

Developing Institute Digital Repository at Assam University, Silchar: A Case Study

A. K. Sharma

1. Introduction

Institute Digital Repository is an important source of information that contains the output of the research of various academic and research organizations. Earlier, research output produced by various organization was not accessible to the researchers and was kept under lock and key. The initiative for digitization of PhD Thesis and Dissertation made it possible to expose these valuable source of information to the Researchers. Vidhyanidhi was among first initiative taken by University of Mysore in India and was sponsored by the National Information System for Science and Technology (NISSAT). This was among the national effort to create, maintain and provide network access to digital library of Indian theses. Vidyanidhi is a direct consequence of the policy initiatives identified in the Information Technology Action Plan. The impetus has come primarily from a policy initiative that makes it mandatory for all universities or deemed universities in the country to host every dissertation/thesis on a designated Web site.

An institutional repository can be viewed as a "...a set of services that a university offers to members of its community for the management and dissemination of digital materials created by the institution and its community members (Lynch, 2003)." The Institute repository is a contemporary concept that captures and makes available as a result of digital information resources, accessible through internet or intranet (Barton, 2004). An institutional repository might also include otherdigital assets generated by academics, such as datasets, administrative documents, course notes, learning objects, or conference proceedings. Deposit of material in an institutional repository is sometimes mandated by that institution.

2. Assam University: An Introduction

Assam University was set up by an Act of Union Parliament (ACT XIII of 1989). It fructified the long-cherished aspiration of a large section of educationally and economically disadvantaged community and has carried with it the noble mandate to bring in this culturally rich region to the mainstream of national development. Its journey over the last sixteen years has been one of struggle towards meeting these aspirations and goals. The Act and the Statutes are the legal foundation on which the University system works. Over the period of time, some of the provisions of these rules undergo amendments. The functional requirements of the University demand that these changes are always in the form of our knowledge, so that

the legal standing of all its activities remains unquestioned. This Edition of the Act and Statutes, which incorporates all amendments and insertions upto 31st December 2010 is an attempt in this direction (Assam University, 1989).

For Academic administration, the University has been divided into 16 Schools and 40 departments as under-

S No	Schools	Departments
1	Rabindranath School of Languages & Cultural Studies	Department of Linguistics Department of Bengali Department of Hindi Department of Manipuri Department of Sanskrit Department of Indian Comparative Literature Department of Urdu Department of Assamese
2	Suniti Kumar Chattopadhyay School of English & Foreign Languages Studies	Department of English Department of Arabic Department of French
3	Mahatama Gandhi School of Economics and Commerce	Department of Economics Department of Commerce Department of Political Science Department of History Department of Sociology Department of Social Works Department of Anthropology
4	Abanindranath School of Creative Arts and Communication Studies	Department of Mass Communication Department of Visual Arts Department of Performing Arts
5	SarvepalliRadhakrishnan School of Philosophy	Department of Philosophy
6	AshutoshMukhopadhyay School of Education	Department of Educational Science
7	Albert Einstein School of Physical Sciences	Department of Physics Department of Chemistry Department of Mathematics Department of Computer Science Department of Statistics
8	HargobindaKhurana School of Life Sciences	Department of Life Science & Bioinformatics Department of Microbiology Department of Biotechnology
9	Jawaharlal Nehru School of Management Studies	Department of Business Administration
10	EP Odum School of Environmental Studies	Department of Ecology & Environmental Science
11	TrigunaSen School of Technology	Department of Agricultural Engineering Department of Computer Science & Engineering Department of Electronics & Communication Engineering Department of Applied Science & Humanities
12	Aryabhata School of Earth Science	Department of Earth Science
13	Swamy Vivekananda School of Library Science	Department of Library & Information Science
14	Deshabandhu Chittaranjan School of Legal Studies	Department of Law

Table 1: Schools and Departments in Assam University

2.1 Rabindra Library: Central Library of Assam University

The central library of Assam University, Silchar known as Rabindra Granthagaar- was started in the year 1994 - as a unit to meet the information needs of academic and research community of the university. The Central Library is having a plinth area of 38,700 square feet and located at a strategic point from where it can serve all the departments of the University. The library is a three storied building consisting of basement, ground floor and first floor. The ground floor is housed with the bound volumes of periodicals as well as passive collection. The first floor of the library is having Social Science stack room on right hand side just behind the security counter and periodical section. Immediately after entrance gate, the circulation section is operational and on left hand side of the ground floor- computer laboratory, science stack room, membership section, acquisition section and server room along with the staff room are located. On first floor, office of the librarian, reference section and Seminar room are located.

