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Evolving ETDs in University Library, Anna University – A Case Study

Dr. G. Krishnamoorthy   **Mr. S. Bharanidharan**   **Dr. V. Rajasekar**

Abstract

This paper attempts in bringing out the progress update of 'Shodhganga' project being executed in University Library of Anna University. The progress of principal activity which is digitalization of the research outputs of Anna University has already been briefed in previous papers presented in ETD sessions. The main objective of this case study involves the update of first phase activity i.e. Digitalization, brief summary on Phase 2 activity that involves development of ETD lab to enhance the progress of Digitalization and also brings out effective usage of access provided to Urkund Software as an approach towards Anti-plagiarism. Besides this a brief outline of the University Library of Anna University, its facilities, services provided to users, collection of traditional and E-resources from the access point of view have all been dealt with.

This paper also brings out the history of initiation and development of Shodhganga project in Anna University starting with MOU with Shodhganga, approval by Anna University VC, early stage activities performed after enrollment with this project and prior to receipt of financial support from ETD, Digitalization and upload activities after receipt of funds. Current status of conversion of thesis output to electronic format is segregated Faculty wise and presented in this Paper. Finally the future plans involved in speeding up the progress is also outlined in this paper.

Keywords: Institutional Repository, ETD Lab, Digitalization, Antiplagiarism

1. Introduction

"SHODHGANGA" – A Unique Project of excellence initiated by INFLIBNET has created a platform for the Researchers to share the vital information of their brain draining research findings.

To highlight a little about the project, Theses and dissertations available in various formats all over the Indian Universities are digitalized and stored in common platform that can be accessed globally. Online availability of electronic theses through centrally-maintained digital repositories, not only ensure easy

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access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This project is initiated by INFLIBNET in the year 2010 and has grown progressively with collection of around 1,00,000 electronic theses by July 2016 and has become largest Repository of Ph.D. thesis in India.

As part of this project, the University Library, Anna University has uploaded 3917 theses and ranked 4th at the national level for uploading thesis submitted by the Anna University Research Scholars on various subjects. From the users' perspective, this project is indeed a boon to the budding Researchers who could be well informed about the ongoing academic research activity in their areas of interest thus enabling them to improvise on their proposed study for the ultimate betterment of their self and the society at large.

2.   Anna University

Anna University was established on 4th September 1978 as a unitary type of University. It offers higher education in Engineering, Technology and allied Sciences relevant to the current and projected needs of the society. Besides promoting research and disseminating knowledge gained there from, it fosters cooperation between the academic and industrial communities. Since December 2001, it has become a large, highly renowned affiliated University, having brought into its fold about 4 Regional Centers with 12 Constituent colleges, 6 Government Colleges, 3 Government-aided Engineering colleges and 625 Self-financing Engineering Colleges located in various parts of Tamilnadu State. The Anna University, which is of the affiliated type, is a member of the Association of Indian Universities, the Association of Commonwealth Universities and Partner of UNESCO International Center for Engineering Education (UICEE). Anna University Chennai, the only Science and Technology University in the state of Tamilnadu, has a position among top Indian universities in terms of its scientific research output.

3.   University Library

The University Library is located in three campuses, the Main Campus comprising of College of Engineering (CEG) and Alagappa College of Technology (A.C. Tech), Madras Institute of Technology (MIT) campus and School of Architecture and Planning (SAP) campus in a sprawling green eco-

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friendly environment spanning around 4206 sq.mts, 1609sq.mts and 389 sq.mts respectively. Around 15,100 registered users access the library. All the library functions have been well automated and entry into the library and book transaction is made possible with RFID Technology using smart card.

