

# Need of Collaborative Approach for Developing National ETD Repository

Anil Kumar Dhiman

## *Abstract*

*Digital preservation is an important task to be done for the safeguarding of the digital resources for future. Electronic Theses and Dissertations (ETDs) benefits are given in brief. Indian initiative in this direction has been traced. has made a case for collaborative approach needed for a national ETD in India.*

**Keywords:** ETD, India

## **1. Introduction**

ETDs are the results of open access initiatives which stands for “free availability on the public internet, permitting any users to read, download, copy, distribute and/or print, with the possibility to search or link to the full texts of articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself” ([http://www.opensocietyfoundations.org/open\\_access/read](http://www.opensocietyfoundations.org/open_access/read)).

Fyffe and Welburn (2008) are of the opinion that ETDs are the first targets for an institutional repository program, which represent an opportunity to engage graduate students and their faculty advisors in broader conversation about open access, intellectual property management, long term management of digital content, and other scholarly communication issues.

UNESCO ETD Guide website defines an ETD as “a document that explains the research or scholarship of a researcher/student. It is expressed in a form simultaneously suitable for machine archives and worldwide retrieval.” (<http://etdguide.org/>).

Hirwade (2011) defines ETDs as the “dissertations and theses prepared for submission as text-based Adobe PDF (Portable Document Format) files. They can contain non-text elements that cannot be incorporated into traditional hard-copy theses and dissertations. Multimedia, sound, video, and hypertext links can be included to expand and deepen the expression of ideas and the presentation of research”.

Thus, ETDs may enable readers to easily comprehend the research reported, may give them a complete understanding, and may facilitate subsequent follow-on studies (Fox et al., 1997). So, ETDs promote better research because of better exchange.

## **2. Why ETDs are needed?**

Doctoral theses and dissertations are the primary source of documents which contain lot of new ideas, innovations, and new results in highly specific topic. These are useful documents for further research and should be made accessible to everyone irrespective of their physical location.

In spite of number of sporadic efforts there is no single authentic source available where one can locate accurate statistics about the theses produced in India. Researchers often have difficulties in locating the relevant dissertations done by previous students as there is no uniform user interface to conduct a formal search for theses and dissertations. Theses and dissertations are important not only for an individual author, who looks for the maximum visibility and scientific impact of his/her work but also for advisors, academic departments, post graduate programs, and universities (Marcondes and Sayao, 2003).

Moreover, in India, the access policy to the theses collection varies from university to university. In most of the universities the access is limited. Recognising the need for increasing the accessibility of thesis documents, the Government of India and other agencies of national importance have framed distinctive policies and strategies to develop bibliographical and full text ETD databases (Hirwade, 2011). NKC (2006) strongly advocates open access to public-funded research literature. The theses and dissertations produced by state-sponsored researchers would then make accessible through open access channels, such as, ETD repositories or institutional repositories. It also advocates that present university system should also take proper measures to disseminate research papers, theses, and dissertations by establishing ETD/institutional repositories.

### 3. Potential Benefits for Students and Universities

There are many benefits of ETDs but Barua (2006) has listed following benefits of them under three heads.

- ◆ From users point of view
- ◆ From libraries point of view, and
- ◆ From institutional point of view

**From users' point of view:** ETDs provide many benefits. Most of us are fully aware that the dissertation or theses of many of us are not yet available on the library shelves, whereas if we had submitted them as ETD possibly they could have been accessible to global audience living far away from here. Thus the main benefit of ETDs is its reach. If it can be made available in the internet then it will be available to a global community and not just within the Institutional campus. Further they will be accessible 24 hours a day and 7 days a week. Unlike one copy one user access for traditional theses and dissertations (TDs), one ETD can be accessed by many at the same time. Also the student will have the ability to incorporate multimedia objects into his work which is not possible in common theses and dissertations.

**As far as libraries point of view is concerned,** ETD provides a solution to space requirements. As the collection of theses and dissertations grows libraries will find difficult to get space to shelve them but with ETDs space should not be a concern. Further libraries will be free from the tedious jobs of circulation, shelving, labelling, bar-coding, and cataloguing them. Thus, ETDs will reduce the time gap from receipt to

public access. ETDs can be submitted directly to the library server so that as soon as they are approved, they can become available to users, eliminating the need to move the documents from the departments to the library. ETD system will also enhance the library's reputation as a service provider and will also augment the digital library initiatives.

**From the Institutional point of view**, they boost its prestige and also give it a role to popularise the Open Archive initiatives to universalise knowledge. The increased levels of use of the material produced at a particular university can help to promote the research profile of the institution.