The collection size of the library is 1,36,890 books, journals – 427 national and 225 international journals at present. Besides this, the University library subscribes to 18 Newspapers and 12 popular magazines. In addition to this documentary collection, the library is getting access to e- journals through INFLIBNET, DELNET and DELCON. Under the project E-ShodhShindu, library is receiving 10, 000 E-Journals and E-Books through World E-Book Library as a new initiative.

3. Shodhganga

Theses and dissertations are known to be the rich and unique source of information, often the only source of research work that does not find its way into various publication channels. Theses and dissertations remain an un-tapped and under-utilized asset, leading to unnecessary duplication and repetition that, in effect, is the anti-theses of research and wastage of huge resources, both human and financial.

The UGC Notification (Minimum Standards & Procedure for Award of M.Phil. / Ph.D Degree, Regulation, 2009) dated 1st June 2009 mandates submission of electronic version of theses and dissertations by the researchers in universities with an aim to facilitate open access to Indian theses and dissertations to the academic community world-wide. Online availability of electronic theses through centrally-maintained digital repositories, not only ensure easy

access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This would overcome serious problem of duplication of research and poor quality resulting from the "poor visibility" and the "unseen" factor in research output. As per the Regulation, the responsibility of hosting, maintaining and making the digital repository of Indian Electronic Theses and Dissertation (called "Shodhganga"), accessible to all institutions and universities, is assigned to the INFLIBNET Centre.

"Shodhganga" is the name coined to denote digital repository of Indian Electronic Theses and Dissertations set-up by the INFLIBNET Centre. The word "Shodh" originates from Sanskrit and stands for research and discovery. The "Ganga" is the holiest, largest and longest of all rivers in Indian subcontinent. The Ganga is the symbol of India's age-long culture and civilisation, everchanging, ever-flowing, ever-loved and revered by its people, and has held India's heart captive and drawn uncounted millions to her banks since the dawn of history. Shodhganga stands for the reservoir of Indian intellectual output stored in a repository hosted and maintained by the INFLIBNET Centre.

The Shodhganga@INFLIBNET is set-up using an open source digital repository software called DSpace developed by MIT (Massachusetts Institute of Technology) in partnership between Hewlett- Packard (HP). The DSpace uses internationally recognized protocols and interoperability standards. Shodhganga provides a platform for research scholars to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. The repository has the ability to capture, index, store, disseminate and preserve ETDs (Electronic Theses and Dissertations) submitted by the researchers.

DSpace supports "Open Archives Initiative's Protocol for Metadata Harvesting" (OAI-PMH) and uses a qualified version of the Dublin Core schema for its metadata. The INFLIBNET Centre, promotes setting-up of institutional and ETD repositories in member universities using OAI-PMH compliant software. A number of member universities have already set-up their institutional and ETD repositories using either DSpace or other OAI-PMH compliant Institutional Repository software. It would be possible for universities having sufficient network and computing infrastructure to maintain their own ETD repositories wherein their research scholars could deposit e-versions of their theses and dissertations. Moreover, they can use Shodhganga to host their theses as backup archives. INFLIBNET Centre, besides

maintaining the Central ETD Repository (Shodhganga) would also deploy a central server to harvest the metadata from all such ETD repositories distributed in universities with an aim to provide unified access to theses and dissertations through its harvesting server.

Shodhganga replicates the academic structure of each University in terms of Departments/Centres/Colleges. Each University has to facilitate ease of navigation. This structure facilitates research scholars from universities to deposit their theses in the respective Department / Centre / College. As shown in Fig 1, options for simple search and advanced search are available on the home page along with browsing facilities through universities and departments. The Centre is also developing a semantic web-based interface to facilitate subject-based browsing, navigation, search and retrieval of content available in the repository.

