
BUILDING INSTITUTIONAL REPOSITORY (IR) : ROLE OF THE LIBRARY

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Abstract

Institutional repositories represent an historical and tangible embodiment of the intellectual life and output of an institution. These are now clearly and broadly being recognized as essential infrastructure for scholarship in the digital world. The paper seeks to provide an overview of Institutional repositories its benefits to the institutions and also describes the role of library in building an Institutional repository.

Keywords: Institutional Repository/ Benefits of IR/ Open Archives Initiative/ E-print, DSpace,

1. Institutional

Repository (IR): The internet has become an essential medium for information exchange. It enables the principal functions of Scholarly communications to be unbundled, giving rise to new ways of sharing knowledge and new opportunities for institutions to use their intellectual capital as a more effective indicator of academic quality. Scholarly communications are being restructured for the digital environment. Open access publishing and the related activities of self archiving and creating institutional repositories have taken great steps forward in the last year or two. Researchers and academicians increasingly publish their research results, mainly preprints in subject specific and web based archives for wider and faster dissemination. Technological advancement, shrinking budgets, and sky rocking journal subscription costs have stimulated the rapid growth of self archiving services.

Crow has made a substantial case for IRs in a position paper for Scholarly Publishing and Academic Resources Coalition (SPARC) (<http://www.arl.org/sparc/>), which defines them as: "...digital collections capturing and preserving the intellectual output of a single or multi university community." Crow states that: "... content may include preprints and other works-in-progress, peer-reviewed articles, monographs, enduring teaching materials, data sets and other ancillary research material, conference papers, electronic theses and dissertations, and gray literature.[1]

IR is a new concept for collecting, managing, disseminating, and preserving scholarly works created in digital form by faculty and students in individual universities and colleges. An individual institutional repository can offer a set of services including

digital content submission, organization, access, distribution, and preservation. As Clifford A. Lynch, Executive Director of the Coalition for Networked Information, explained:

“... an effective institutional repository of necessity represents a collaboration among librarians, information technologies, archives and records managers, faculty, and university administrators and policymakers.” [2]

According to Lynch university-based institutional repository is 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. In a university setting, an IR may provide a place for faculty work, students’ theses and dissertations, e-journals, datasets and so on.

As described by an Wikipedia Encyclopedia An Institutional Repository is an online locus for collecting and preserving in digital form the intellectual output of an institution, particularly a research institution. For a university, this would include materials such as research journal articles before (preprints) and after (post prints) undergoing peer review, and digital versions of theses and dissertations, but it might also include other digital assets generated by normal academic life, such as administrative documents, course notes, or learning objects.[3]

2. 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 illustrates four essential characteristics that an institutional repository should have: [1]

- “Institutionally defined”;
- “Scholarly content”;
- “Cumulative and perpetual”; and
- “Interoperability and open access.”

The two main objectives for having an institutional repository are:

- to provide open access to institutional research output by self-archiving it;
- to store and preserve other institutional digital assets, including unpublished or otherwise easily lost (“grey”) literature (e.g., theses or technical reports).

3. Why Institutional Repositories?

The rationale for universities and colleges implementing institutional repositories rests on two interrelated propositions—one that supports a broad, pan-institutional effort and another that offers direct and immediate benefits to each institution. [4] It provides

an opportunity to the academic community to posting research online, most often on personal web sites, and also on departmental sites or in disciplinary repositories. This demonstrates a desire for expanded exposure of, and access to, their work.

