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EVALUATION OF INSTITUTIONAL REPOSITORIES: A CASE STUDY

By

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Roll No. 2010DLIM010

A Field Work Report
submitted towards partial fulfilment of the requirements of
Post Graduate Diploma in Digital Library and Information Management
(PGDLIM)

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Sir Dorabji Tata Memorial Library

Tata Institute of Social Sciences

MUMBAI

SUMMARY

Name of Student	Shijith Kumar C
Enrolment number	2010DLIM010
Title of the field attachment	Evaluation of institutional repositories: A case study.
Organization in which field attachment has been conducted	All India Institute of Speech & Hearing, Mysore
Period of Field Attachment	August 1 to 21st August 2011
Name of field mentor	Dr. M.Chandrasekhar, Reader, Department of Library & Information Science, University of Mysore
Name of faculty supervisor	Dr. Satish Kanamadi, Deputy Librarian, Tata Institute of Social Sciences, Mumbai
Abstract: This field work report is based upon an evaluation study of digital repository of All India Institute of Speech & Hearing, Mysore. The study points out the pitfalls in the current system and make recommendations for improving the system.	
Keywords: Digitization, Platform, Eprints, Speech and Hearing Repository.	

Declaration

I hereby declare that this field work report titled "Evaluation of institutional repositories: A case study" is the outcome of my own study carried out under the guidance of field supervisor Dr. M.Chandrasekhar, Reader, Department of Library & Information Science, University of Mysore and faculty supervisor Dr. Satish Kanamadi, Deputy Librarian, Tata Institute of Social Sciences, Mumbai.I further declare that this work is original and has not been submitted for any diploma or the title of any other University.

Mysore

30-09-11

Shijith Kumar C

Roll No. 2010DLIM010

Certificate

I certify that the field work report on "Evaluation of institutional repositories: A case study" submitted by Mr. Shijith Kumar C, in partial fulfilment of the requirements for "Post Graduate Diploma in Digital Library and Information Management" (PGDLIM), Tata Institute of Social Sciences, Mumbai in the year 2010-2011 is his own work carried out under my guidance and is worthy of examination.

30-09-11

Dr. M.Chandrasekhar,
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Acknowledgement

I am grateful to my field supervisor Dr. M.Chandrasekhar, Reader, Department of Library & Information Science, University of Mysore,Mysore and to my faculty supervisor Dr.Satish Kanamadi, Deputy Librarian, SDTM Library, Tata Institute of Social Sciences Mumbai, who played crucial role in completing this field work study and compile the report in more efficient way with valuable suggestions.

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My thanks are also due to all my classmates of PGDLIM for their help and cooperation throughout the work of this project.

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Chapter 1

INTRODUCTION

1.1 Institutional Repositories

The digital revolution has affected how scholars create, communicate and preserve new knowledge. While the technologies exist for scholars to manage their own digital content, faculty are typically best at creating, not preserving, new knowledge. As a consequence, most faculty host their digital objects on a personal website, where their long-term preservation is not secure. If institutions truly value the content created by their faculty, they must take some responsibility for the long-term duration of this content.

Based on the number of institutional repositories established over the past few years, the IR service appears to be quite attractive and compelling to institutions. 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.

An institutional repository (IR) is an electronic system that captures, preserves, and provides access to the digital work products of a community .In a university setting, an IR may provide a place for faculty work, student theses and dissertations, e-journals, datasets and so on. Whatever the particular focus of the university IR, to be successful it must be filled with scholarly work of enduring value that is searched and cited.

The number of institutional repositories in academic libraries has been growing substantially in recent years. The availability of open-source IR systems has encouraged a proliferation of IRs worldwide, particularly among academic and research institutions.

Clifford Lynch, 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.

According to Crow, digital collections capturing and preserving the intellectual output of a single or multiple-university community. Their role, he suggested, should be twofold. First: to "serve as tangible indicators of an institution's quality and to demonstrate the scientific, societal, and economic relevance of its research activities, thus increasing the institution's visibility, status, and public value"; Second: to provide tools to assist universities re-shape the scholarly communication process.

Institutional repositories are digital collections of the outputs created within a university or research institution. Whilst the purposes of repositories may vary (for example, some universities have teaching/learning repositories for educational materials), in most cases they are established to provide Open Access to the institution's research output.= Alma Swan

Repositories adhere to an internationally-agreed set of technical standards that means that they expose he metadata (the bibliographic details such as author names, institutional affiliation, date, titles of the article, abstract and so forth) of each item in their contents on the Web in the same basic way. In other words, they are 'interoperable'. This common protocol to which they all adhere is called the open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The contents of all repositories are then indexed by Web search engines such as Google and Google Scholar, creating online Open Access databases of freely-available global research. As the level of self-archiving (the process by which authors deposit their work in repositories) grows the Open Access corpus will represent an increasingly large proportion of

the scholarly literature.There are currently almost 1300 repositories around the world. Over the past three years the number has been growing at an average rate of one per day.