The library collections and e-resources can be accessed through the following URL: http://www.annauniv.edu/Library/index.html

2.1 Facilities

- OPAC (On-line Public Access Catalogue)
- Common Reading Halls
- Interlibrary Network
- Reprography
- Automated Book Lending
- Book Bank
- Web Based Library Information
- A/c Reading Halls in all the three floors
- Digital Knowledge Centre
- Reference Reading Hall
- Career Guidance Cell

2.2 Services

- Reference Service
- Lending Service
- Bibliographic Service
- Documentation Service
- Career Guidance Service
- Special Service for Differently Abled Persons
- Current Awareness Service
- Article Alert Service
- Internet Service

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- ➢ Provision for Self- Study Materials (Laptop with WiFi)
- ➢ Access to E-resources

3. History of Shodhganga Project in AU

On Vice Chancellor's approval to join and enroll the Shodhganga Project launched by INFLIBNET for the betterment of our research community, University Library of Anna University signed MoU in the year 2013 with Shodhganga to upload the Anna University theses. Immediately after enrollment, as part of early stage activities, a dedicated team started uploading the Anna university theses manually in the website which accounted to around 2209 theses in 2015.

Shodhganga Project renders financial assistance to all Indian Universities registered under this project. The fund allocation is categorized under three major activities

- i. Digitalization of Thesis and Dissertations
- ii. Establishment of ETD Lab
- iii. Access to Antiplagiarism software

With fund allocation to Anna University, additional 995 theses are digitalized and uploaded in the Shodhganga server. Altogether University Library has uploaded 3917 theses and ranked 4th at the national level for uploading thesis submitted by the Anna University Research Scholars on various subjects.

4. Electronic Theses (Shodhganga) Through UGC Inflibnet

Anna University Library has been identified as one of the 178 libraries to take part in the INFLIBNET Programme with the INFLIBNET database made available to the users of the library. Under this project so far 3917 theses are uploaded and the segregation Faculty wise is furnished below

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4.1   Theses Upload Update

Sl. No	Name of the Faculty	No. of Thesis
1	Faculty of Architecture and Planning	32
2	Faculty of Civil Engineering	295
3	Faculty of Electrical and Electronics Engineering	476
4	Faculty of Information and Communication Engineering	1095
5	Faculty of Management Studies	119
6	Faculty of Mechanical Engineering	738
7	Faculty of Science and Humanities	983
8	Faculty of Technology	179
	Total	3917

Table: 1 – Shodhganga Theses Titles List – Faculty wise (as on Sep 2016)

This table shows that so far uploaded University thesis from different Faculty

Sl. No.	Name of the Department	Total No. of Supervisor Enrolled
1.	Civil	247
2.	Mechanical	901
3.	Electrical	492
4.	Information Technology	906
5.	Technology	251
6.	Architecture	6
7.	Science & Humanities	1179

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8.	Management	90
	Total	**4072**

Table: 2 – Anna University Supervisor-Department wise (as on Sep 2016)

This table shows that so far faculty enrolled in the Centre for Research

5. Activity Under Progress

5.1 Digitalisation of Theses

Further to completion of uploading 3917 theses, there are more than 1375 theses received from the Centre for Research, Anna University are available to be uploaded in the Shodhganga Server in the following prescribed format.
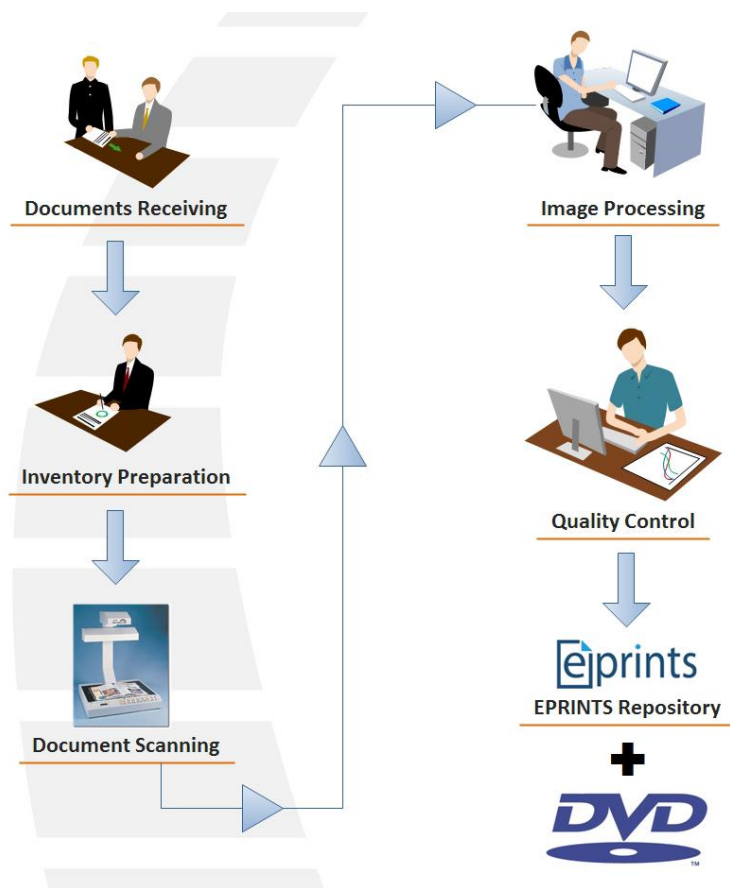
- Making of every thesis in enhanced PDF format
- Making of every thesis as searchable Combined PDF
- Making of every thesis as searchable Chapter Level PDF by splitting the file
- Making Metadata in XML format of every thesis for effective delivery.

