indian Academy of Sciences

❖BMC and PLoS

❖High Wire Press: Delayed access

❖Selected papers in a journal OA

Examples of OAA

- Central Archives: arXiv, CogPrints
- PubMed Central, CiteSeer
- Eprints@iisc, Idl@drtc, OpenMed@nic
- Though not an OA Archive, "PubMed"s Open Access Philosophy is Laudable
- Interoperability – the Key

Drivers of OAP and OAA

❖ Rising prices of journals

❖ ARL and SPARC initiatives

❖ Librarians want OA so they can afford

❖ Scientists want OA so they could be read and recognized

❖ People want OA because they pay for the research

Public Support for OA

❖ Budapest Open Access Initiative

❖ US House of Representatives Appropriations Committee [NIH]

❖ UK House of Commons Committee on S&T publications

❖ Similar initiatives in Australia (APSR…), Canada, Scotland

❖ Statement signed by 25 Nobel Laureates in USA

❖ Berlin Statement

❖ Bethesda Statement

Open Access Initiatives

❖Projects

❖Training Programmes

❖Publishing

Open Access Publishing

❖Indian Academy of Sciences

❖INSA

❖IndMed, MedInd, OpenMed

❖MedKnow

❖DOAJ Directory lists over 1200 Journals

• …

Open Access Archiving Training Programmes

❖DRTC

❖NCSI, IISc

❖INFLIBNET

❖IIMK

❖Individual and other isolated efforts…

Advantages of Archiving
(for researchers)

❖ Dissemination

❖ Increased visibility (Google, OAI…)

❖ More visibility leads to more citations

❖ Research impact

❖ Preservation

❖ Control / Monitoring of one's own Publications

Advantages of Archiving
(for institutions)

❖ Pooling the Organization's Intellectual Capital

❖ One Stop Source / Point for the research output of an Institution

❖ Scope for Introspection / Strategies / Action Plan

❖ Generation of reports

❖ Long term preservation

IR Software - Desirables

❖ Key component of an IR is the repository management software

❖ Several software are now available under open source license

❖ Comply with OAI metadata harvesting protocol

❖ Released and publicly available

IR Software - Features

❖ Capture and describe digital material using a workflow

❖ Provide interface for online submission of research material (Intranet)

❖ Provide access to this material over the web (metadata and/or full pub)

❖ Preserve digital material over long period of time

❖ Expose metadata through OAI-PMH protocol
- Default: Unqualified Dublin Core
- Other metadata standards

IR Softwares

❖ ARNO - Tilburg University, The Netherlands

❖ CDSware - CERN, Geneva, Switzerland

❖ DSpace - MIT Libraries and the HP Labs,USA

❖ EPrints - University of Southampton, U.K.

❖ FEDORA - University of Virginia, USA

❖ i-Tor - Netherlands Institute for Scientific Information Services

❖ MyCoRe - University of Duisburg-Essen,Germany

Content Categories

❖ Published material
  - ❖ Ex.: Journal papers (post-prints), book chapters,
  - ❖ conference papers

❖ Unpublished / gray material
  - ❖ Ex.: Pre-prints, working papers, minutes, theses and
  - ❖ dissertations, technical reports, progress/ status
  - ❖ reports, committee reports, course material,
  - ❖ presentations, multimedia material, etc.

❖ Supporting material
  - ❖ Ex.: Data sets, models, simulations

Additional Functionality

❖ Multilingual content/ interface support
  ❖ **Unicode**
❖ Batch import/export
❖ Other interoperability protocols
  ❖ **Z39.50, OpenURL**
❖ Other metadata standards and crosswalks
  ❖ **(e.g. METS, MARC)**
❖ Persistent URL (Identifier)

DSpace

- ❖ An Open Source Software – BSD License
- ❖ MIT Libraries and HP Labs
- ❖ Digital Object / Asset management system
- ❖ Create, search and retrieve digital objects
- ❖ Facilitate preservation of digital objects
- ❖ Allows open access and digital archiving
- ❖ Allows building **Institutional Repositories**

H/W and S/W requirements

❖Let's NOT underestimate!

❖It's a resource intensive platform

❖Based on Java / JSP

❖**UNIX** recommended (Java-based program should run on anything)

❖Open source, built on Apache web server and Tomcat Servlet engine

❖Uses postgreSQL relational database

DSpace Functionality

- Captures
  - Digital content in any format directly from creators (e.g. researchers, authors)
- Describes
  - Descriptive, technical, rights metadata
  - Persistent identifiers
- OAI-PMH version 2.0 compliant
  - Allow metadata creation

Content Categories / Publication Types

- Preprints, Articles
- Postprints
- Technical Reports
- Conference Papers
- Theses/Dissertations
- Working Papers
- Datasets
  - e.g. statistical, geospatial, scientific