There are two opposing philosophical camps among those who work to justify institutional repositories: one that views IRs as *competition* for traditional publishing, the other that sees IRs as a *supplement* to traditional publishing.In 1994, Stevan Harnad wrote his Subversive Proposal for Electronic Publishing, in which he argued that all academics should make their research articles publicly available through open repositories. This collective effort would help to reduce the power wielded by publishers who have built economic barriers to limit scholars' access to the literature.

Similarly, Raym Crow, writing the position paper for the American Research Libraries, argues that increasing access to the literature is but one goal of institutional repositories . He posits that, by taking at least some control over the dissemination of scholarship, repositories can increase competition in the marketplace and reduce the monopoly power of journals. Crow believes that there is no reason that institutional repositories cannot provide all of the functions of traditional publishing (registration, certification, dissemination, and archiving), in effect taking the role of scholarly publishing out of the hands of third-party publishers and placing it back in the hands of the academy.

In opposition, Clifford Lynch views IRs as *supplements*, not primary venues for scholarly publishing, and warns against assuming the role of certification in the scholarly publishing process. He argues that "the institutional repository isn't a journal, or a collection of journals, and should not be managed like one" . Lynch fears that viewing IRs as instruments for undermining the economics of the current publishing system discounts their importance and reduces their ability to promote a broader spectrum of scholarly communication. Institutional repositories may better serve to disseminate the so-called "grey

literature": documents such as pamphlets, bulletins, visual conference presentations, and other materials that are typically ignored by traditional publishers.

1.2 Types of Contents in Institutional Repositories

The major types of contents in institutional repositories are the following.

i)Peer-reviewed journal articles and conference proceedings

The primary type of content in repositories is the peer-reviewed journal literature. A collection of the journal articles published from an institution, provided in Open Access through the repository, gives the institution's research programme worldwide visibility and increases its impact. Individual authors also enjoy the same increased visibility for their work and concomitant impact.

ii)Research data

Now that research data are increasingly created in digital form, repositories are also places where authors can deposit the data that underpin their final articles. More and more research funders are requiring their grant-holders to make their data Open Access, once they have themselves analysed and published their findings from the data. This is in order that other researchers can use the data to verify results, to compare with their own data or to re-use in some way to generate new data and knowledge.Datasets may be of many types – spreadsheets, photographs, audio files, video files, representations of artwork, diagrams, charts and so on. They may even be 'complex objects', that is, combinations of several types of data, such as a numerical dataset recording weather patterns with accompanying satellite images.

iii) Monographs and books

Most institutional repositories also contain books or book chapters. Books are often written for monetary gain (royalties on sales) and in such cases authors may be reluctant to deposit

them for free in a repository. In these cases it is still important for the book to be deposited, with the metadata (title, author,synopsis, publisher details, etc) on display, but the text may be 'hidden' from viewers. Having the metadata visible means that the book is counted in the institution's assessment procedures, its existence is known to would-be readers and it can be located by Web search engines. The evidence is accumulating,however, to show that when the entire content of a book is visible in a repository, sales of the book frequently rise. This is because the visibility in the repository is raising awareness of the book and promoting it to an audience which is then likely to buy the book if it seems relevant to their work.

iv) Other content types

As well as the types of content described above, institutional repositories frequently contain theses, dissertations and other research-related outputs such as presentations.

1.3 Importance of Institutional Repositories

Repositories will form a permanent and critically important part of the scholarly communication process. Their first role is to provide the Open Access literature. Additionally, services may be added to repositories to provide extra functionality. For example, a usage-reporting service gives authors and the institution information on how the content of the repository is being used. A search service may help users find specific items more easily. A service that organises content in specific ways may help authors, for example, to download a list of articles into their CV, or aid institutions in assessing the institution's research programme or for reporting data to governments or for other statutory requirements. We may be looking forward to a time when repositories play a formal role in the publishing process. Repositories can collect articles from the institution's authors when they are ready for peer review and a peer review service will collect them from the repository for processing. There are already signs of these things happening. A few scholarly society publishers encourage authors to notify them when a paper has been deposited in a repository and is ready to be peer

reviewed and published. Some university presses are working hand-in-hand with the repository when publishing books by institutional authors.

