

Academic Institutional Repositories in India: Global Visibility for an Institution's Scholarly Communication

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ABSTRACT

Recent development in information and communication and web technologies has changed the landscape of information handling activities. These technologies provide a simple, web-based mechanism for researchers to deposit ('self-archive') and access their research publications via digital repositories. In this paper we describe the genesis, objective, methodology, contents, advantages, software usages, growth and development of institutional repositories in India.

Keywords: Institutional Repositories; Open Access Digital Repositories Academic Institutional Repositories; DSpace; E-Print- Achieve

INTRODUCTION

Development in information and communication and web technologies has changes the way of information production, acquisition and its dissemination. Information revolution and ever increasing demand for exact and consolidated information and old method followed by the libraries are being replaced by such new technologies these days. These technologies revolutionize the library service system by digital information collection, repackaging and online distribution. It is not only simply complementing the need of a conventional library service system, rather it has opened a most convenient, rational and a democratic platform for the academicians to contribute and share their intellectual research output through an institutional repository among the peers within the host organization and the outside without having any kind of hassle from the publishing houses.

ACADEMIC INSTITUTIONAL REPOSITORIES: GENESIS

Disappointment and inability created by the closed access to scholarly literature and the anomalies in journal publishing paradigm in the areas of pricing, access, copyright and host of other monopolies paved the way for open access initiatives. The core essence of open access initiatives is to “make research articles in all academic fields freely available on the internet” notable among these initiatives are the working models of open access journals and institutional repositories. These initiatives were directed to rescue the obliterated research world with the sole aim to provide a complimentary role by reforming the current scholarly communication impasse and to re-assert control over scholarship by the academia and to provide increased and uniform visibility of its researchers. While the open access journal models were experimented in the publisher and organizational level, institutional repositories were experimented by the educational institutions and more notably the universities. Universities with its numerous intellectual activities in its scientific and scholarly arena and the most affected party in the closed and profit oriented publishing scenario grabbed this opportunity to build the repositories and eventually succeeded in its endeavor. With the mandate to bring together and preserve the intellectual output of individual institutions many universities came forward to experiment this new flame. In these experiments, unlike the traditional expectations of resistance from the publishing monopolies, the strong resistance came from within the institution’s faculties, mainly because of its inexperience with the open archiving and open access concepts and the further copyright commitments with the publishers. While the academia feared over the uncertainty of intellectual theft, the administrators feared the exposure of their institution’s intellectual scarcity. With its initial resistance from the conservatives, slowly the academia learnt the benefits of Open Access and many came forward to publish their works in their institution’s servers. This marked the significant success of the Institutional Repository model of scholarly publishing towards creating a world of free and open access scholarly society ^[1].

CHANGING SCENARIO OF SCHOLARLY COMMUNICATION

There are three models in scholarly communication which the world has generally accepted, viz., i) the traditional paper based journal publishing process which has a track record of over 300 years ii) E-publishing on commercial basis and iii) the Open Access mode of publishing. The developments in IT and internet have contributed considerably to shrink the supply chain of information and it is indeed a welcome change. For the information industry, the supply chain extends from the source of information to the point of usage. The traditional journals in paper format took 36-52 weeks for journals to publish. Surprisingly enough, in this total cycle time of 1 year the value addition (generation, review, correction and printing) takes place in not more than 2-3 weeks, indicating a huge wastage of time and money contributed mostly by non-value adding links. In this context, the advent of the E-publishing has really been a boost to the scholarly publishing domain, bringing down the publishing time frame to a remarkable 3-4 weeks. A noticeable departure from the traditional systems here is that the printing is delinked from the publishing process. It is important to note here that the much appreciated and respected scholarly value systems are not compromised even by a single degree in relation to quality checks in the new process. In fact it improves and strengthens them with its inherent advantages of being online with respect to processes and procedures. The third category is the growing sets of open access publishing and scholarly archive initiatives, which are the offshoots of the novel open access movement, catching up globally. Authors are now able to publish their findings at an astoundingly fast pace such as 10-15 minutes or even at a lesser time ^[2]. The relative features and merits of the three systems are illustrated in the following figure (Fig. 1)

