

Scholarly Communication through Institutional Repositories

Mallikarjun Dora

Librarian

Koustuv Engineering College, Bhubaneswar

Bulu Maharana

Lecturer

P. G. Department of Library and Information Science
Sambalpur University, Jyoti Vihar, Orissa

An ideal world of scholarly communication is all research should be freely available
- Steven Harnad

Abstract: This paper introduces the concept of Institutional Repository and explores how Institutional Repositories can integrate value added services to support the scholarly communication and digital research.

Key words: Institutional Repository; Digital Libraries; Digital archives

1. Introduction

The institutional repository is currently a hot topic within the libraries and open access communities. In the past few years, there has been a sudden increase of interest taken place in institutional repositories development and deployment. Now there have been a number of conferences, symposiums are organized all over the world on institutional repositories, as many as discussion groups, blogs and wikis also are being dedicated to this new technology. The result is the emergence of large number of open access repositories. According to ROAR (Registry of Open Access Repositories) there are more than 7, 00, 0000 journal articles, theses, databases, conferences proceedings, etc. are available online^[1]. More than 900 repositories are already registered on ROAR and the number will continuously increase in future. Few repositories have set example with the number of records they are having. Pubmed had 9,58,495 records following with CiteSeerPSU (7,16,772)^[2], and arXiv (4,38,685)^[3] till date 15th September, 2007. So these records revealing the truth that in future scholarly communication, Institutional Repositories will become an indispensable component of information and knowledge sharing. But observation reveals that most of the institutions are giving their considerable attention towards the development and implementation of institutional repositories and the usefulness which is a most importance factor was sheer neglected by organizations. There are many repositories mere empty or only with a few dead collection which no one coming to see except the staff of the repositories.

2. Institutional Repositories:

An institutional repository (IR) is a digital archive of an academic institution's intellectual output. It is an open access model which collects, centralizes, preserves and makes accessible a range of research material which is created by the faculty, research staff, and student of the institution. Its content may vary to pre-prints, peer reviewed articles, monographs, teaching materials, databases and other ancillary research materials, conference papers, electronics thesis and dissertations etc.

Clifford Lynch (2003), the Director of the Coalition for Networked Information, defines an institutional repository as:

"a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution." [4]

Raym Crow (2002) defined an IR as a:

"...digital archive of intellectual product created by the faculty, research staff, and students of an institution and accessible to end users both within and outside of the institution, with few if any barriers to access. The content... is institutionally defined, scholarly, cumulative and perpetual, and open and interoperable." [5]

In the above definitions, Institutional Repositories has been defined as electronic archives of scholarly output, which can offer an institution a range of value added services to its academic community. Institutional repositories will generate an environment of participation, awareness and knowledge sharing.

3. Essential Characteristics of an Institutional Repository

An institutional repository in fact is a virtual collection consisting of single or multiple types of intellectual products created in digital form. The Scholarly Publishing and Academic Resources Coalition (SPARC) position paper (Crow, 2002) illustrates four essential characteristics that an institutional repository should have^[5]:

- **Institutionally defined;**- Unlike a subject repository, the IR captures only the intellectual property of the host institution.
- **Scholarly content;**- Content may be purely scholarly or may comprise administrative, teaching, and research materials, both published and unpublished of the host institution.
- **Cumulative and perpetual;** - Once items are submitted they should not be withdrawn. This carries a long term obligation on the host institution to preserve IR content.
- **Interoperability and open access;**- it is open and interoperable- a primary goal of an IR is to disseminate the institution's intellectual product. As a minimum this requires the creation of metadata which can be 'harvested' by appropriate software. In practical terms content should be Open Achieves initiative protocol for metadata harvesting (OAI-PMH) compliant.

4. Importance of Institutional Repositories

The institutions of higher education and research organization are experiencing the necessity of managing their education, research and resources in a more effective way by making their research output easily available through their institutional repositories. The benefit of institutional repositories to institutions and individual are numerous. The importance of the IR has been described in brief in the following lines.