For performing this activity, Proquest is awarded with the digitalization of doctoral theses of Anna University in consideration to their professional and methodical approach and quality of execution.

5.1.1 Outline of Digitalization Process

- Project will begin with the scanning and processing of the print content, which will lead to the generation of PDFs
- The metadata of the PDFs will be captured in order to make the data searchable
- The captured metadata will be checked for quality and improved upon for 100% accuracy
- The content will then be uploaded on the Document Retrieval System platform for the university and also on Shodhganga as per the requirement

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5.1.2 Approach Methodology of Digitalization Process

5.1.3 Steps involved in ProQuest Digitalization Process

- **Infrastructure Deployment**

Estimation of the hardware and software requirements based on number of pages to be digitalized and the project duration.

- **Document Receiving & Inventory Preparation**

All the print Theses are received and inventory list is prepared in a spreadsheet along with total page numbers for further action.

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- **Document Scanning**

Scanning is performed with high speed production scanners. The images will be scanned with high resolution with exceptionally high levels of readability.

- **Image Processing**

Scanned images are processed in Adobe Photoshop application which involves Cropping and cleaning of images, De-skew, De-speckle and rotation of text for alignment

These processed images will then be sent for quality checking and delivery of error free high quality TIFF images is ensured.

5.1.4 ProQuest Digitalization Activity forecast

Sl. No	Name of the Faculty	No. of Thesis
1	Faculty of Architecture and Planning	23
2	Faculty of Civil Engineering	65
3	Faculty of Electrical and Electronics Engineering	37
4	Faculty of Information and Communication Engineering	18
5	Faculty of Management Studies	599
6	Faculty of Mechanical Engineering	18
7	Faculty of Science and Humanities	207
8	Faculty of Technology	28
	Total	**995**

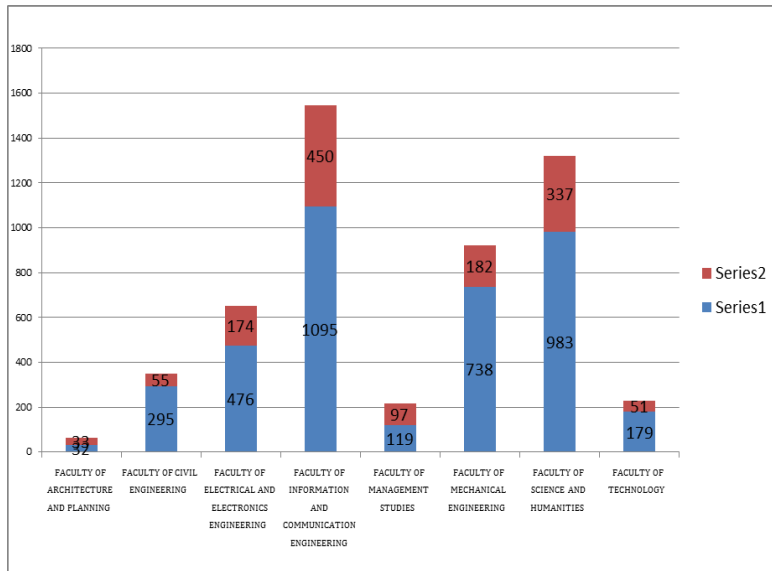**Table: 3 – Availability of Print Thesis to be uploaded**

This table shows that there are nearly 995 theses available in the University Library from the different faculty and to be uploaded in the Shodhganga project.