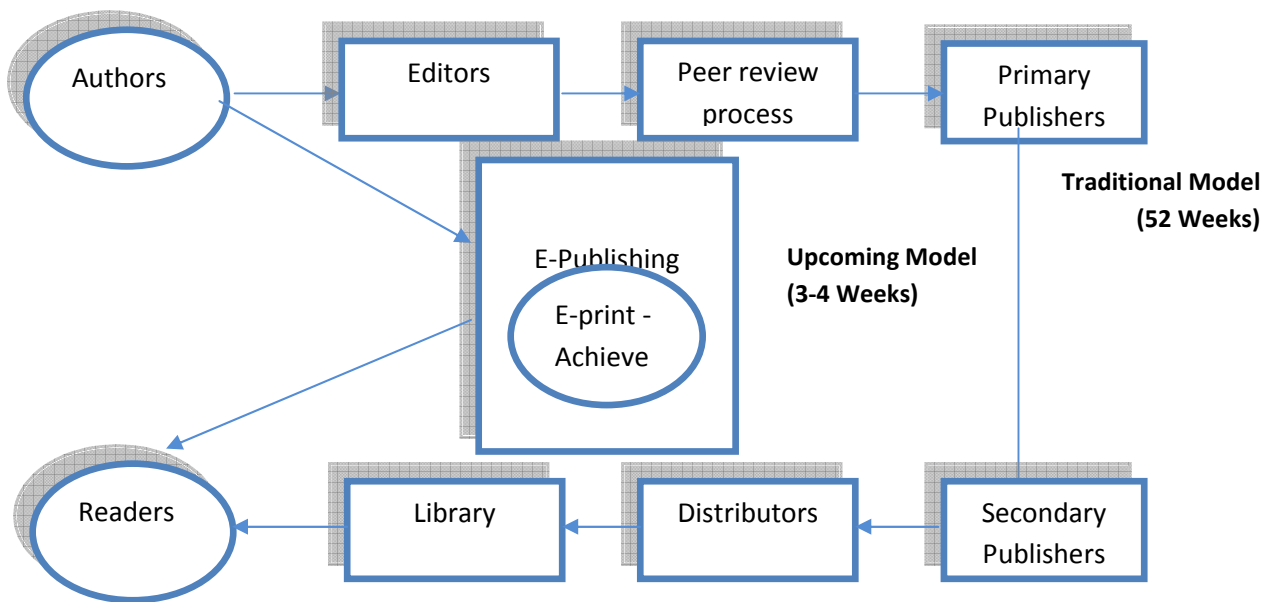


Fig 1- Traditional and Upcoming Scholarly Communication Model

ACADEMIC INSTITUTIONAL REPOSITORIES

Academic institutional repositories consist of formal organized collection of digital contents to provide services to faculty, researchers and administrators who want to archive research, historic and creative materials. The open access and open archives movement, the need for changes in scholarly communication to remove barriers to access and the increasing awareness that universities and research institutions are losing valuable digital and print materials have begun driving the establishment of institutional repositories. While the main purposes of academic institutional repositories are to bring together and preserve the intellectual output of laboratory, department, university or other entity, the incentives and commitments to change the process of scholarly communication have also begun serving as strong motivators. Computers have been ubiquitous on campuses since the late 1980s. Students and faculty are comfortable with the power of online communication. Faculty teachers and researchers want to archive their own materials and have them available on personal or institutional web sites, these articles along with the development of the internet and more powerful search engines, have enabled people to think in practical terms about the establishment of central facilities for storing, archiving, preserving and making scholarly and artistic materials available. Repositories may be limited to one field, one department, one institution or a consortium of several institutions. Collaboration through a consortium reduces costs for each member through resource sharing while expanding access to digital materials ^[3]. For universities repositories are marketing tools communicating capabilities and quality by showcasing faculty and student research, public service projects and other activities and collections.

