



BUILDING AN INSTITUTIONAL REPOSITORIES IN SARANATHAN COLLEGE OF ENGINEERING USING DSPACE : AN OVERVIEW

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ABSTRACT

In this paper I describe the process of building the digital repository from scratch including hardware and software, customization, collection development, and future development. Although the development of the repository is ongoing; it is valuable to share the experience with other institutions who wish to set up an institutional repository of its own and also add to the knowledgebase of IR development.

Indexing terms/Keywords

Institutional Repository, Dspace, IR Development, Open source, Digitization.

Academic Discipline And Sub-Disciplines

Library and Information Science

SUBJECT CLASSIFICATION

Digital Library Software: Open source

TYPE (METHOD/APPROACH)

Experimental Analysis Approach

1.INTRODUCTION

Repositories represent potentially rich sources of information, data, images and valuable research results. The Institutional Repositories are powerful systems that allow institutions to store and maintain their digital documents and allow for interaction and collaboration among users in the organizations. There are number of digital library software available as "Open Source" as well as in "Proprietary format". Open source software helps libraries mainly in lowering initial and ongoing costs, eliminating vendor lock-in and allowing for greater flexibility. The main advantage of open source software is that it is generally available in free. DSpace is a groundbreaking digital library system to capture, store, index, preserve and redistribute all scholarly research material in digital formats.

2.Review of Literature

B K Vishala and M K Bhandi(2008) have described an overview of Institutional repositories its benefits to the institutions and also describes the role of library in building an Institutional repository. Rekha Dabholkar R Prabakaran and B T Kurahatti (2008) analyzed in this paper about TIFR initiative to build its Institutional Repository. Howard Amos and Tom Ruthven identified the various environment factors to build an Institutional Repository.

3.Scope & Methodology

This paper helps in planning to build an IR in my own academic Institution. The main purpose of this paper is about the steps to be taken to implement and build the Institutional Repository. The scope of the repository may contain annual reports, research papers, speeches/lectures, videos, project reports, Thesis and the in-house publications. The project also helps the beginners in getting an idea of how different file formats can be used for different collections in order to maintain uniformity.

3.1.Methodology

The methodology involves the following steps :

- Installation of Dspace software ,
- Customization and implementing the IR.

Logical approach is made in building different communities, sub communities, and collections. Decisions are taken by sharing the responsibility of maintaining different collections.

3.2.What Is An Institutional Repository?

An Institutional Repository is an online locus for collecting, preserving, and disseminating information in digital form for the intellectual output of an institution. An institutional repository may contain work of which the author or institution owns copyright, or for which permission has been obtained to include a copy of the work in the repository.



3.3. Why Is Institutional Repositories Important To Higher Education?

The creation of an institutional repository has become very common in academic libraries, due to the availability of a number of open source software platforms that allow for simple implementations

Students and faculty members increasingly recognize the need to store their intellectual output in the form of personal collections, and to make available the results of their work within and outside the institution. Institutions increasingly recognize the need to develop repositories of intellectual output for long-term archival purposes, and to administer the property rights associated with stored assets.

4. DSpace

DSpace is 'a digital repository designed to capture, store, index, preserve, and redistribute the intellectual output of a university's research faculty in digital format. It is an open-source system and is freely available for anyone to download and run at any type of institution, organization, or company (or even just an individual). Users are also allowed to modify DSpace to meet an organization's specific needs.

DSpace was jointly developed by MIT Libraries and Hewlett-Packard. DSpace can support a wide variety of artifacts, including books, theses, and 3D digital scans of objects, photographs film, video, and much more.

4.1. Installation and Customization of Our DSpace

DSpace runs on PostgreSQL or Oracle and requires a server installation. Customizing the Web interface requires either the JSPUI (JavaServer Pages user interface) or XMLUI (Extensible Markup Language user interface).

The DSpace Digital Repository software is freely available as open source software from SourceForge (www.sourceforge.net/projects/dspace)

4.2. Customization

After installation, we can customize the Software. By customization we can change the logo, institution name, background colour, side bar changes, header footer design and layout size, etc

4.3. Metadata

DSpace uses a qualified Dublin Core metadata standard for describing items intellectually (specifically, the Libraries Working Group Application Profile). Only three fields are required: title, language, and submission date, all other fields are optional. There are additional fields for document abstracts, keywords, technical metadata and rights metadata. This metadata is displayed in the item record in DSpace, and is indexed for browsing and searching the system (within a collection, across collections, or across Communities).