4. Literature review

An article “Institutional repositories, self archiving and role of the libraries” written by (Nicholas Joint, 2006) based on the opinion collected by the practitioner insights into their cataloguing practice and into digital preservation issues, highlights some unresolved questions about the practical implication and management of institutional repositories. The major findings reveal that the metadata creation and the formulation of digital preservation policies for institutional repositories require significant resources. The author suggests that the libraries and librarians should involve in giving input to the metadata and digital reservation activities inherent to build up institutional repositories. They should be placed to more attention to such tasks. [5]

Library staff and authors need to be trained to prepare documents in an acceptable format and to submit content to the repository using a simple interface. Some libraries, like the University of Glasgow, emphasize a fully dedicated service for their faculty members, where library’s staff manages the whole submission process from metadata entry, file conversion to uploading (Ashworth, 2004) [6]

In terms of defining the collocation, librarians need to establish content management policies. Librarians are experienced in selecting, describing, storing, and managing information content. They can negotiate with users on content priorities such as what metadata to store and present, should teaching materials be included, and how to handle successive drafts of the same paper (Genoni, 2004). Genoni also suggests that librarians should evaluate the performance of the collection and make decisions relating to access, conservation, and preservation. [7]

Ideally, voluntary submissions from researchers will seed an IR and sustain its growth. The real world is always very different. Researchers may support the project in principle, but very few take action voluntarily. Librarians thus have to take a proactive role in garnering content for their repositories and work towards a sustainable approach (Mackie, 2004)[8]

IRs, open access, and self-archiving are unfamiliar concepts to most researchers. Advocacy then becomes a crucial aspect of any IR project. At the University of Melbourne, librarians visited departments, maintained a promotional web site, and showed impressive usage statistics on individual papers. They also published in their university newspaper and held related seminars (Horwood, Sullivan, Young, & Garner, 2004) [9]

In summary, the general consensus is that the central challenge for developing an IR lies not in its technical implementation, but in instilling a change of mindset among researchers, to make self-archiving an integral part of their academic life (Nixon, 2002).

Sheau-Hwang Chang (2003) in his article "Institutional Repositories: the libraries new role" emphasizes the need to recruit librarians who possess digital collection management and Open Archive Information System (OAIS) management skills to implement institutional repositories. He also stresses that the success of IR would require careful thought-out plans and the intellectual leadership from the faculty and the library working in partnership. [10]

5. Benefits of institutional repositories

The main primary advantages appear to include:

For users

- Expansion of the range of knowledge that can be shared.
- Opportunities to simplify and extend dissemination.

For institutions:

- Enabling of IPR to be exploited more effectively at institutional level.
- Leverage of existing investment in information and content management systems.
- The highlighting of the quality of intellectual capital.

For all:

- Opportunities for new forms of scholarly communication.
- Flexible ways to develop existing scholarly communications.

6. Drawbacks of institutional repositories

They need top-down and bottom-up support. They affect the balance of institutional power as some departments proceed faster than others.

- They rely on unproven methods for long term digital preservation.
- They may need quick wins to sustain institutional support.
- Initial costs may be high as contributors perceive high risks and duplicate effort to reduce them. (Yeats, 2003)[11]

An institutional repository can fail over time if the institution stops funding, management failure or incompetence, or technical problems. Any of these failures can result in the disruption of access, or worse, total and permanent loss of material stored in the institutional repository.

The benefits of institutional repositories as observed by Prosser to institutions and individuals are numerous. Most importantly, they ensure the long-term preservation of an institution's academic output. They can also increase its visibility and prestige,

and act as an advertisement to attract funding sources, potential new faculty and students. For the individual, they provide a central archive of a researcher's work, they increase its dissemination and so, potentially, its impact on the research community, and they can act as a full CV as all the researcher's output is gathered in one place.(Westell, 2006) [12]

IRs provide an institution with a mechanism to showcase its scholarly output, centralize and introduce efficiencies to the stewardship of digital documents of value, and respond proactively to the escalating crisis in scholarly communication (Foster & Gibbons, January 2005) [13]