OBJECTIVES:

The four main objectives for having an academic institutional repository are:

1. To create global visibility for an institution's scholarship;
2. To collect content in a single location;
3. To provide open access to institutional research output by self-archiving it;
4. To store and preserve other institutional digital assets, including unpublished or otherwise easily lost ("grey") literature (e.g., theses or technical reports).

METHODOLOGY:

Academic institutional repositories in India have been selected from the secondary sources, metadata harvesting services, directories etc. The data related to the academic institutional repositories have been collected from their respective institutions' websites and other secondary sources. Case study method is also followed for this study. These data is analyzed based on certain parameters, such as number of documents, software used, growth of collection etc.

CONTENTS OF AN ACADEMIC INSTITUTIONAL REPOSITORY

Repositories may include a variety of information produced by faculty, researchers and administrators of the institution like preprints of articles or research reports submitted for publication. The text of journal articles accepted for publication technical reports, white papers, research data, theses, dissertations, work in progress, important print and image collections, teaching and learning materials and materials documenting the history of the institution ^[4]. An institutional repository may contain work of which copyright is owned by the author or institution or for which permission has been obtained to include the work in the repository.

ADVANTAGES:

Academic institutional repositories have many benefits such as;

1. Organizational support for faculty seeking innovative approaches to research dissemination.
2. Demonstrate the quality, and scientific, social and economic relevance of an institution's research.
3. Increase the institution's visibility, status and public value.
4. Improved research knowledge management.

SOFTWARE FOR ACADEMIC INSTITUTIONAL REPOSITORY

There are many world renowned open source software used to create repositories are EPrints, DSpace, FEDORA, CDSware etc. They are issued either under GNU public license or the BSD license and can be downloaded from their own sites or open source software directories such as SourceForge. Each of the software has a host of features, unique facilities and excellent capabilities, which the users could explore and experiment.

ACADEMIC INSTITUTIONAL REPOSITORIES IN INDIA: GROWTH AND DEVELOPMENT

The growth of records in Indian archives since inception is represented in the following graph taken from the Registry of Open Archives Repositories at the University of Southampton courtesy of Tim Brody. Only those archives whose data are harvestable by Celestial are included. Celestial harvests metadata from repositories supporting the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The number of metadata records may not reflect the number of full-text publicly accessible documents. (Date accessed on; January 02, 2008).