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S.No	Name of the Faculty	No. of Thesis
1	Faculty of Architecture and Planning	33
2	Faculty of Civil Engineering	55
3	Faculty of Electrical and Electronics Engineering	174
4	Faculty of Information and Communication Engineering	450
5	Faculty of Management Studies	97
6	Faculty of Mechanical Engineering	182
7	Faculty of Science and Humanities	337
8	Faculty of Technology	51
	Total	**1379**

Table: 4 – Thesis to be uploaded to Shodhganga

This table shows that there are nearly 1379 theses are available in the Centre for Research from the different faculty and to be uploaded in the Shodhganga project.

Below graph depicts the comparison of theses already uploaded in the Repository and theses to be uploaded

Graph 1: Comparison of Theses uploaded / to be uploaded

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5.2 Access to Anti-Plagiarism Software

URKUND is the only system for plagiarism control that offers

- Submission of documents via email
- Authentication via email, no log in for teachers/students required
- A preventive and pedagogical angle on plagiarism
- A web service that allows integration into any educational platform
- A system for plagiarism control reserved for teachers
- Anonymous examination.

The ongoing efforts of Anna University Library include Digitalization of doctoral Theses and access to Antiplagiarism software. With access received to Urkund software, it is made mandatory that all research outputs of Anna University should pass through this testing and thereby it is ensured that problem of duplication is avoided. So far

Sl. No	Faculty Registered	No. of Documents submission
1	3794	15833

Table: 5 – Anna University Supervisor enrolled URKUND

This table shows the Faculty count of those who registered URKUND tools

6. Financial Assistance

An estimate of financial assistance required by Anna University towards completion of this Shodhganga project was already projected in the previous paper presented in ETD conference. The estimate was projected as around Rs.22.5 lakhs excluding the annual maintenance charge of Rs.50,000 starting from second year.

Financial assistance is being rendered by UGC for all University Libraries that are part of this Shodhganga project. Accordingly, the University Grants Commission has granted and released the fund

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in two phases, a sum of Rs.18,95,000/-   towards setting up of ETD Laboratory, digitalization of thesis and upload the DMS Server.

In this regard 995 theses are digitalized and uploaded in the Shodhganga server at the cost of Rs.2.55 Lakhs during last financial year 2015-2016.

Amount sanctioned in 1st phase by UGC	Rs. 8,95,000/-
Amount sanctioned 2nd phase by UGC	Rs. 10,00,000/-

Total	**Rs. 18,95,000/-**

Amount spent so far	Rs.2,54,494/-

Balance Amount Available	**Rs. 16,40,506/-**
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7.   Future Plans

To summarize, with the ongoing efforts of Anna University Library and all the future plans in place, it is evident that Anna University would obtain first position national level in uploading Electronic Theses and Dissertations and implementation of the same.

University Library of Anna University aims at achieving first position national level by speeding up the process of uploading in Shodhganga website, the thesis submitted by the Anna University Research Scholars on various subjects. As a step towards fastening this process, an ETD lab shall be established with necessary infrastructure and dedicated staff well trained in performing such tasks. Next step is to provide 24x7 online access to all research scholars to enhance the research productivity of Anna University.

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About Authors

Dr. G. Krishnamoorthy, Director, University Library, Anna University, Chennai, Tamil Nadu, India

Mr. S. Bharanidharan, Computer Scientist, Anna University, Chennai, Tamil Nadu, India

Dr. V. Rajasekar, Asst. University Librarian**,** Anna University, Chennai**,** Tamil Nadu, India

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