Elaborating further Fyffe and Welburn (2008), have addressed following benefits of the ETDs:

- ◆ Expressiveness: ETDs can incorporate a wider range of media than printed dissertations, allowing students to express their interpretations and research findings through colour, imagery, audio, video, and interactive media.
- ◆ Visibility: ETDs increase the visibility of students and their advisors, potentially leading to improved job prospects or graduate school placement for students and better recruitment for colleges and universities.
- ◆ Operational Efficiency: Theses and dissertations typically begin life as digital documents. Accepting and storing them digitally can be more efficient. Students are relieved of the expense of printing multiple copies of lengthy documents, and university units are relieved of the inefficiencies of inter office routing, collating, and storage of multiple copies.
- ◆ Knowledge Sharing: Most institutions find that ETDs are being downloaded hundreds if not thousands of times. By comparison, most printed theses and dissertations are seldom used. ETDs appear to be an effective way of sharing original research both across and beyond the academy.

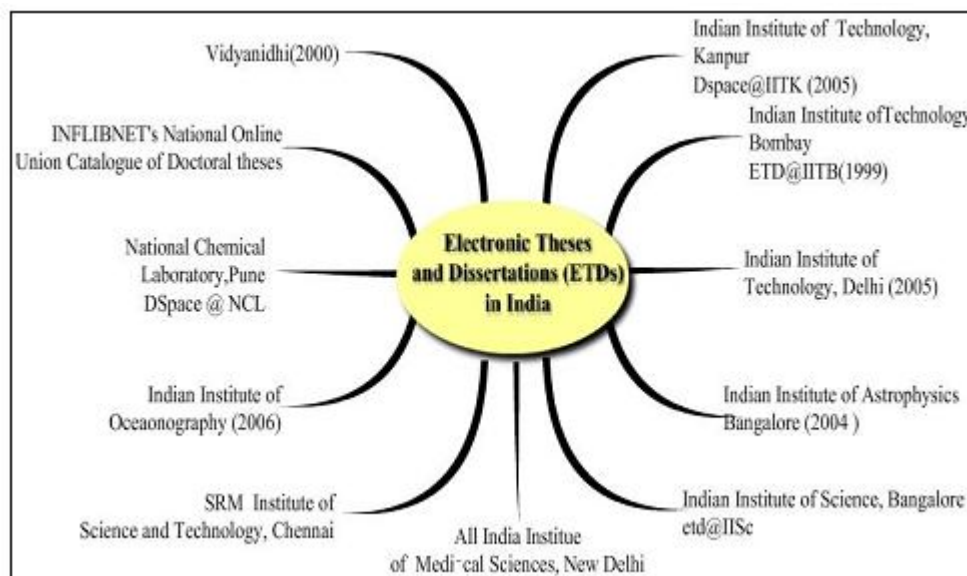
Overall, the greatest advantages of ETDs are avoiding duplication in research work, ensuring quick retrieval of information, promoting resource sharing, and providing a permanent solution to the problem of space.

#### **4. Major Initiatives in India**

ETD initiatives at the university levels were started with the initiatives of INFLIBNET, when it has created a database of Theses in the form of bibliographic records covering all subjects of all universities. Later, it was named as National Online Union Catalogue of Doctoral Theses. But INDEST consortium has been at the forefront in the provision of e- resources to India's premier Science and Technological institutions which made recommendation to set-up OAI compliant digital archives in the member institutions.

University of Mysore, in collaboration with NISSAT and Ford Foundation has initiated a project called Vidyanidhi to host individual full-text thesis from various universities who are willing to become a member of this project (<http://www.vidyanidhi.org.in>). This is a national level repository, covering a number of universities and deemed universities.

**National Social Science Documentation Centre (NASSDOC)** which is a constituent of Indian Council of Social Science Research (ICSSR) is working as a national repository of doctoral theses in the areas of social sciences ([http://www.icssr.org/doc\\_main.htm](http://www.icssr.org/doc_main.htm)). NASSDOC is also a partner organisation of Vidyanidhi. NASSDOC has acquired about 5000 doctoral theses in different areas of social sciences in its special collection.



**Figure: 1 ETD Initiatives in India**

**ETD@IISc** is an acclaimed open access ETD repository of Indian Institute of Science and a joint service of National Centre for Science Information (NCSI) and IISc Library. ETD@IISc hosts some operational guidelines and agreement forms, derived from the recommendations of the User Group, for the perusal of IISc researchers and members of INDEST Consortium.

A pictorial representation of major initiatives of ETDs in the country based on Ghosh (ca 2007), is shown in Figure 1. But according to Tripathi (2012), the following two programmes of INFLIBNET are doing well in the country.