- Fulfills a university's mission to stimulate, encourage and disseminate its scholarly work and to enable to compile a complete record of its intellectual output;

- Ensures the long-term preservation of an institution's academic output;
- Increase the public service value of the institution;
- It can also use as a marketing tool for increase visibility and prestige of the respective organizations and also will be helpful to attract new funding sources, well qualified potential faculty and students;
- For the individuals, the Institutional Repository acts as a central archive for their research work, representing a complete list of their research over the years and because it is open access, it increases the dissemination and impact of their work, which all time a researcher want. Researcher also benefited due to increase of citation of their research paper.
- While cost of establishing a institutional repositories is modest as compared to other library initiatives;
- An institution can mandate self archive across all subject area;
- Gives a huge credential to the institutions to link their repositories to others which are in the platform of OAI-PMH.

5. Skill set Required for Library Professionals for IR Management

For development and management of successful institutional repositories, the library professionals need to have proficiency in managerial and technical skills. Managerial skills like developing institutional model, taking strategic decision for future development, manage day to day activities, such as checking collection, authenticity of collection, taking back up of the content, survey of usages of the institutional repositories. Besides the managerial skills, the library professional should be technically familiar with web based software's system like UNIX, LINUX, SQL Server, MySQL, SGML, XML, PHP, JAVA, PERL also proficient in major repository softwares like Dspace, Eprints, Fedora etc. The administrator of the IR, when dealing with the content requires a fair knowledge on copyright and Intellectual Property Right (IPR) to ensure that they are practicing with the prescribed guidelines.

6. Value Added Products and Services through Institutional Repositories

Institutional repositories should not be looked like an isolated island where only few journal articles and thesis collections of an institution are stored. Moving beyond its traditional function of storing and preserving scholarly materials Institution should try to make the IR content-rich and accessible, it can work for new format of scholarly communication and digital research. In an Institutional Repository, the users can expect varied intellectual products which are not only limited to journal articles, theses and dissertations, but also include varied collection starting from conference papers, study materials, teaching materials, educational videos, presentations, student and faculty portfolio and discussion groups which will update the users of the institution and outside. Incorporating the above mentioned services may make the institutional repositories more information fabric. The services already in institutional repositories are:

6.1 Institutional Output

The Journals and other scholarly publications of the institution can be added in IR services. The non scholarly materials of institutional importance materials like Rules and Regulations of the

institution, video recording of events celebrated, poster works, and technical reports also can add in to IR.

6.2 Teaching and Learning Materials

Teaching and learning can be supported by links to IR content from Virtual Learning Environments (VLEs) and the library catalogue. Lecture Notes, handouts, presentations, study and exercise guide, audio video material, online test, laboratory guide and images are all suitable content. Course materials can be shared, re-purposed, and re-used. So far many institutions have already added learning and teaching materials to make centralized repositories for their institutional need. In the US, MIT's Open Courseware initiative aims to make MIT course materials available. Like Blog, Wiki, web 2.0 services can also include in to repositories.

6.3 Create Discussion Group /Mailing List

Discussion group, mailing list are the useful tool for institutional repositories development. Organization can create a mailing list or discussion group so that people can discuss and suggest regarding institutional repositories and its services. Repository developer can keep touch with others and take suggestion through this mailing group. People participation on mailing list can generate more interest on repositories development.

6.4 Cross-searching of Internals and Externals Repositories Collections

IR managers can also explore ways to make effective link between their IRs and other University IR information system that manage and capture digital intellectual output. There are few good example in context to create a cross searching platform, one of them is IIT, Delhi, India has created SEED under the Public Knowledge Project (PKP) where user can search four repositories in one platform (NIT, Rourkela, IIT Delhi, IISc, Bangalore, and Dept of Earthquake Engineering)<http://eprint.iitd.ac.in/seed>

6.5 Alert Services

When the research paper has been incorporated to institutional repositories an alert email every month has been sent to researcher informing about the statistics of his/ her research paper including how many download, citations its get, so that its boost the researcher to deposit more research paper in repositories.

6.6 Linking to Faculty/ Researchers Home Pages and Blogs

A link to Faculty, Researcher and student home page, blog, wherever available, facilitates to know about him/her can create a added value to the institutional repositories services as well as Its generate more interest for the stakeholder and user to hit into the institutional repositories.