Need for institutional repositories

Repositories were created for a variety of reasons, and are often closely associated with increasing costs of traditional publishing and the development of the open access movement. Scholarly peer-reviewed journals are crucial to the work of university faculty and other researchers. Unfortunately, the costs to universities and researchers for subscribing and maintaining access to these journals have become increasingly expensive, and as a result, access to them has become more restricted. Cost is not only an attribute of traditional scholarly publishing, but also of online and electronic publishing. Digital publishers closely control the costs to access their collections, and increasingly place restrictions on universities accessing them. The open access movement began largely as a result of the escalating costs and restrictions within academic publishing.

The OAIS (Open Archival Information System) reference model is a conceptual framework for a generic archival system which is committed to a dual role of preserving and providing access to information. OAIS is a network of people and institutions who have committed to the responsibility of preserving information and making it available to a designated community. Open access dramatically increases the number of potential users who would not otherwise have access to electronic journals. Furthermore, studies have found that open access articles have a greater research impact than those that are not freely available electronically.

Institutional repositories play an extremely important role within the open access movement as they are a primary conduit for providing open access to their scholarly content. Crow explains that institutional repositories "provide a critical component in reformatting the system of scholarly communication – a component that expands access to research, reasserts

control over scholarship by the academy, increases competition, and reduces the monopoly of power journals, and brings economic relief and heightened relevance to the institutions and libraries that support them. Other important roles for institutional repositories include simplifying dissemination, highlighting the quality of an institution's intellectual capital, and developing new forms of scholarly communication.

Advantages of Institutional Repositories

According to Alma Swan a repository has the following purposes and benefits for an institution:

- Opens up the outputs of the university to the world
- Maximises the visibility and impact of these outputs as a result
- Showcases the university to interested constituencies – prospective staff, prospective students and other
- Collects and curates digital outputs
- Manages and measures research and teaching activities
- Provides a workspace for work-in-progress, and for collaborative or large-scale projects
- Enables and encourages interdisciplinary approaches to research
- Facilitates the development and sharing of digital teaching materials and aids
- Supports student endeavours, providing access to theses and dissertations and a location for the development of e-portfolios

1.4 Statement of the problem

The present research is an attempt to evaluate the existing digital repository of All India Institute of Speech and Hearing, Mysore. The title of the study is 'Evaluation of institutional repositories: A case study of All India Institute of Speech & Hearing'

1.5 Objectives of the Study

The aim of the study is to evaluate the existing digital repository of the institute and suggest ways to improve it.The specific objectives are:

1. To evaluate the functionalities of the existing digital repository of the institute.
2. To identify the pitfalls, if any in the existing repository.
3. To suggest ways to capture and preserve the intellectual assets of the institute in a better way
4. To propose a re-designed repository

1.6 Significance of the study

Institutional repositories play an extremely important role in an organizational set up as they are a primary conduit for providing open access to the institution's scholarly content .While much emphasis has been placed on building institutional repositories, there has been little work on evaluating their outputs.

1.7 Study Methodology

The study will evaluate the entire aspects of the current repository. It will also assess the successfully running repositories all over the world and suggest measures to improve the functioning of the existing system.

1.8 Scope and Limitations of the Study

The scope of the study is limited to the digital repository of a single organization, namely, All India Institute of Speech & Hearing, Mysore. The major limitations of the study is that it doesn't assess the repository from user's point of view. The study has been conducted during a short period of time.

Chapter 2

BACKGROUND OF THE STUDY

2.1 The Institute

Communication disorders are difficulties involving speech, language and or hearing, which have been accepted as a major public health issue as they compromise early childhood development, restrict vocational attainment and attenuate the economic well-being of the society.

The All India Institute of Speech and Hearing (AIISH), Mysore, is the foremost organization in the country, mandated to help and support people with communication disorders. Founded in 1965 as an autonomous institute under the Ministry of Health and Family Welfare, Government of India, AIISH has been successfully carrying out its activities for the last 46 years. In pursuit of its mission of ensuring effective communication by one and all, the institute (a) generates and prepares knowledgeable and skilled practitioners in Speech - Language Pathology and Audiology and allied fields, who can provide state-of-the art, client-centered service in multiple settings,(b) conducts both basic and applied research in areas related to communication disorders and disseminates the findings among the local, national and international audiences, (c) provides affordable, accessible and high-quality speech, language, and hearing clinical services to the needy ones, and (d) develops, implements and evaluates education and outreach programs to address the prevention, intervention and control of communication disorders.