Shodhganga is an initiative of INFLIBNET where, as a Central University under the Ministry of Human Resource Development, Government of India, up to September, 2016, it was claimed that bibliographic entry of more than 1.0 Lakh records has been made. (INFLIBNET, 2012).

4. Initiative taken by Rabindra Library to Contribute to Shodhganga

Assam University, Slichar signed a MoU with the InFLIBnet on 31st January, 2013. The University had two kinds of theses-

- i. Digital
- ii. Hard copy

The digital theses available with the library were uploaded to the Shodhganga repository but it took time to get the second category of thesis digitized due to administrative procedure. The library received a grant of Rs. 1236000/- from UGC out of which 7.5 Lakh was for establishing a new ETD laboratory and the remaining 486000/- for digitization of theses in the second category in the month of December, 2014. By the end of August, 2016, the University could finalise the order of equipment for the ETD laboratory and all the theses available in the library were digitised through outsourcing. Initially, due to lack of support and infrastructure, the progress of uploading had been very slow, but afterwards it was expedited. As on date 986 theses have been uploaded to the Shodhganga and department-wise breakup is given in table 1.

S N	Department(s)	Thesis uploaded to Shodhganga as on (31.08.2016)
1	Department of Linguistics	19
2	Department of Bengali	173
3	Department of Hindi	36
4	Department of Manipuri	28
5	Department of Sanskrit	29
6	Department of Indian Comparative Literature	-
7	Department of Urdu	0
8	Department of Assamese	0
9	Department of English	20
10	Department of Arabic	38
11	Department of French	0
12	Department of Economics	40
13	Department of Commerce	34
14	Department of Political Science	22
15	Department of History	40
16	Department of Sociology	31
17	Department of Social Works	17
18	Department of Anthropology	0
19	Department of Mass Communication	52
20	Department of Visual Arts	14
21	Department of Performing Arts	0
22	Department of Philosophy	15
23	Department of Educational Science	59
24	Department of Physics	24
25	Department of Chemistry	33
26	Department of Mathematics	22
27	Department of Computer Science	17
28	Department of Statistics	0
29	Department of Life Science & Bioinformatics	73
30	Department of Microbiology	3
31	Department of Biotechnology	22
32	Department of Business Administration	17
33	Department of Ecology & Environmental Science	102
34	Department of Agricultural Engineering	1
35	Department of Computer Science & Engineering	0
36	Department of Electronics & Communication Engineering	5
37	Department of Applied Science & Humanities	0
38	Department of Earth Science	0
39	Department of Library & Information Science	0
40	Department of Law	0
	Total	986