6.7 Elaborate and Publish Use Statistics of Documents

Impact indicators such as hit counts on papers, download statistics and citation analyses, These are the few bibliographical indicators which institution can implement in their respective institutional repositories, so that it will generate the stakeholder interest on institutional repositories. A monthly or bimonthly report card can be sent to the respective author regarding their article can be give good reason to the researcher questions why he should choose open access platform like institutional repositories services are like

Conclusion

IR is in a critical point of its development, it's facing a greatest problem today on quantity of content. Content is obviously a deciding measure for the success of an IRs. The main driver in compelling IRs into a useful tool in the regard to content will be the faculty and research scholars, and what they want is exposure. According to a survey carried by Swan, Alma and Brown, Sheridan in the article " Author and Open Access publishing" find out that 90% of the author respondent that they are publishing research because to communicate result to peer and 80% of them also emphasis that for advance career and gain personal prestige. IRs should keep author in first place in design repositories services and marketing its services. IR development team should build all important relationships with faculty, student group and other academic professional to get the content. The IRs staffs should try to encourage the authors with showing them how they will benefit with archiving their research in IRs. It's also needed to convince them that they can achieve all that without any problem in compare to traditional publishing model.

References

1. Crow, R., 2002. The case for institutional repositories: a SPARC position paper. <http://www.arl.org/sparc/IR/IR_Final_Release_102.pdf>, [accessed 26.05.05].
2. Lynch, C.A. 2003. Institutional Repositories: Essential Infrastructure for Scholarship in the Digital Age. *ARL Bimonthly Report* (2003) 1-7. <<http://www.arl.org/newsltr/226/ir.html>>.
3. Harnad, S. 1994. Scholarly Journals at the Crossroads: A Subversive Proposal for Electronic Publishing. An Internet Discussion about Scientific and Scholarly Journals and Their Future. Chapter 1. The Subversive Proposal. Association of Research Libraries, Washington D.C. (1994) <<http://www.arl.org/scomm/subversive/sub01.html>>.
4. Swan, Alma and Brown, Sheridan. 2004. Authors and open access publishing. *Learned Publishing*, 2004, 17(3), 219-224. www.keyperspectives.co.uk/OpenAccessArchive/Authors_and_open_access_publishing.pdf
5. Davis, Philip M and Connolly Matthew J. L. 2007. Institutional Repositories Evaluating the reason of non use of Cornell University's installation of Dspace. *D-Lib Magazine* Vol.9 (2007)
6. Foster, Nancy Fried and Gibbons, Susan. 2005. Understanding faculty to improve content requirements for institutional repositories. *D-Lib Magazine* Vol.11 (2005).
7. Mackie, Morag. 2004. Filling institutional repositories: Practical strategies from the DAEDALUS project. *ARIADNE Magazine*. 39(2004).
8. Lynch, Clifford A. and Lippincott, Joan K. 2005. Institutional Repositories deployment in the United States as of early 2005. *D-Lib Magazine*. Vol.11 (2005).
9. Drake, Miriam A. 2004. Institutional Repositories: Hidden Treasure. *Information Today Inc.* Vol. 12(2004). <http://www.infotoday.com/searcher/may04/drake.shtml>

10. Devakos, Rea. 2006. Towards user responsive institutional repositories: a case study. *Library Hi Tech*. Vol. 24(2006).
11. Chang, Sheau-Hwang. 2003. Institutional repositories: the library's new role. *OCLC systems and services*. Vol 19(2003)
12. Westell, Mary. 2006. Institutional repositories: proposed indicators of success. *Library Hi Tech* . Vol 24(2006).
13. ROAR (Registry for Open Access Repositories)
14. www.Eprints.org

Notes

^[1] <http://roar.eprints.org/index.php>

^[2] Citeseer.IST. Scientific Literature Digital Library. <http://citeseer.ist.psu.edu/>

^[3] <http://www.arxiv.org>

^[4] <http://www.arl.org/newsltr/226/ir.html>

^[5] http://www.arl.org/sparc/IR/IR_Final_Release_102.pdf.