Started as an institute to train the postgraduate students in Speech and Hearing, today AIISH has grown into the largest institute in the country offering various diploma, graduate, postgraduate, postgraduate diploma, doctoral and post doctoral programs in the field, in addition to rendering clinical services to thousands of persons with

communication disorders from all over the country and conducting multi-faceted research to find solutions to the challenges of communication disorders. All these activities are spearheaded by the experts working in 11 departments of the Institute, namely Audiology, Centre for Rehabilitation and Education through Distance Mode, Clinical Psychology, Clinical Services, Electronics, Otorhinolaryngology, Prevention of Communication Disorders, Special Education, Speech-Language Pathology, Speech-Language Sciences, and Material Development.

The institute has been recognised as a Centre of Excellence in the area of deafness by World Health Organization, as a Centre of Advanced Research by University Grants Commission, as a Science & Technology Institute by Department of Science and Technology, Government of India and as the nodal centre for implementation of prevention and control of deafness by Ministry of Health & Family Welfare, Government of India.

2.2 Library and Information Centre

The Library and Information Centre of the All India Institute of Speech and Hearing, Mysore, has been in existence since the establishment of the Institute on 9th August 1965. The centre is housed in a four-storeyed building with an area of 24000 square metre. The ground floor houses the Book Section, Back Volumes of Journals, and a browsing center, the first floor houses a section for display of new books, Current Journals and Reference books, thesis, dissertations, independent projects and research projects, the second floor houses the digital library workstation and two spacious reading halls and the 3rd floor houses the computer browsing center. The building and the furniture are specially designed to meet functional, as well as the aesthetic requirements. The building is surrounded by beautiful lush green lawn and well-maintained rose garden and ornamental plants.

The library is well equipped with conventional resources, as well as technology based information services. The AIISH library and information center is a specialist documentation center for the rehabilitation professionals in general and professionals in the area of communication disorders, in particular. The center has received more than eleven hundred books and journals on speech and hearing on gratis from Wendell Johnson library, Iowa, USA. The Library also got support through Vocational Rehabilitation Administration (VRA) project started at the institute in 1967 The library has been using the Book Magic an Integrated Library Management software package with all the modules of library housekeeping operations. All the holdings of the library have automated access and users can search the library database by using OPAC.

2.3 Information Resources

The Library and Information Centre (LIC) of the institute houses a rich collection of information resources pertaining to the field of Speech and Hearing and allied areas of Clinical Psychology, Otorhinolaryngology and Special Education. It has both print and electronic formats of documents and caters to the needs of students, research scholars, teachers and practitioners, not only of the institute but also across the country. Library and Information Centre web portal acts as a gateway to a diverse kinds of electronic resources pertaining to the field like E-journals, E-books and online databases. In addition, the LIC has been maintaining an online digital repository of research works carried out in the institute and making them available free of cost to the professional community worldwide.

a) Print Books: The library procures all the books published by publishers all over the world pertaining to the field of Speech and Hearing. Presently it has more than 15,000 books exclusively on speech and hearing in addition to the 3000 books on allied areas like clinical Psychology , Special education and Otorhinolaryngology.

b) Print Journals: It subscribes to 64 print journals pertaining to Speech language pathology, Speech Language Sciences, Speech Communications, Speech processing, Audiology, Special Education, Clinical Psychology and Otorhinolaryngology.

c) Bound Volumes of Periodicals: The library has a good collection of bound volumes of periodicals pertaining to speech and hearing in addition to that of allied areas like clinical Psychology , Special education and Otorhinolaryngology.

d) Theses and Dissertations : These constitute another valuable resource of library and information centre and include PhD theses,master's dissertations and other reports of various project works sponsored by the national and international agencies like Department of Science & Technology,Government of India, Rehabilitation Council of India and World Health Organization.

e) E-Books: The library procured 138 E-books pertaining to the filed of Speech and Hearing and allied areas published by 4 publishers namely Taylor and Francis, Oxford University Press, Wiley Interscience and Elsevier.

f) E-Journals: The library has subscribed 63 E-journals. Among them, 48 are available in print format also.. In addition to the subscribed E-journals, library is getting access to more than 2500 biomedical E-journals as it is a part of Electronic Resources in Medicine consortium, launched by Director General of Health Services, Ministry of Health and family Welfare, Government of India.

g) Bibliographic databases: The library subscribes two bibliographic databases namely i) ComDisDome an indexing and abstracting tool covering the communications disorders literature, with focus on speech-language pathology and audiology. Quickly identify and connect to reliable information from multiple sources , including journal articles and books, along with access to profiles of researchers working in this area and (ii) Linguistics and Language Behavior Abstracts (LLBA).This database abstracts

and indexes the international literature in linguistics and related disciplines in the language sciences. The database covers all aspects of the study of language including phonetics, phonology, morphology, syntax and semantics. Documents indexed include journal articles, book reviews, books, book chapters, dissertations and working papers.

h) CD/DVD-ROMs: The library has a good collection of both Comapct Discs and Digital Video Discs. Most of these resources are part of the text book collection in the library.

i) Microfilms: The library has a rare collection of Speech and hearing related microfilms. The total numbers of microfilms are more than 200.

j) Digital Repository: The Library is maintaining an online digital repository of more than 1000 research works carried out in the institute and making them available free of cost to the professional community worldwide.