4.4. User Interface

DSpace's current user interface is web-based. There are several interfaces available:

- Interface for submitters and others involved in the submission process,
- Interface for end-users looking for information,
- Interface for system administrators.

The end-user or public interface supports search and retrieval of items by browsing or searching the metadata. Once an item is located in the system, retrieval is accomplished by clicking a link that causes the archived material to be downloaded to the user's web browser. "Web-native" formats (those which will display directly in a web browser with a plug-in) can be viewed immediately; others must be saved to the user's local computer and viewed with a separate program that can interpret the file (e.g., a Microsoft Excel, video files).

4.5. Organizational Method for Submission:

1. The first step is to create a Top-level community.

Community is a group of collections that share a common subject. Typically these correspond to a laboratory, a research centre or a department

For Eg: Faculty of Engineering (**Top-level Community**)

2. After creating top-level community create a sub-community

Eg: Department of Computer Engineering (Sub-community).

3. Then create a collection

Eg: In-house Publications (collection)

4. After creating collection submit

Submission files different formats eg: pdf of the lecture, a tiff of an image



displayed during the lecture and a PowerPoint presentation used during the lecture.

4.5.1.CREATE TOP-LEVEL COMMUNITY

SARANATHAN Library >

Communities and Collections

Shown below is a list of communities and the collections and sub-communities within them. Click on a name to view that community or collection home page.

- Annual Day Reports [2]**
 - Annual day report [1]
 - ss [1]
- Convocation Addresses [1]**
 - Convocation Speeches 2012 [1]
- Course materials [2]**
 - PPT [1]
 - ss [0]
 - Videos [1]
- E-Magazines [3]**
 - Sara e-journal [3]

Admin Tools

Create Top-Level Community...
Admin Help...

4.5.2.CREATE SUB-COMMUNITY:

SARANATHAN Library >
School of Engineering >

Department of Computer Engineering : [4]

Community home page

In: Department of Computer Engineering

Search for Go

or browse

Subject Title Author Issue Date

This Sub Community contains the Computer Engineering Documents

Collections in this community

E-books [2]

This collection contains some e-books related to cse department

[inhouse publication](#) [2]

This article published by Prof. Rajeshwari

[sddd](#) [0]

[View Statistics](#)

Admin Tools

Edit...
Create collection
Create Sub-community
Export Community
Export (migrate) Community
Export metadata
Admin Help...

Recent Submissions

[A SECURE INTRUSION DETECTION SYSTEM IN MOBILE AD HOC NETWORK](#)

[A Secure Intrusion detection system against DDOS attack in Wireless Mobile Ad-hoc Network](#)

[Java: The fundamentals of Objects and Classes](#)

[Artificial Intelligence- Agent behaviour](#)

4.5.3.CREATE COLLECTION



Describe the Collection

[Help...](#)

Name:

Shown in list on community home page

Short Description:

HTML, shown in center of collection home page. Be sure to enclose in <P> </P> tags!

Introductory text:

Plain text, shown at bottom of collection home page

Copyright text:

HTML, shown on right-hand side of collection home page. Be sure to enclose in <P> </P> tags!

Side bar text:

4.5.4.E-person; identifies a registered DSpace user. E-persons can play different roles in DSpace as collection managers, item submitters, item reviewers, administrators, etc

E-people 1-8 of 8

Clicking on the 'Add' button next to an e-person will add that e-person to the list on the main form...

Query Search

First < 3 Pages < 1 Page 1 Page 2 3 Pages 2 Last

ID	E-mail	Last Name	First Name	Language
<input type="button" value="Add"/> 1	agri@ocean	Ocean	Agri	en
<input type="button" value="Add"/> 5	selviravi2011@gmail.com	ravi	selvi	en
<input type="button" value="Add"/> 7	senthamilselvi-lib@saranathan.ac.in	ravindhren	selvi	en
<input type="button" value="Add"/> 2	assenthamil@gmail.com	senthamil	selvi	en
<input type="button" value="Add"/> 6	senthamilselvi@saranathan.ac.in	senthamil	a	en
<input type="button" value="Add"/> 3	newuser3			

Click on the 'Select E-people' button to choose e-people to add to the list. Click on the 'Select Groups' button to choose groups to add to the list.