7. Software's available for developing Institutional Repositories.

The most popular IR software platforms are DSpace, ePrints.org, Fedora

7.1 DSpace

Dspace developed by MIT Libraries in collaboration with Hewlett-Packard, to establish an institutional repository for MIT has been released in November 2002 in Cambridge, Massachusetts. Most recently version 1.4 was released in July 2006. DSpace is an open source software package which provides the tools for management of digital assets, and is commonly used as the basis for an institutional repository. It is also intended as a platform for Digital preservation activities. Since its release in 2002, as a product of the HP-MIT Alliance, it has been installed and is in production at over 100 institutions around the globe from large universities to small higher education colleges and research centres (<http://en.wikipedia.org/wiki/DSpace>)

7.2 Eprints

E print is free, open source software for generating an "Open Access" (OA) "Institutional Repository" (IR) that is compliant with the "Open Archives Initiative Protocol for Metadata Harvesting"(OAI-PMH)

Eprints was created in 2000 as a direct outcome of the 1999 Santa Fe meeting that launched what eventually became the OAI-PMH. The Eprints software was enthusiastically received, became the first and still the most widely used free OA IR software, and has since inspired many emulations.(<http://en.wikipedia.org/wiki/Eprints>)

7.3 Fedora

Fedora (or Flexible Extensible Digital Object Repository Architecture) Fedora is developed jointly by Cornell University Information Science and the University of Virginia Library. The Fedora Project is currently supported by generous grants from the Andrew W. Mellon Foundation. Fedora is a digital asset management (DAM) architecture, upon which many types of digital library systems might be built. For an institution seeking a powerful,

well architected repository suitable for very large (1,00,000) plus collections, and that have the technical expertise to support it, Fedora is a possible solution. (http://en.wikipedia.org/wiki/Fedora_%28software%29)

8. Open access may refer to one of the following

- Open access, an access-provision practice that can take two forms: open access publication, such as Hybrid open access journals, and open access self-archiving.
- Open Access, a common database initiative in Electronic design automation
- Open Communication, Open access to communications infrastructure and services.
- Open access to pharmaceuticals under development
- or free, unrestricted, or non-discriminatory access to anything under discussion. (http://www.en.wikipedia.org/wiki/Open_Access)

9. The Open Archives Initiative

The Open Archives Initiative (OAI) is an attempt to build a “low-barrier interoperability framework” for digital archives (institutional repositories) containing digital content (Digital libraries). It allows people (Service Providers) to harvest metadata (from Data Providers). This metadata is used to provide “value-added services”, often by combining different data sets. The OAI technical infrastructure, specified in the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), currently in version 2.0, defines a mechanism for data providers to expose their metadata. (http://www.en.wikipedia.org/wiki/Open_Archives_Initiative)

Self-archiving was first explicitly proposed as a universal practice by Stevan Harnad in his 1994 posting “Subversive Proposal”, although computer scientists had been doing it spontaneously anonymous FTP archives since at least the ‘80’s (see Cite Seer) and physicists since the early ’90s on the web. Self-archiving involves depositing a free copy of a digital document on the World Wide Web in order to provide open access to it. The term usually refers to the self-archiving of peer reviewed research journal and conference articles as well as theses, deposited in the author’s own Open Archives Initiative-compliant institutional repository or open archive for the purpose of maximizing its accessibility, usage and citation impact. http://www.en.wikipedia.org/wiki/Self_Archiving

10. Role of the library in building IR

Considering the growing benefits of institutional repositories it is conceivable that establishing IR will be the next significant movement in the library landscape. As a result the libraries will have a many roles to play to build up a successful IR’s.

Libraries have always been engaged in managing their institutional collections, accumulated abundant expertise in collection assessment, organization and development. The libraries have a key role to play in building IR's. Library roles are becoming more deeply engaged with the broader vision of the institution by being more intertwined and interdependent with other stakeholders, such as the university administration, faculty, and other departments. Most of the faculty do not have the time to stay abreast of changes in information technology and will consider self archiving as extra administrative work. Lougee [14] describes this role as diffuse, meaning libraries are becoming a more integrated part of the community by infusing library expertise into research, teaching, learning, and service functions. The library's level of relevance and visibility to faculty and the institution will increase as librarians support faculty in their digital publishing activities. He further states that the library can involve in developing IR's and serve as a collaborator in research, teaching and learning.