◆ **ShodhGanga (<http://shodhganga.inflibnet.ac.in/>)**

This is an ETD repository created and maintained by INFLIBNET centre which is popularly known as Shodh Ganga (Reservoir of Knowledge). It serves as a platform for universities and researchers to deposit their PhD theses and make it available for the scholarly community in open access. INFLIBNET is an Inter University Centre (IUC) of UGC, India and provides infrastructure for sharing library and information resources and services among academic and research institutions. UGC, India has entrusted INFLIBNET with the responsibility of creating and maintaining Shodh Ganga. The repository is DSpace enabled and captures, stores, indexes, disseminates e- theses submitted by the researchers to the Indian universities.

◆ **Shodh Gangotri (<http://shodhgangotri.inflibnet.ac.in/>)**

This is the repository of Indian research in progress. Under this initiative of INFLIBNET, research scholars are supposed to deposit e- versions of approved synopsis which they have submitted to the universities for registration for doctoral programmes. Submitted synopses may be browsed globally. This repository aims at highlighting the research trends followed across Indian universities and thus prevents duplication of efforts in research. Once the full text of a particular thesis is approved, submitted, and uploaded, a link to the full text in Shodh Ganga from synopsis in Shodh Gangotri is provided.

### **5. Problems in Developing ETDs**

ETD repositories have the problems like - copyright issues and fear of plagiarism, unwillingness of faculty and researchers for submission of ETDs, lack of policy to safeguard for long term preservation of ETDs, lack of skilled human resource, etc. Besides, lack of manpower, lack of optimisation and software to be used are also some of the problems which might hinder the development of a good ETD. But they can be sorted out by forming ETD consortium very well.

An ETD consortium is a product of collaboration among the institutions. Different ETDs initiatives working in the country may form a consortium to overcome problems. Southwick and Pavani (2004) have listed the following objectives of ETD consortium:

- ◆ To help the institutions to start projects by raising the awareness on the importance of ETDs.
- ◆ To discuss and create standards to allow interoperability.
- ◆ To share software solutions.
- ◆ To offer training activities, and
- ◆ To build union catalogues.

Southwick and Pavani further state that the results of creating a consortium are beneficial to the geographical area it covers, whether a region, a country, or a segment of, or the entire, world. Four components are essential for establishing a consortium:

- ◆ ETDs – higher education organisations that host graduate programs are the main participants in a consortium since ETDs are repositories of work produced by university graduate students.
- ◆ Coordination – efforts must be aligned to achieve a common goal; tasks must be assigned to and completed by participants; and information services must be offered having both quality and reliability.
- ◆ Cooperation – a consortium presupposes that its members would share their resources - technology, services, and knowledge – so that participants benefit from each other's experiences in providing access to their own ETDs.
- ◆ Integration – a consortium does not require that all members adopt a common technological solution to implement their local ETD digital libraries. However, regardless of the solution adopted, these digital libraries must be integrated. Integration is reached through the definition and adoption of standards

for interoperability which allows local system characteristics to be preserved. The adoption of interoperability standards is essential for creating national and international ETD information services.

Of course, one must add to this mix a strong element of collaboration work! But as Fox (1998) states “universities have theses and dissertations, and smaller institutions have bachelor theses and other major papers. These parts of the “grey literature” are largely ignored and disappear from view”. Hence, they need the attention for wider access. Thus, there seems a need for developing a National ETD which could satisfy the need of every type of the users.

## 6. Collaborative Approach needed for a National ETD

The term collaboration is used to denote any individuals or groups who are working together on a project or initiative. Creating and maintaining an IR or ETD entails lot of technical expertise and collaborative efforts on a regular basis. Individual initiatives by the staff cannot offer long term gains. It has been observed that many IRs and ETDs are started by individual initiatives, but are not maintained as individuals have lost interest with passage of time (Tripathi, 2012). Thus, a collaborative approach is required for developing and continuously maintaining them.

ETD projects offer many opportunities for collaboration, both within the university and among universities. Fyffe and Welburn (2008) states that ... There is opportunity for fruitful agencies leading to serious campus discussion on collaboration between the two campuses on over the entry of new generations of scholars into the system of scholarly communication.

It has been a debatable question for a long time – who should take initiatives of developing and maintaining an ETD, the library or the academic section of the university / institute. Besides, the importance and culture of ETDs is still less among the planners and administrators. They may feel that the same funds can be utilised elsewhere. The supervisors and students feel that other students may use and plagiarise their ideas, concepts and research findings and the original authors may not get the credit due to them (Greig, 2005).