4.5.5.Submission of Digital Document to Dspace

With DSpace the submission process is very simple, but the initial stages are centered on the collection into which the content will be deposited, rather than the type of content.

After logging into DSpace, the user can click on Start a New Submission and then select the Collection to which the item is to be added from a drop down list. The full lists of Collections are displayed in alphabetical order. We found it necessary to give all of our collections different names to ensure that there was no confusion as to which Community it belonged to. It is also possible to start from the Collection and to use the 'Submit to thiscollection' button. Once a Collection has been selected the user is presented with some initial choices about the item

A collection represents groupings of related items. The collections were identified in my institution as:

- Published and peer-reviewed papers
- Grey literature including technical reports and working papers
- Theses



- project reports
- E-books

There are only three mandatory fields in the default DSpace: title, date and language. You can also save the work in progress. It is also possible to move back to earlier submission stages by clicking on a previously completed stage in the progress bar. ,

5. DSpace Submission Workflow

The DSpace submission workflow system is a critical part of the DSpace architecture that allows submission, processing, and final addition of content to the live repository.

DSpace's underlying model includes E-People, users who have registered with the system and have certain authorizations, roles, rights, and privileges that translate abilities to complete certain tasks within the DSpace system.

A typical submission begins with the system asking the user a couple of questions about digital document to be added in the repository and number of files involved in the submission. The DSpace submission process has a 'sausage bar' progress indicator to indicate where you are in the five step submission process. The section you are in, in the case below for Describe submission, is highlighted in red as outlined in the following Workflow Step Description

5.1. Step-1.Describe: User enters metadata about the document (s) they are submitting, including but not limited to author, title, keywords, and a description.

Home My DSpace Browse Search Language Help About DSpace

Describe Describe Upload Verify Complete

Submit: Describe this Item

Please fill in the requested information about this submission below. In most browsers, you can use the tab key to move the cursor to the next input box or button, to save you having to use the mouse each time. [\(More Help...\)](#)

Select type of document

Journal Contribution

Type - [Help](#)

Specified Type

Article

Creators - [Help](#)

Authors

Enter the author names

Parveen Banu, S

Venkataramani, Y

Title Information - [Help](#)

Title *

Enter the complete title of your deposit. Title and subtitle are divided by a double colon (:)

An Efficient Hybrid Image Compression Scheme based on Correlation of F English

Alternative Titles

Enter here the translation(s) of the title.

English



Reference - Help

Journal Title + ISSN *

Enter a word from the journal title and choose the correct title out of the picklist.

International Journal of Computer Applications +0975-8887 English ▾

Volume	Issue	Start page	End page
18	3	5	12

Links - Help

Alternative Locations (URL)

If your deposit is available from other sites, enter those URLs here.

Add More

Data set(URL)

If the data sets are electronically, enter those URLs here.

Add More

Characteristics - Help

Year of Publication (format: YYYY) *

2011

Refereed *

Please indicate here if your deposit has been refereed.

Refereed ▾

Language *

Select the language(s) of your deposit.

English Oromiffa
 Amharic (Other)

Next >

Stop

5.2. Step- 2 Describe: Here we give some free keywords and content descriptions

Home My DSpace Browse Search Language Help About DSpace

Describe Describe Upload Verify Complete

Submit: Describe this Item

Please fill further information about this submission below. [\(More Help...\)](#)

Subjects - Help

Free Keywords

Enter here any keywords that will help searchers to find your deposit.

Hybrid image compression English ▾ Remove This Entry

Digital images English ▾ Add More

Geographical Terms

Select the geographical terms your deposit covers.

India Add More

Description of Content - Help

Abstract

Enter here the abstract, a short summary of the content of your deposit.

entropy encoding. This scheme is concerned with the compression ratio, bits per pixel and peak signal to noise ratio. Experimental results illustrate that the proposed scheme is efficient and feasible in terms of compression ratio, bits per pixel and peak signal to noise ratio.