- Educate faculty on the importance of open access for global sharing of scholarship with enhanced professional visibility for the author and the institution;
- negotiating with publishers on behalf of faculty or encouraging faculty to retain the right to publish in IRs as well as in scholarly publications; and
- depositing materials in IRs on behalf of researchers and undertaking file formatting and conversion.
- IR's allow libraries to provide direct access to scholarly materials instead of through the systems of serials' publishers and vendors.
- The biggest challenge of the IR appears to be generating contents for it. Libraries should take necessary steps for promoting IR resources. The librarians have to become marketing specialists to popularize IR.
- According to The Scholarly Publishing and Academic Resources Coalition (SPARC) managing and participating in evolving scholarly communication process is a new challenge for libraries. Committing to an institutional repository requires libraries to carefully consider the implications of moving beyond a custodial role model to actively contributing to the evolution of scholarly communication, a paradigm shift from the traditional role to a more practical and enriched institutional landscape.(Crow,2002)

The following Figure depicts the materials the libraries can deposit into their Institutional Repository.(Bell, Foster, & Gibbons, 2005)[15]

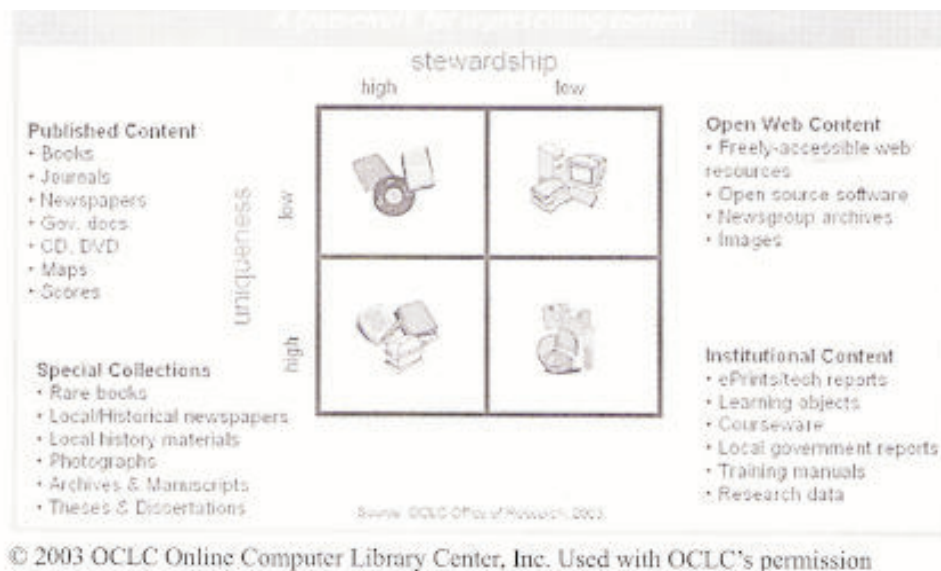


Figure 1 Collections Grid: A framework for representing content

11. Conclusion

The idea of “institutional repositories” will definitely present many opportunities and challenges to libraries. Successful Institutional repositories would elevate the libraries visibility and importance not only at the institutional level, but also at the national and global levels. These are the key to the ability of institutions to respond to future needs for more dynamic cross boundary communications services. It is clear that the institutional repository is a very powerful idea that can serve as an engine of change for our institutions of higher education, and more broadly for the scholarly enterprises that they support. If properly developed, it advances a surprising number of goals, and addresses an impressive range of needs. In India the University Grant Commission has to take initiation to build up Institutional Repositories at higher education level. University libraries and the librarian has to play a major role in developing successful repositories for their institutions and thus permanently changing the landscape of scholarly communication.

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