2.3 Information Services

1.Traditional Information Services

The major traditional information services provided by the LIC are the following:

a) Reference Service

The Library and Information professionals provided assistance to hundreds of users in matters like locating required information, evaluating the information resources and usage of resources. They answer various reference queries in person, via e-mail and over phone.

b) Book Lending Service

The book lending is the most sought after service of LIC. On an average, 200 books were issued daily to the users.

c) Reprographic Service

This is one of the most heavily used library service. Thousands of library materials

are being reproduced daily on payment basis under this service. Only the library materials are permitted to copy and reproducing complete document was prohibited as it violated Copy right Act.

2.Electronic Information Services

LIC provide two categories of electronic information services to its users. These are: (1) Internet Service (II) Web portal based services.

1.1.Internet Service

LIC strengthened the provision of Internet service to the member community by adding more number of computers with Internet access. Totally there are 44 computers with Internet access in the LIC.

1.2 Web portal based Information Services

Library and Information Centre provided a variety of information services through its web portal available at **www.aiish.ac.in**. Some of them are listed below:

a. Access to Digital Research Repository

The institutional digital repository developed and maintained by the LIC continued to raise the visibility of the research work done at AIISH to scholars around the world. There are nearly one lakh pages of research reports in the repository.

b. Web Online Public Access Catalogue Service

The bibliographic details of over 17,000 books and bound volumes of periodicals were made available over the web. Thus the users all over the world can search the information resources of the institute using search terms like author, title, publisher, and keywords.

c. Access to E-Journals, E-books and Online Databases

All the subscribed E-journals, E-books and Online databases have hyperlinked through the web portal. In addition to the subscribed resources, the portal also provides access to high quality information resources pertaining to Communication Disorders which are available free of cost over the web like **'REHABDATA'** a leading literature database on disability and rehabilitation published by National Rehabilitation Information Center, USA.

Chapter 3

EVALUATION OF THE EXISTING SYSTEM

3.1 Introduction

The existing digital repository of the institute have been launched in 2008 with an aim of long-term storage and archiving of our valuable research outputs in the field of speech and hearing. It also aims at easy dissemination of these resources to the rest of the world.

The repository is made up of Equest , a customized software solution for digitized contents of the libraries (Thesis, Projects, Research Papers, and Publications). It provides search and access to digitized projects, such as thesis, research paper, publications etc. Can host and manage e-contents on Internet along with online payment facility. The e-contents files could be in various formats like word, text, HTML, PDF etc. Can be implemented on LAN / Intranet, Users can submit their thesis, Research Papers, Projects online. The user can save an article to his or her e-library and can also email the articles to others. PDF files can be downloaded. Search facility includes Basic & Advanced. Basic includes 3 parameters and Advanced have 12 parameters. Users can search on the entire database of the software, Searches can be performed on 16 different search fields based on time frame, subject, departments, publication type, and publication dates. Equest is complied or compliant? Or Equest complies with international metadata and interoperability standards: MARC-21, MARC-XML, MODS, DUBLIN CORE.

The repository is named as 'Digital Library' and is available on the Library and Information Centre portal at www.aiish.ac.in

3.2 Evaluation of the System

An evaluation of the existing system identified the following:

1. Platform

The present repository is built using proprietary digital library software titled 'Equest' designed by an Indian software company, Total IT Solutions Private Limited, Pune. Equest is a customized software solution for digitized contents of the libraries .This software helps in managing e-contents. Publishers / Institutes can also use this software to host & manage their e-contents on Internet.

2. Contents

The major contents available on the repository are the following:

a) PhD theses: The repository houses 56 PhD theses pertaining to the field of Speech and Hearing done by the staff and research scholars of the institute under the able guidance of the experienced faculty members of the institute.

b) Dissertations: This is the second category of digitised resources in the repository. These are the research works carried out by the Post Graduate students of various courses in Speech and Hearing and allied sciences. The total numbers of digitised dissertations in the collection are 767 records.

c) Department Projects: These are the funded research project reports carried out by the faculty and staff of the institute. The funded organizations are either the institute itself or external national and international organizations like Rehabilitation Council of India, Department of Science & Technology, Government of India and World Health Organization.

d) Independent Projects: Independent projects are the research works done by the first year Post Graduate students of previous batches.