Table 1. Status of Department wise thesis uploaded to Shodhganga

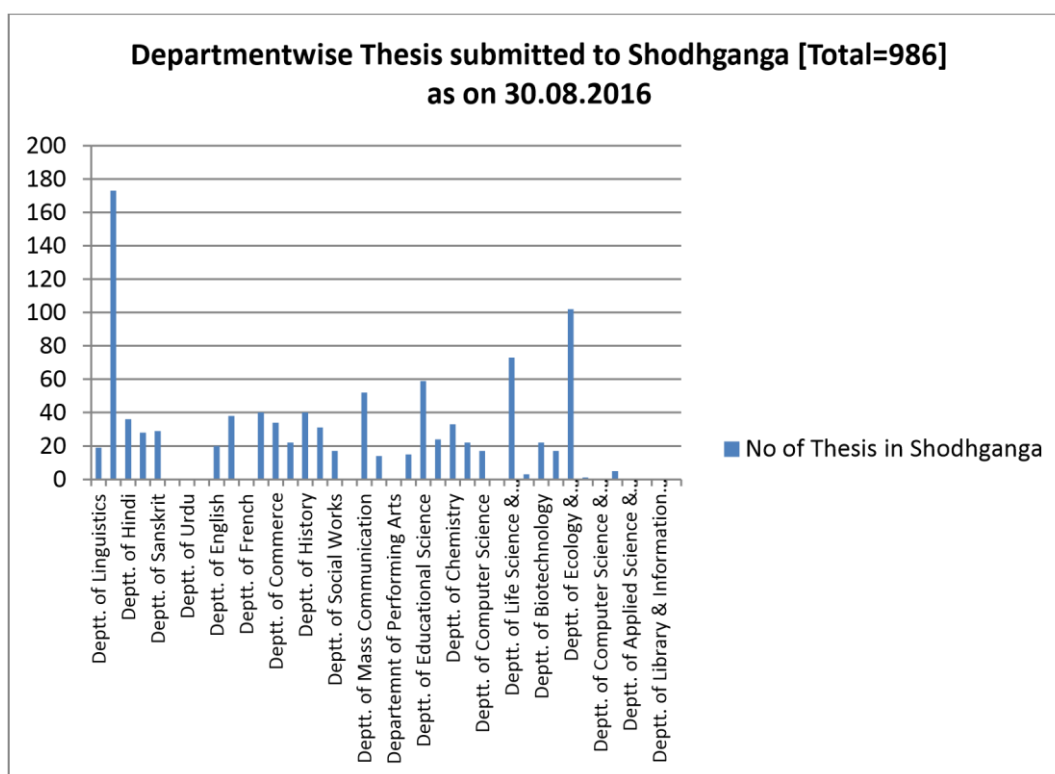


Fig.1. Graphical representation of Thesis (Department wise) uploaded to Shodhganga

S N	Schools	Thesis uploaded to Shodhganga (as on 12.09.2016)
1	Rabindranath School of Languages & Cultural Studies	285
2	Suniti Kumar Chattopadhyay School of English & Foreign Languages Studies	58
3	Mahatama Gandhi School of Economics and Commerce	40
4	Abanindranath School of Creative Arts and Communication Studies	66
5	SarvepalliRadhakrishnan School of Philsophy	0
6	AshutoshMukhopadhyay School of Education	59
7	Albert Einstein School of Physical Sciences	96
8	HargobindaKhurana School of Life Sciences	98
9	Jawaharlal Nehru School of Management Studies	17
10	EP Odum School of Environmental Studies	102
11	TrigunaSen School of Technology	6
12	Aryabhata School of Earth Science	0
13	Swamy Vivekananda School of Library Science	0
14	Deshabandhu_Chittaranjan School of Legal Studies	0
	Total	986

