Institutional Repository With Special Reference to Initiatives of Mizoram University

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Abstract

Academic libraries have special responsibilities and challenges to face in preparing for and participating in the transition. It is an accepted fact that information technology has the potential to bring substantial improvements to higher education and scholarly communication. To achieve such improvements, the willingness and zeal of the library professionals to take new responsibilities is crucial. Over the past several decades, the economic, market and technological foundations that sustained the symbiotic publisher-library market relationship have begun to shift. The paper discusses the concept of Institutional Repository (IR), its benefits, various types of software, trends with special reference to the initiatives of Mizoram University.

Keywords: Institutional Repositories, DSpace, Mizoram University

1. Introduction

Advances in information technology have affected libraries and is likely to ultimately transform many aspects of information exchange, including the role of information services provide by traditional libraries. Academic libraries have special responsibilities and challenges to face in preparing for and participating in the transition. It is an accepted fact that information technology has the potential to bring substantial improvements to higher education and scholarly communication. To achieve such improvements, the willingness and zeal of the library professionals to take new responsibilities is crucial.

Over the past several decades, the economic, market and technological foundations that sustained the symbiotic publisher-library market relationship have begun to shift. Several coinciding factors are forcing change in the structure of scholarly journal publishing (Crow, 2002):

- ❖ Technological change has driven the demand for broader access to research and for more robust digital presentation
- ❖ Significant increases in the overall volume of research strained the capacity of the print publishing model
- ❖ Increasing dissatisfaction with the traditional print and electronic journal price, market models, rapidly escalating prices and relatively flat library budgets
- ❖ Increasing uncertainty over who will handle the preservation archiving of digital scholarly research material.

One of the problems faced by scholars and researchers is lack of access to the current literature in their field. There exists a gross uneven availability of information too. The open access

movement which aims to provide free availability of scholarly literature has become popular as it improves scholarly communication.

2. Institutional Repository (IR)

As a new strategy for accelerating changes in electronic scholarly communication within universities, institutional repositories emerged during the second half of the year 2002, notably with the launch of DSpace at MIT. The term was coined by Scholarly Publishing for Academic Resources Coalition (SPARC). This development is advantageous to scholars and researchers, especially to those in developing areas.

2.1 Definition of Institutional Repository

An Institutional Repository is a relativity new model for storing research output of a given university or research institute (Shearer, 2003). It is defined by SPARC as digital collections capturing and preserving the intellectual output of a single or multi-university community (Crow, 2002). A 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. It is most essentially an organizational commitment to the stewardship of these digital materials, including long term preservation as well as organization and access or distribution (Lynch, 2003). An Institutional Repository is also defined as a web-based database (repository) of scholarly material; institutionally defined (as opposed to a subject-based repository); cumulative and perpetual (a collection of record); open and interoperable (e.g. using OAI – compliant software); and thus collects, stores and disseminates (is part of the process of scholarly communication). In addition, most would include long-term preservation of digital materials as a key function of Institutional Repositories (Ware, 2004).

2.2 Repository Management Software

The key component of an Institutional Repository is the repository management software. Several software are available under open source license. Table-1 shows the list IR software:

Sl. No.	IR Software	URL Link
1	DSpace (Digital Space)	http://www.dspace.org
2	ePrints	http://software.eprints.org
3	CDSware (CERN Document Server Software)	http://cdsware.cern.ch
4	ARNO (Academic Research in the Netherlands Online)	http://www.uba.uva.nl/arno
5	Fedora digital object repos-itory management system	http://www.fedora.info
6	i-Tor (Tools and techno logies for Open Repositories)	http://www.i-tor.org/en/toor
7	MyCoRe	http://www.mycore.de/ engl/index.html
8	GSDL (Green Stone Digital Library)	http://www.greenstone.org
9	LOCKSS (Lots of Copies Keep Stuff Safe)	www.lockss.org
10	CLOCKSS	www.clockss.org

Table 1: List of IR software and their link

2.3 Benefits

The main benefits of Institutional Repositories are:

- The intellectual output of an institution is available in one place, and the intellectual achievement of an institution is reflected

- ❖ It gives prestige to the institution
- ❖ Scholarly contents are preserved
- ❖ The ability to judge contributor's publishing performance may boost quality which would be beneficial for the academic community and the host institution.
- ❖ It indicates that library moves forward to contribute to the evolution of scholarly communication
- ❖ It increases the level of visibility and relevance of the library within the institution
- ❖ It allows different parts of the campus community to be tied together via the library
- ❖ Dissemination of and access to scholarly contents without financial barriers
- ❖ Articles freely available are cited more often than their print counterparts as they are more visible.
- ❖ It helps in avoiding unnecessary duplication of work.
- ❖ Speed and ease of access promote rapid and wider dissemination and use of the resources; and save time as well.

2.4 Trends

Institutional Repositories become popular and nowadays, many institutions have their own repositories using open source software. The first effort to gather comparative international data about institutional repository deployment in a systematic fashion was conducted in 13 nations as of mid 2005; it was found that there was a great diversity in IRs (Westrienen and Lynch 2005):

According to the survey, the total number of academic institutional repositories in each country differs widely, while all the universities in Germany, Norway and the Netherlands have Institutional Repositories and even more than one in some institutions, the percentage was as low as 5 in Finland. There were strong differences in the type of objects too. In Norway, 90% of the current records were for books and theses; in France 80% were articles, the other category for Germany (25%) were textual proceedings and the 40% other for the Netherlands were mainly research reports. The types of objects in the questionnaire included article, books, theses, video, music, course material and other types of materials.

Regarding disciplinary coverage, strong differences also exist. Australia and Italy focused on humanities and social sciences (49% and 55% respectively) while UK focused on natural science (25%) and engineering (41%). As for software used, DSpace was used in 11 of the 13 countries surveyed and ePrints by at least 7 of the 13 countries. The survey showed that Institutional Repositories were becoming well established as campus infrastructure components.

In India also, Institutional Repositories have become increasingly popular, those active on the internet are (Chauhan, 2008):

- ❖ Digital Repository of IIT, Bombay
- ❖ DRS @ NIO – National Institute of Oceanography
- ❖ DSpace @ NITR – National Institute of Technology, Rourkela
- ❖ DSpace @ MDI – Management Development Institute, Gurgaon

- ❖ DSpace @ IIMK – Indian Institute of Management, Kozhikode
- ❖ DSpace at National Chemical Laboratory, Pune
- ❖ DSpace at INFLIBNET centre, Ahmedabad
- ❖ Shodhganga at INFLIBNET centre
- ❖ ePrints @ SVNIT – Sardar Vallabhai National Institute of Technology
- ❖ eGyanKosh at IGNOU
- ❖ ePrints @ IIT, Delhi – Indian Institute of Technology
- ❖ ePrints @ IISc – Indian Institute of Science, Bangalore
- ❖ ePrints @ Catalysis – National Centre for Catalysis Research (NCCR)
- ❖ ePrints @ SBTMKU – School of Biotechnology, Madurai Kamraj University, Madurai
- ❖ Indian Institute of Astrophysics (IIAP) Repository, Bangalore
- ❖ Institutional Repository of National Aerospace Laboratories (NAL)
- ❖ Kautilya Digital Repository of IGIDR (Indira Gandhi Institute of Development Research, Mumbai)
- ❖ NISCAIR Online Periodicals Repository
- ❖ OpenMED @ NIC – Medical and Allied Sciences
- ❖ RRI Digital Repository (Raman Research Institute Digital Repository)

3. Initiative of Mizoram University

Mizoram University was established on 2nd July 2001. It started functioning with six academic departments which rapidly grows to as many as 28 now. Even though there were only a few intellectual output of the university in the library, it was considered important to start setting up of an Institutional Repository for holding the intellectual output of the university. The following activities were carried out:

3.1 Procurement of high-end Scanner

For scanning the documents, a high-end book scanner i.e Minolta PS 7000 was procured. It needs to be big enough for a book to be spread over it, with high speed and reliability.