File Formats

<u>Supported</u>: fully supports the format

<u>Known</u>: recognizes the format, but cannot guarantee full support

<u>Unsupported</u>: cannot recognize a format; these will be listed as "application/octet-stream", aka Unknown

<u>Known/supported</u>

- TIFF, SGML/XML, PDF

<u>Known/unsupported</u>

- MS Word, PowerPoint
- Lotus 1-2-3, WordPerfect

Information Model

- Communities
  - Departments, Labs, Research Centers, Schools…
- Collections
- Items
- Files (bitstreams)
  - Multiple formats - same content
  - Complex objects – multiple files

Special Features

- 100 % Open Source

- International Acceptance

- Modular, Scalable and Componentized Architecture

- Remote Publishing facility

- CNRI 'Handles' support for Persistent URLs

- OAI-PMH Compliance and Interoperability

- Open URL Compliance

Search Features

- Fielded
- Boolean
- Exact term
- Proximity
- Wild Cards
- Fuzzy
- Range
- Boosting Terms

Strengths of DSpace

- Communities / collections
- Backed up by MIT and HP
- Simple yet powerful documentation
- Strong workflow support
- Handle-based identifier
- Better articulation of preservation strategy
- Default support for qualified DC
- User (E-)Groups, Lists, User Meets …

DSpace Based Archives in India

❖Indian National Science Academy (INSA)

❖National Chemical Laboratory (NCL)

❖ETD@IISc, Indian Institute of Science

❖Indian Institute of Technology (IITD), Delhi

❖INFLIBNET

❖ISI, Bangalore

❖University of Hyderabad

❖National Centre for Radio Astrophysics

❖National Institute of Technology (NIT), Rourkela

❖LDL: Librarians' Digital Library, DRTC

❖Indian Institute of Management Kozhikode (IIMK)

Address http://dspace.iimk.ac.in:8080/

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DSpace@iimk

DSpace at Indian Institute of Management Kozhikode >

Welcome to IIMK's Scholarship Repository DSpace@ii

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Issue Date:	2000
Publisher:	Economic and Political Weekly
Abstract:	This paper provides the overview of the principal developments in the agricultural sector since 1991, since the economic reforms and their likely consequence for the standard of living. The paper

Special articles

Agriculture and Economic Reforms
Growth and Welfare

This paper provids an overview of the principal developments in the agricultural sector since 1991, i e, since the economic reforms, and of their likely consequence for the standard of living. The paper has been conceived more with a view to raising essential questions than providing complete solutions.

PULAPRE BALAKRISHNAN

I
Growth

An examination of the principal

policy of excessive protection for industry hurt Indian agriculture in several ways. It raised the price of industrial products relative to agricultural products which hurt

to be. For a start, it assumes a much greater inter-sectoral flow of resources than it is perhaps wise to do. In particular, it is an argument regarding resource allocation, a

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  - A. Publications and Articles [166]
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▶ **CALTECHLIB** (35 records)
▶ **CCSD: Sciences de l'Information et de la Communication, France** (647 records)

▶ **CNR Bologna Research Library, Italy** (21 records)
▶ **Diálogo Científico utiliza, Brazil** (231 records)
▶ **DLIST, University of Arizona** (512 records)
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▶ **E-LIS: E-Prints in Library and Information Science** (2960 records)
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DSpace Promotion in India

➤ Conducive Environment

➤ Growing Interest in Building IRs
  by the Indian Library / Information /
  Academic Fraternity

➤ Scope for Institutional as well as
  Central Archives

➤ Growing Acceptance of DSpace

➤ Training Programmes

➤ Regional Support Organization (Virtual)

DSpace Training in India

- Training Programmes
  - DRTC, IIMK, INFLIBNET…
- Institutional Repositories Workshop in Chennai (December 2-4, 2005)
  - MALA-CSI – 45 participants (URL)
- E-Publishing Workshop at IIMK (December 12-14, 2005)
  - 15 participants (URL)

Participants of the Chennai Workshop (December 2-4 2005)

Participants of the IIMK Workshop (December 12-14 2005)

DSpace Workshop in Progress

DSpace Training in India…

➢ Forthcoming Training Programmes

- MHRD Institutions (40 Institutions)

- ICMR Institutions (20 Institutions)

- IIMK's E-Publishing Workshop
                          (30 Institutions)

- Programmes Hosted by other
  Organizations/Institutions
  Eg.: MANLIBNET, KLA etc.

DSpace Support Organization for India and Asian Region

➢ Identify a Core Group for Technical Support

➢ Identify an Institute as the DSpace Nodal Center for the Region

➢ Coordinate DSpace Support (Online as well as face-to-face) Actively

➢ Candidates : DRTC, INFLIBNET, IIMK

Acknowledgement

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- APSR, Australia
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- Prof. Subbiah Arunachalam, MSSRF
- Prof. A. Amudhavalli, University of Madras
- DL Team, IIMK

Thank you