No other types of materials have been included in the repository.

3. Number of Digital Materials

The repository contains only 1300 reports under the categories of PhD theses, dissertations, department projects and Independent Projects.

4. Content Recruitment Methods

The only content recruitment method followed by the repository is the uploading of materials by library staff.

5. Search Features

- The repository offers both simple and advanced search facilities. The Boolean operators AND,NOT,OR based searches. It is possible to browse the repository by author,title, Author, Guide, Subject, Resource type and Year.

6. Conversion of Print Matter into Digital Format

The print matter to be incorporated into the repository are converted to digital format by the library staff using a high capacity Epson Scanner.

7. File Formats

The repository files are in portable document format. All the materials to be deposited in the repository are submitted either directly as PDF or other file formats like MS WORD which will be converted to PDF by library staff.

8.Access Details

Anybody can access the contents of the repository from anywhere in the world through the repository interface at www.aiish.ac.in. No restriction has been made in this regard. Full-text access is provided to all the resources in the collection.

9.Submission of materials to the repository

Submission materials to the repository have been done by the library staff only. There is no provision for the faculty members and researchers to submit their work by themselves on to the repository.

10.Policy Formulation Regarding Digital repository

No policy has been formulated with regard to the institutional repository so far.

11.User friendliness

The existing system lacks user friendliness as there is no help link or user manual.

Chapter 4

RECOMMENDATIONS AND CONCLUDING REMARKS

Introduction

In this chapter recommendations have been made to improve the existing digital repository of the institute. The chapter also proposes a new redesigned digital repository on Eprints, a well known digital library software used worldwide.

A. Recommendations to Improve the Existing Repository

Based upon the evaluation of the existing system, the following recommendations have been made to enhance the usage of vital speech and hearing digital repository of the institute.

1. Policy Formulation

The institute has to draft policies have to be drafted regarding the following areas of repository.

- Defining collections
- Intellectual property
- Determination of what is acceptable content
- Determining who is authorized to make contributions to the repository
- Acceptable file formats
- Metadata formats and authorized metadata creators

2. Content-recruitment methods

The availability of the repository may be publicised in the campus through notice boards, official communications, institute newsletters and other means of communications. The best content recruitment methods that suit the activities of the institute may be identified. Harvesting of publicly available materials may also be considered. While the faculty members

and staff may be permitted to upload their research works directly, the submission of post graduate and PhD theses may be done through the faculty supervisors.

3. **Requirements Related to Submission of materials**

The following requirements address the entire process of authorized users submitting learning objects into the repository. The submission process should involve logging in to the repository with an authorized username and password, creating metadata records for items submitted, uploading the files associated with a learning object into the repository, and workflow related considerations.

4. Inclusion of Varied Types of Contents

The repository may incorporate various other materials like class lecture and guest lectures in audio and video files, study materials, question papers, syllabus and other learning aids.

5. Number of Materials in the Repository

Presently the repository has only 1200 files of digital materials in the repository. The number may be enhanced by incorporating all the educational and research materials brought by the institute in digital format.

6. Acceptable File Formats

Digital materials in the following formats may be accepted for inclusion in the repository.

a. Portable Document Format(PDF)

b. Joint Photographic Experts Group (JPEG)

c. Tagged Image File Format (TIFF)

d. Graphics Interchange Format (GIF)

e. eXtensible Mark-up Language(XML)

f. Microsoft Word

g. Microsoft Excel

h. Rich text

i. Microsoft PowerPoint

j. Postscript

k. Moving Picture Experts Group (MPEG)

l. Plain text ANSI X3.4/ECMA–6/US-ASCII (7-bit)

m. Plain text UTF–8 (Unicode)

n. Plain text ISO 8859–x (8-bit)

o. Plain text (all other encodings, including, but not limited to, ISO 646, national variants)

p. Portable Network Graphics (PNG)

q. TeX

7. Requirements Related to End User Access to Learning Objects

The following requirements address end user interaction with the repository. All users should be able to search and browse the repository and at the least see the metadata records associated with the learning objects, even if not all users will have access to the files associated with the learning objects.

• Search full-text and metadata elements

• Browse by various access points or categories

• View simple and complete metadata records

• Access learning objects as allowed by user account authorization

8.Encouragement and advocacy

The usage of the repository may be encouraged by organising various user awareness and training programs.