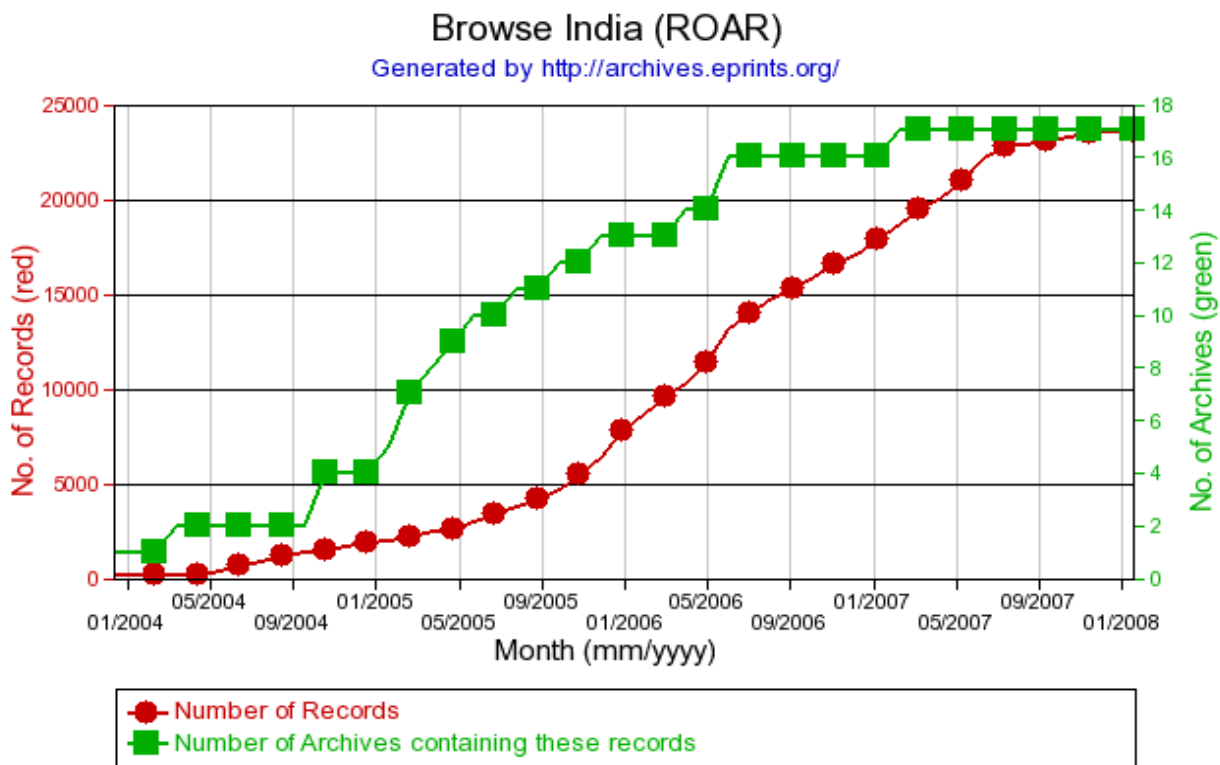


Fig 2 Growth & Development of Repositories in India

Conclusion:

Previous research shows that repository facilitates more timely and open access to research and scholarship and they maximized the potential research impact of achieved publications. It is also playing an important role in preservation and making accessible, academic digital object, datasets and analytical tools that exist outside traditional scholarly communication system. Open access to Indian research is still in its infancy. A few of India's premier institutions, particularly in the science and technology area are providing open access to their research publications. In these repositories access to retrospective material appears to be substantial both in terms of research articles and theses with less access to preprints and current publications.

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Annexure-I

SELECTED ACADEMIC INSTITUTIONAL REPOSITORIES IN INDIA

| Sl. No. | Repositories | Host Institution | URL | Types of Documents | No of Items as on 01.01.2008 | Subjects Coverage | Software used |
|---------|--------------------------------------|---|---|---|------------------------------|--|---------------|
| 1 | Catalysis Database | National Centre for Catalysis Research, Chennai | http://203.199.213.48/ | Publications; Conferences; Theses | 1061 | Chemistry & Chemical Technology | GNU-EPrints |
| 2 | DEC-Repository | Delhi College of Engineering, Delhi | http://202.141.12.109/dspace | Publications; Unpublished; Learning Objects | 326 | Science General; Technology General | Dspace |
| 3 | Digital Library | Indian Statistical Institute, Bangalore | http://library.isibang.ac.in:8080/dspace/ | Publications | 191 | Mathematics and Statistics | Dspace |
| 4 | Digital Repository Service | National Institute of Oceanography, Goa | http://drs.nio.org/drs/index.jsp | Publications; Conferences; Theses | 637 | Science General; Arts and Humanities; Technology General | DSpace |
| 5 | DSpace@ ICFAI Business School | ICFAI, Hyderabad | http://202.131.96.59:8080/dspace/ | Published, Conference Papers, Cases studies | 197 | Mathematics ; Business and Economics; LIS; Management | Dspace |
| 6 | Dspace @IIMK | IIM, Kozhikode | http://dspace.iimk.ac.in/ | Publications; Conferences; Theses; Unpublished | 411 | Business and Economics | Dspace |
| 7 | Dspace @ NCL | National Chemical Laboratory, Pune | http://dspace.ncl.res.in/dspace/ | Theses; Unpublished; Patents | 407 | Chemistry and Chemical Technology | Dspace |
| 8 | Dspace@NCRA | National Centre for Radio Astrophysics | http://ncralib.ncra.tifr.res.in:8080/dspace/ | Publications; Theses; Unpublished; Learning Objects; Multimedia | 243 | Physics and Astronomy | Dspace |
| 9 | DSpace at Vidyanidhi | University of Mysore | http://dspace.vidyanidhi.org.in:8080/dspace/ | Theses | 4858 | Multidisciplinary | Dspace |
| 10 | Dspace@NITR | NIT, Rourkela | http://dspace.nitrkl.ac.in/dspace/ | Publications; Preprints; Conferences | 541 | Chemistry & Chemical Technology; Mechanical Engineering & Materials; Physics and Astronomy | Dspace |