Table- 2. Status of School wise thesis uploaded to Shodhganga

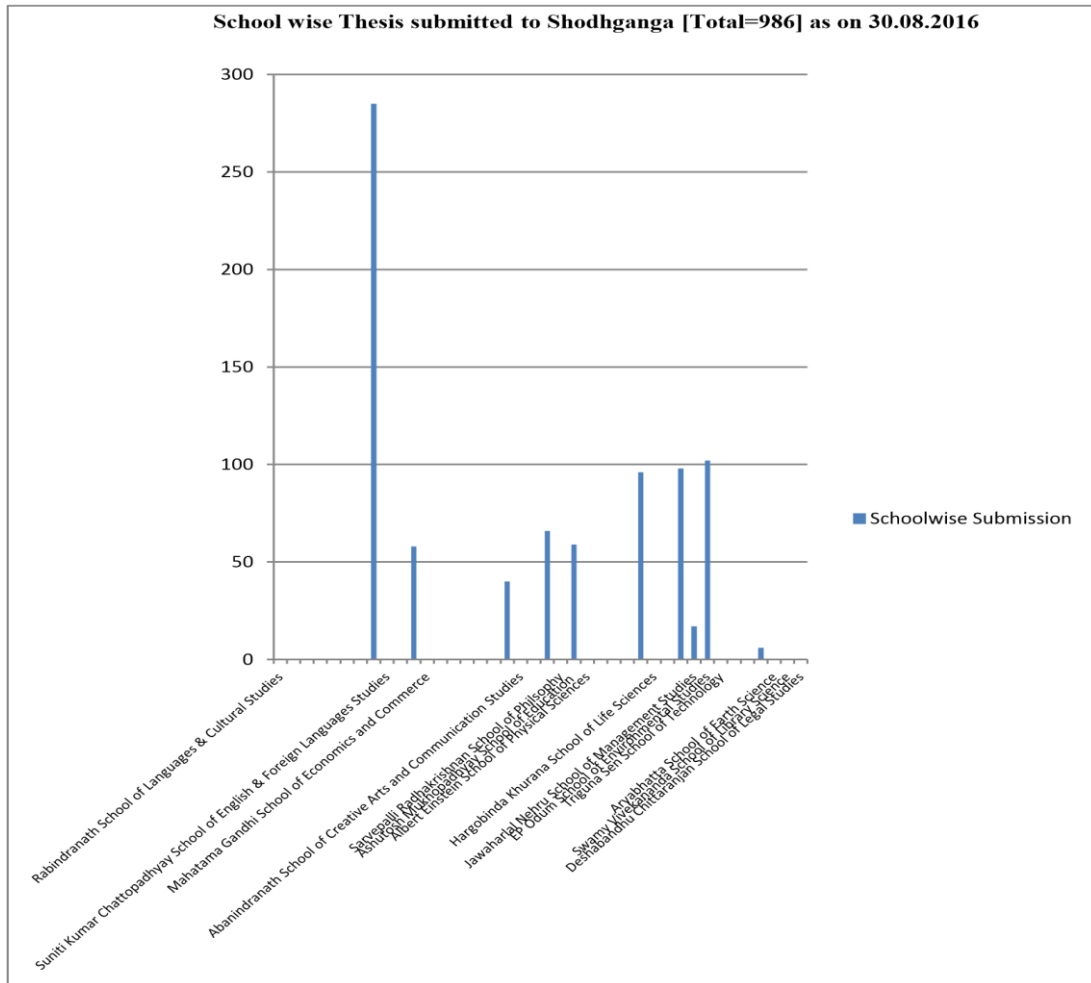


Fig. 2. Graphical representation of Thesis (School wise) uploaded to Shodhganga

Out of the amount allocated for the digitization of these, an open tender process was adopted and tenders were floated on the University website as well as local newspapers. After evaluation of tenders, the job was awarded to the firm qualifying all requisite conditions of the tenders. A team was deputed by the vender who unbound the thesis and then digitized the thesis under supervision of the Information Scientist. Then the OCR and metadata were given to the thesis and the firm uploaded the digitized theses to the Shodhganga_repository and also developed a Institute Repository for the University on E-Print.

Regarding establishment of the ETD Laboratory, the University has adopted the tender process and recently ordered for the following hardware(s)-

S N	Hardware	No
1	Server with Red Had Linux OS	1
2	Personal Computer with Windows OS	1
3	Book Scanner	1
4	Storage Device (2 TB Portable HDD)	1
5	Portable DVD Drive	1

Table-3: Hardware orderedfor ETD lab

The flow of submission of the PhD thesis, in Assam University, is that first it goes to the Academic Section alongwith necessary papers. From Academic section, it goes to Examination section and from Examination section, it is submitted to the Central Library. The theses, received in the library- are accessioned and only those theses have been uploaded to the Shodhganga Repository. During the entire process of submission, some theses may not be submitted to the library. Library is continuously making efforts to upload all the theses awarded by the University, to the repository- Shodhganga.

5. Conclusion

Shodhganga is an effort made by INFLIBNET to digitize all the theses and put them to open domain to make them accessible for all the researchers. The Institutions under MHRD/UGC are also contributing to the repository with full cooperation. Although there are some gaps in the process as some of the Universities and Higher Institutes of Learning (Like IITs, IIMs, and NITs) have not started submitting their theses to the repository. Day will come when the target fixed will be achieved 100% and long awaited dream will be fulfilled. The Institute repositories provide access to research publications and other digital documents of respective institutions. In India, some of the top researches contributing Institutions are still hesitant about putting their IDR to the public domain due to patent and other copyright issues but if work of an individual gets international recognition and attention, it would be matter of proud. The process and factors needs to be evaluated continuously and the guidelines for the submission need to be standardized.

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About Author

A. K. Sharma

University Librarian, Assam University, Silchar -788011 (Assam), India arun2929@gmail.com