9. Enhanced User friendliness

There should be help functionality in the repository directing users on how to use and navigate through the repository.

10. Search facility

There should be a simple search interface which has a link to the advanced search facility.

Presently both simple and advanced search facilities are combined.

11. Repository Administration Requirements

The following requirements address various administrative tasks and responsibilities for managing the repository.

- Manage user accounts
- Set authorizations and permissions
- Implement organization structure for learning objects
- Customize submission workflow
- Implement metadata scheme
- Customize metadata input
- Administer and manage items in repository

B. Proposed Redesigned Repository

1.Software Selection

An evaluation of available open source software platforms were conducted in order to make an informed decision on the most appropriate platform which will fulfil in the needs of the institute. The following software were reviewed:

1. DSpace
2. ePrints
3. Fedora
4. Greenstone

It is decided to use Eprints 3.3.6, a free and open source software package for building open access repositories that are compliant with the Open Archives Initiative Protocol for Metadata Harvesting. It shares many of the features commonly seen in Document Management

systems, but is primarily used for institutional repositories and scientific journals. EPrints has been developed at the University Of Southampton School Of Electronics and Computer Science and released under a GPL license.

As the first professional software platform for building high quality OAI-compliant repositories, EPrints is already established as the easiest and fastest way to set up repositories of open access research literature, scientific data, theses, reports and multimedia. EPrints is a major leap forward in functionality, giving even more control and flexibility to repository managers, depositors, researchers and technical administrators.

The following features of Eprints3 have been considered for selecting the software as the platform for the proposed repository.

a.Importing and Exporting Data

There are numerous format options for exporting search results including Dublin Core and METS as well as bibliographic software formats like Reference Manager. These are implemented using plug-ins described as 'kind of cool', written by Southampton, but to which other users can also contribute.Another 'cool' feature is latitude and longitude fields which can be used to export data to Google Maps and look like fun to play with. In the context of scholarly publication, the potential uses still need thinking through. The demonstration showed locations on a Google Map using co-ordinates added into some sample records, but this was hardly a serious application. There may be scope for using the feature to show the location of field research sites, assuming the depositors/mediators are prepared to provide the necessary metadata. It is an indicator though of the way in which EP3 is evolving to provide hooks into other services and to provide new opportunities to work with the material deposited. In summary, there have been some interesting improvements to the search and browse interfaces, but they are, as yet, of unproven usefulness.

b. Deposit and Workflow

There have been major changes to the deposit process, in order to make it more user-friendly and to encourage further take-up of self-deposition. This is one of the key changes in EP3 and the one which could potentially have the greatest impact on those institutions which are using a mediated deposit model. When implemented in conjunction with the autocompletion feature, it provides an easier interface for self-depositors.The first major change is the introduction of a set of tabs for the various deposit stages:

Type -> Upload -> Details -> Subjects -> Deposit

These feel similar to the 'sausage bar' used in DSpace's deposit process . The tabs are effective because they make it clear from the outset what stages are involved. In principle they also show depositors where they are in the process, although the stages do not necessarily have to be completed in the order given, and repositories can customise the sequence. There is error-checking for obligatory data before final deposition.

c. Autocompletion

There was much play made of various fields having autocompletion. The default ones are journal, author and ISSN. Autocompletion uses JavaScript to monitor what is being typed and queries the relevant EPrints MySQL tables. This means that as more data is added to the archive, the more useful autocompletion becomes. In theory, the autocompletion features could be made to query an external database (such as Zetoc or SHERPA/RoMEO), but network connections are likely to be too slow for this to be effective. One exception might be using LDAP on a local network to validate 'creators'. The autocompletion for journals in the demonstration archive was linked to Southampton's version of the RoMEO database. Matched journals were displayed along with some RoMEO data and Southampton's version of the

RoMEO colour codes. Another approach could be to create pre-populated local databases of researchers and staff, journals, etc., from such sources as the institution's publications database, so that they can then be used for look-up and validation. In the case of journals, there is an opportunity for external databases to offer a facility for checking titles in bulk and returning appropriate data for storage locally. This could be done through an API and/or something new such as a Web form where a list of titles could be copy-and pasted for processing. Such a facility would also have other uses. The autocompletion feature, for authors' names in particular, raises an interesting authority issue. Should the repository use the authority name for an author or his or her name as cited in the published paper or research output? Perhaps there is scope for a separate author authority field? Autocompletion can also be combined with conditional workflows to provide a customised self-deposit process.To select a subject or academic unit, the user is no longer presented with one massive hierarchical list. Instead, only the top levels in the hierarchy are displayed, which can be expanded/contracted to show the lower/higher levels. This approach is similar to the way folders can be expanded and contracted in Windows Explorer. It can also be applied to other EPrints pages where little-used fields can be collapsed out of the way until needed. What is more, these views can be made conditional. So, for instance, for a depositor from the History Department, the history subject classes could be automatically expanded to their full depth while keeping the other subjects in a collapsed state.