| | | | | | | | |
|----|-------------------------------------|---|---|---|------|--|-------------|
| 11 | Dspace@TU | Thapar University, Patiala | http://dspace.tiet.ac.in/dspace/ | Postprints; Conferences; Theses | 382 | Multidisciplinary | Dspace |
| 12 | DU Eprint Archive | University of Delhi | http://eprints.du.ac.in/ | Preprints; Conferences; Books; Patents | 159 | Multidisciplinary | GNU-EPrints |
| 13 | eGyankosh | IGNOU, New Delhi | http://www.egyankosh.ac.in/ | Learning Objects | 4699 | Multidisciplinary | Dspace |
| 14 | ETD@IISc | Indian Institute of Science, Bangalore | http://etd.ncsi.iisc.ernet.in/ | Theses | 282 | Multidisciplinary | Dspace |
| 15 | EPrints@IITD | Indian Institute of Technology, Delhi | http://eprint.iitd.ac.in/dspace/ | Post -prints; Theses | 2141 | Multidisciplinary | Dspace |
| 16 | DSpace@IIA | Indian Institute of Astrophysics Repository | http://prints.iia.res.in/ | Theses; Publications; Multimedia Objects | 1852 | Physics and Astronomy | DSpace |
| 17 | IIMK Scholarship Repository | IIM Kozhikode | http://eprints.iimk.ac.in/ | | NA | Multidisciplinary | GNU-EPrints |
| 18 | Librarians' Digital Library | Documentation Research and Training Centre, Bangalore | https://drtc.isibang.ac.in/ | Publications; Conferences; Theses; Multimedia | 372 | Library and information science | Dspace |
| 19 | Dspace@MDI | Management Development Institute, Gurgaon | http://dspace.mdi.ac.in/dspace/ | Postprints; Conferences; Books; Special | 225 | Multidisciplinary | Dspace |
| 20 | NAL Institutional Repository | National Aerospace Laboratories | http://nal-ir.nal.res.in/view/ | Publications; Conferences; Theses; Unpublished; Learning Objects; Multimedia; Patents | 2520 | Mathematics and Statistics; Technology General; Mechanical Engineering and Materials | GNU-EPrints |
| 21 | Open MED | NIC, New Delhi | http://openmed.nic.in/ | Publication | 4141 | Medical and Allied Sciences | GNU-EPrints |
| 22 | RRI Digital Repository | Raman Research Institute, Bangalore | http://dspace.rii.res.in/dspace/ | Postprints; Unpublished; Learning Objects | 3248 | Physics and Astronomy | Dspace |
| 23 | Dspace @inflibnet | INFLIBNET, Ahmedabad | http://dspace.inflibnet.ac.in/ | Publications; Conferences; Theses; Unpublished; Learning Objects; Multimedia; Patents | 428 | Multidisciplinary | Dspace |
| 24 | OneWorld South Asia OAI | OneWorld South Asia | http://open.ekdu.niya.net/ | Publications; Conferences; Theses; Unpublished; Books; Patents | 116 | Computers and IT; Library and Information Science | GNU-EPrints |
| 25 | Digital Library | Sri Venkateswara University, Tirupati | http://202.141.117.109:8080/dspace/ | Post prints & Unpublished | 1086 | Multidisciplinary | Dspace |