3.2 Identification of Documents

Documents to be included in the IR were identified. They were the university's own publications like Ordinance, Act & Statutes, Annual Reports, Theses and Articles of the faculty.

3.3 Identification of Software

DSpace was identified for hosting the repository, and Nova PDF Software and Foxit Phantom Software (freeware) were also identified for conversion of the document into PDF.

3.4 Training of Staff

A staff was trained in use of the book scanner and other necessary skills.

3.5 Obtaining Permission from the Scholars

Permission was sought from the scholars whose submission of theses was preceded by UGC's direction. A request letter, a permission form and a stamped, self-addressed envelope were sent to each scholar by hand. While many readily agreed to give permission, some of them were difficult to persuade.

3.6 Digitization of Documents

3.6.1 Documents Received with Soft Copies

Some documents were submitted in hard and soft copies. Out of these only 5% (approx) submitted in PDF, 2% (approx) in PageMaker and the rest i.e. 93% (approx) were in MS word format, which were converted into PDF. 95% (approx) of the theses were split chapter-wise. While converting the documents into PDF, the split chapters were also merged into one.

3.6.2 Documents Received in Hard Copies Only

The documents were scanned with the help of a high-end scanner, initially in OCR (Optical Character Recognition) mode. Even though there are advantages like

- Text can be edited easily
- Size of the file is not increased as only the characters were captured, this was found to be a bit problematic due to the following:
- The characters were missed now and then
- Sometimes, the characters were not recognized as they were, e.g **'o'** may be recognized as **'a'**, **'b'** may be recognized as **'h'**, and **', "** (single and double inverted comas) were sometimes recognized as the other (i.e. single as double or double as single); sometimes, they were shifted to the wrong place

'Tables' were usually not recognized as they were, e.g. the lines would be broken or shifted elsewhere; sometimes they were missed altogether.

- The process was slow as there were many things to be edited due to a number of failures in character recognition

Because of the mentioned disadvantages, scanning in image mode had been opted. The difference is that the output is in the form of image. The advantages are:

- The process is quicker than that of OCR
- Time spend for editing is short as only the spots have to be cleaned Meanwhile, it has the following shortcomings too:
- Text cannot be edited
- Image editing skill is required due to the fact that all shades in the document appear as black and whatever spot exist in the document appear as black.
- The size of the file is increased as image of the whole page is captured. This needs to be reduced again (outside the text).

3.6.3 Uploading

Uploading the digitized contents to the Institutional Repository, this was hosted on the intranet at the initial stage for use within the campus. The following have been uploaded so far (May – Dec 2011):

- Ordinance
- Act & Statutes
- Annual Reports 2001 – 2009 (6nos.)
- Theses – 20 (15 more theses are expected to be uploaded by January 2012)

4. Problems Faced

- Obtaining permission from old scholars was time consuming. Effort was made to approach them personally, some scholars needed to be

approached a number of times because of reluctance or unavailability. Besides, some scholars already migrated to some other towns and some people's address had changed

❖ Reluctance of teachers to submit their articles. No one submitted even after issuing two circulars and verbal requests

❖ Difficulty of detailing at least one staff to fully dedicate time for the programme

❖ Even in some of those submitted with soft copies, tables, pictures, diagrams were stored in separate files which have to be inserted at the right places by comparing with the printed form. This was time consuming.

5. Conclusion

Way back in the beginning of the year 2006, the need to digitize important and heavily used materials was felt and as a result, the book scanner was ordered. Concentration on Library Automation Programme, etc. did not permit giving attention to digitization programme for a few years. Institutional Repositories have become increasingly well established as campus infrastructure components even though there may be diversity. While being beneficial for the scholarly community, the added benefit for libraries is that the level of visibility and relevance of libraries is increased within the institution and the campus community can be tied together via library. The available resources for IR may be inadequate in the beginning, but would gradually increase in size and value. It was the right decision to get started with a handful. With technological changes, libraries increasingly move into a new role as part of the creation and dissemination process; libraries can become a diffuse agent within the scholarly community.

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