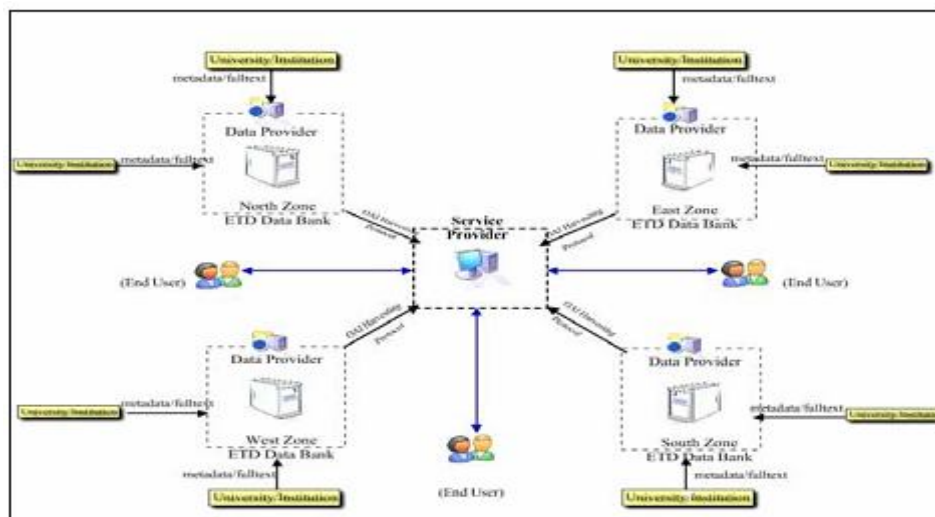


Figure 2: National ETD Model

So, it is the right time to develop a national ETD repository. An effective model shown in Figure 2 is proposed by Ghosh (ca2007), to sustain the service and infrastructure, and fund the digitisation of theses currently available only in hardcopy at the participating institution. She states that the national ETD repository would have the following architecture:

- ◆ Four zonal data banks as data provider and a central agency as service provider; the service will not be for-profit.
- ◆ Participating universities/ institutions will be offered a choice of two participation options: data provider and ordinary member.

A central agency would work closely with the zonal data banks and other stakeholders to develop standards and tools to support local developers. A minimum subscription fees can be charged if necessary from those libraries requesting documents and have not contributed any data. The data providers or members of the national networks and consortium may avail services at free of cost. The core services of content upload to the Central Hub/ metadata harvesting will be open to all higher educational institutions. The central server will serve as a common database built with metadata gathered from local e-theses server or zonal databank.

Small libraries without digital library infrastructure can directly upload theses into the server of the zonal databank. In order to achieve the interoperability between four zonal systems and central server an intense effort of standardisation is essential. The adoption of a common metadata set is a fundamental step to achieve interoperability between zonal ETD data banks. The central server will offer ETD services tailored to the requirements of the institutions without local repositories.

The centralised activities will include: standardisation of record formats, quality control monitoring, distribution /dissemination of full text, data integrity for the central server, access authorisation to document delivery, management and maintenance of the central server. On the other hand decentralised activities will have: data entry and editing, quality control, storage, archiving and preservation, copyright and IPR control for full text, etc.

ETD Awareness program/ promotional activities can encourage cooperation among institutions that are planning or have implemented ETD programs. Hirawade (2011) thinks there is a need to sensitise all the stakeholders about the need and issues involved in the creation of ETDs. Workshops and training programs for both students and faculty need to be conducted on issues of copyright, choice of access, and encourage researcher to submit theses online.

## 7. Conclusion

India is a major South Asian country, where an array of specialised research institutions, research centres, and universities are situated. Das, Sen and Dutta (2007) explored the policy frameworks, strategic dimensions and analysed the existing ETD initiatives in India and found that national ETD initiatives are still in a developmental phase and the stakeholders are waiting for concrete policy frameworks by the national

accrediting and granting agencies. ETD programs offer several potential benefits to students and institutions alike, including increased expressiveness and savings in cost, space, and time. Due to this now the e-submission for the theses and dissertations is being given importance in Indian universities and colleges. Because of this with the passage of time, the digital preservation of ETDs is in progress (Ghosh, 2009) but these are in their starting phase in India (Dhiman, 2012).

Recently, a study by Sengupta (2012) revealed that Asian countries like China, Japan, and India have quality academic and research institutions and their ICT market has been developing. It is imperative for Asian countries to increase the number of their ETD repositories and thus contribute more to the worldwide scholarly communications. So, it is need of the hour to produce social goods and social applications, rather than merely providing research degrees.

More efforts need to be taken to sensitise the faculty members and the researchers to the importance of ETDs, which will facilitate free flow of information. Though INFLIBNET is now taking steps in this direction.

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#### About Author

**Dr. Anil Kumar Dhiman**, Information Scientist, Gurukul Kangri University, Haridwar.

E-mail: [akvishvakarma@rediffmail.com](mailto:akvishvakarma@rediffmail.com)