Poor usability is one of the barriers that deters authors from self-archiving their publications. The suite of new deposit, workflow and autocompletion features in EPrints 3 have gone a long way in making the deposit process much more user-friendly and intuitive. It will be interesting to see over the next year if repository administrators can exploit these new features to encourage more self-deposit into their repositories.

2.Operating System

Originally EPrints is developed on Redhat Linux but it is used on any number of Linux distributions, and other UNIX-like systems including OS-X. It also is supported by Microsoft's Windows operating system namely , Vista XP and Windows.The preferred operating system for the proposed repository is Ubuntu 10.10.

3.Metadata Standards

Metadata is a core issue for the creation of repositories. Different institutional repositories have chosen and use different metadata models, elements and values for describing the range of digital objects they store. Metadata creation is an important factor to be considered in the preservation of material within a repository. Hockx-Yu emphasizes that "much could be done to consider digital preservation from the outset, to involve the authors in contributing preservation metadata during the creation and ingest process and to embed digital preservation into the repositories work flow, which will ease the later preservation tasks"

The re-designed institutional repository will require mandatory self-archiving by faculty and research scolars. Thus, it will include work from many disciplines, possibly in many formats.Faculty will be the primary creators of metadata in the repository, and will need training in how to create this metadata. The repository will include pre-prints and post-prints.

DublinCore open source metadata software has been identified as the metadata standard for the digital repository, and will be customized according to the needs of the various focus areas.

4.Digitisation Standards

Digitisation Standards can be identified by constituting a Digitisation Workgroup and will have to be adapted according to the needs of the various focus areas within Eprints.

5.Digital Objects

The following categories of digital objects have been identified to be included in the repository.

i) Events

Exhibition

Conferences

Open days

Workshops

ii) Images

Maps

Paintings

Drawings

Plans

Photos

iii) Research papers/reports

PhD theses

Journal articles

Project reports

Dissertations

iv) **Moving images**

Animation

Movies

Videos

6.Manpower Requirements

The following categories of personnel are needed to look after the functioning of the repository.

i)Eprints System Manager

The Eprints System Manager should have the following skills:

- Technical management skills;
- System monitoring, testing, debugging;
- Develop portions of Eprints related to system administration;
- Monitor and upgrade Eprints utility programs and middleware;
- Develop approved system enhancements;
- Manage hardware contracts and system administration;
- Java programming;
- Networks;
- Unix/Linux Server

ii)Eprints User Support Manager

The Eprints User Support Manager will be responsible for:

- Client Support Training;
- Coordinate and manage the definition and setup of new Eprints communities;
- Plan and implement usability tests;
- Make recommendations on new functionality for Eprints;
- Chair the Eprints Workgroup;
- Write and maintain user documentation for the system, help pages.

iii)Web Manager

- Apply usability and user interface design knowledge and expertise;
- Integrate Eprints into institute web-site

iv)Metadata Specialist

- Share knowledge and expertise about Qualified Dublin Core (as implemented by Eprints) and consult with the Eprints User Support Manager on questions, issues related to the MARC to Dublin Core metadata crosswalk;
- Adaptation of metadata elements in DublinCore registry of Eprints according to Metadata Std document;
- Provide training.

v)Digitisation Specialist

- Serve as knowledge expert for digital preservation issues;
- Provide training;
- Share knowledge and expertise on matters of archival selection,preservation and UP records policies;
- Provide advice regarding scanning of paper or microform documents to digital formats and reformatting of documents already in a digital format.

vi)Information Specialists

- Provide general information about Eprints as a service of the library;
- Alert users to the information potential of the repository;
- Assist end-users with searching the repository;
- Answer end-user questions about Eprints;
- Provide information about the possibility of contributing to the repository

CONCLUDING REMARKS

Digital repositories require ongoing evaluation to determine their quality and new directions for growth. A well designed system and user interface will allow the user to develop an appropriate internalized model of that system, which in turn facilitates users' learning of and

interaction with it. Further, Users need to be involved in the development of an application since its early stages. If their tasks and characteristics are not studied, the product that will be developed may be technically sound, may look very pretty, but will probably not be usable and user friendly. Hence an early involvement of users in system design, adoption of a user-centered approach and the identification of users' needs and preferences via a user and task analysis may invariably be done.

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