English ▾ Add More

Notes

Enter here any additional information about your deposit.

English ▾

5.3. Step-3.Upload: The user selects and uploads the files on their local machine that they like to upload as part of the submission. Each file's type is identified by the system and the user verifies the file type



SARANATHAN
COLLEGE OF ENGINEERING

Home My DSpace Browse Search Language Help About DSpace

Describe Describe Upload Verify Complete

Submit: File Uploaded Successfully

Your file was successfully uploaded.

The table below shows the files which have uploaded for this item. [More Help...](#)

Primary bitstream	File	Size	Description	File Format
<input type="radio"/>	parveen.pdf	238747 bytes	None	Adobe PDF (known)

You can verify that the file(s) have been uploaded correctly by:

- Clicking on the filenames above. This will download the file in a new browser window, so that you can check the contents.
- The system can calculate a checksum you can verify. [Click here for more information.](#) [Show checksums](#)

[Add Another File](#) [< Previous](#) [Next >](#) [Stop](#)

5.4. Step-4. Verify: An overview of all details of the submission is given including a summary of the entered metadata and the files involved in the submission.

Describe Describe Upload Verify Complete

Submit: Verify Submission

Not quite there yet, but nearly!

Please spend a few minutes to examine what you've just submitted below. If anything is wrong, please go back and correct it by using the buttons next to the error, or by clicking on the progress bar at the top of the page. [More Help...](#)

If everything is OK, please click the "Next" button at the bottom of the page.

You can safely check the files which have been uploaded - a new window will be opened to display them.

Specified Type Article

Authors Parveen Banu, S
Venkataramani, Y

Title * An Efficient Hybrid Image Compression Scheme based on Correlation of Pixels for Storage and Transmission of Images

Alternative Titles None

Journal Title + ISSN * International Journal of Computer Applications
+0975 - 8887

Volume 18 [Correct one of these](#)

Issue 3

Start page 5

End page 12

Alternative Locations (URL) None

Data set (URL) None

Year of Publication (format: YYYY) * 2011

Refereed * Refereed

Language * English

5.5. Step-5. Complete; The user's actions in the submission process are complete. Based on the workflow steps set for the collection, the item may immediately be added to the collection or have to be reviewed by system administrators before its addition to the collection.



Submit: Submission Complete!

Your submission will now go through the workflow process designated for the collection to which you are submitting. You will receive e-mail notification as soon as your submission has become a part of the collection, or if for some reason there is a problem with your submission. You can also check on the status of your submission by going to the My DSpace page.

[Go to My DSpace](#)

[Communities and Collections](#)

[Submit another item to the same collection](#)

5.6. Dissemination:

The items submitted and archived into the DSpace digital library repository can be disseminated and accessed by the users through search and browse. DSpace offers users the capability to search DSpace for items of interest both simple and advanced. From the DSpace home page, users can browse all items in DSpace by title, author, or issue date.

6. Observation

DSpace provides a way to manage research materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time. It helps to:

- Getting research results out quickly, to a worldwide audience
- Reaching a worldwide audience through exposure to search engines such as Google
- Storing reusable teaching materials that one can use with course management systems
- Storing examples of students' projects (with the students' permission)
- Showcasing students' theses (again with permission)
- Keeping track of own publications/bibliography

7. Conclusion

This paper provides evidence on how the Saranathan College of Engineering IR was built from scratch and how different collections with numerous forms and formats can be accommodated using DSpace software. The project also helps the beginners in getting an idea of how different file formats can be used for different collections in order to maintain uniformity. It supports community/collection based content and submission by different user communities.

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Author' biography

Dr. A. Senthamilselvi is working as a librarian in Saranathan College of Engineering, Trichy. She has more than 15 years of experience in the field of Library and Information science. She has completed Ph.D in Library and Information Science. She has passed the UGC NET Examination. Her area of interest is Scientometrics, Digital library and webometrics. She has published more than 25 papers in various National, International conferences, national and International Journals. She had attended 3 months International Training Program at, Belgium and Netherland. She is a Vllir-Uos scholar. She is an executive committee member of IALA & SALIS.