Electronic theses and dissertations*

Who owns the copyright of a doctoral thesis, and who will be the authors in case a doctoral thesis gets published as a monograph? These are the most important questions being asked in any conference related to electronic theses and dissertations (ETDs). The 18th international symposium of electronic theses and dissertations (ETD2015), organized for the first time in South Asia and for the second time in the Asian region, was no exception.

The symposium was organized recognizing growing interests of Indian universities to make their doctoral and pre-doctoral (e.g. M Phil and M Tech) theses and dissertations visible, available and accessible worldwide through open access (OA) knowledge repositories. The Information and Library Network (INFLIBNET) has established a national OA digital repository of e-theses named 'Shodhganga' (Shodhganga.inflibnet.ac. in). Shodhganga facilitates implementation of the University Grants Commission (UGC) regulation titled 'UGC (Minimum Standards and Procedure for the Award of M Phil/Ph D Degree) Regulation 2009', which mandates electronic submission of doctoral and pre-doctoral theses. UGC regulation also encourages establishing institutional or university-level OA knowledge repositories, in addition to a national-level repository such as Shodhganga, to make Indian e-theses freely accessible globally. This effort will successively help in monitoring or improving the quality of doctoral and pre-doctoral theses by the global researchers and peers.

The country has also witnessed the development of several OA initiatives in the past decade to disseminate doctoral works to the national and global researchers. The most notable ones are: KrishiPrabha: Indian Agricultural Doctoral Dissertation Repository, CSIR Explorations, ETD at the Indian Institute

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of Science (ETD@IISc), Vidyanidhi at the University of Mysore, Dyuthi Digital Repository at Cochin University of Science and Technology (CUSAT), and EPrint at the Indian Institute of Technology Delhi[1,2]. Many other institutional OA initiatives in India, which disseminate ETDs produced in the country, are recorded in the global directory of OA repositories, such as Directory of Open Access Repositories (OpenDOAR.org), Registry of Open Access Repositories (Roar.eprints.org), and Directory of Open Access Scholarly Resources (ROAD.issn.org).

More than 400 delegates from India and abroad attended the symposium. It also attracted institutional policymakers, repository administrators, OA practitioners, and metadata indexers who participated in discussing technical and infrastructural issues while implementing ETD services at their respective universities and research institutions. In the inaugural session, the Networked Digital Library and Theses and Dissertations (NDLTD) executive director and Virginia Tech professor Edward A. Fox announced the launching of 'NDLTD Global ETD Search' (Search.ndltd.org) – a global search engine dedicated for searching ETDs at the metadata level covering ETD initiatives across the world. Here, full-text access is provided through hyperlinks to the respective repositories. Indian ETD initiatives are gradually included on this platform. In the welcome address Ramesh C. Gaur (Chair of ETD2015 and librarian at the Jawaharlal Nehru University (JNU)) informed that JNU is a major contributor to the Shodhganga initiative, contributing the highest number of ETDs on the platform. Prasenjit Sen (JNU) appraised a new set of sustainable development goals (SDGs) that the member states of the United Nations adopted in September 2015 in the United Nations General Assembly, to be achievable by 2030. The ETD symposium takes note of the innovative and fascinating doctoral and pre-doctoral studies being undertaken in universities across the world. Many of these theses and dissertations will address the new set of SDGs and their sectoral targets.

The co-chair of ETD2015, Jagdish Arora (INFLIBNET Centre and co-chair of ETD2015), appraised the OA initiatives of INFLIBNET, namely Shodhganga for disseminating full-text contents of awarded ETDs, and ShodhGangotri for disseminating approved summary of Indian doctoral and pre-doctoral research in progress. He also informed about the 'e-PG Pathshala' initiative of INFLIBNET (Epgp.inflibnet.ac.in) that creates and disseminates the open educational resources to the lifelong learners, higher students and educators. It also helps in knowledge enrichment and skills development of the end-users. Many of these initiatives got funding from India's flagship NME-ICT (the National Mission on Education through Information and Communication Technology) programme. He also highlighted the salient features of the UGC Regulation 2009 and the transitions that the Indian universities are expected to undertake to make Indian doctoral scholarships visible, available and accessible over the internet, and to make Indian doctoral researchers more open to the global collaborations[1].

The symposium provided a platform to the ETD initiatives from different parts of the world to showcase their success stories and to highlight the best practices. Comparative analysis of ETD initiatives was presented to draw attention to strengths and weaknesses of the respective repositories. For example, *Google Scholar* search engine does not index Shodhganga at the appropriate level as the latter maintains fragmented files for a single thesis, whereas standard practice is to maintain a single file for a thesis. Indian ETDs are not adequately indexed with popular academic search engines such as *Google Scholar*, Microsoft Academic Search and BASE, due to their deviations from the global standards or best practices. Some speakers indicated that standards and best practices related to metadata and full-text curation of ETDs are evolving; there is need for a better understanding of issues related to interoperability, cross-walk and federated search. The administrators of institutional ETD repositories should carry regular upgrading of content management systems and add-ins to achieve full functionality

of ETD resources. The security of their web-servers should be tuned to allow search-engine crawlers to extract metadata from the OA repositories.

On the third day, ETD2015 organized a panel discussion on 'Information literacy and research skills for students: the role of academic libraries', where panelists emphasized on imparting information and digital literacy skills to doctoral and pre-doctoral researchers. They highlighted the usefulness of engaging an assistant professor in information and digital literacy in every school, or faculty of a university for capacity development of the research students and early-career researchers. Many Western universities have created such academic positions to keep pace with the changing scenario in the academic environment and ICT-enabled infrastructures. Here services of the subject-area librarians, documentation officers, research officers and information scientists can be availed, and they can be re-designated as assistant professors in information and digital literacy.

In a UNESCO special session 'Reaching the unreached through ETDs: research support services for persons with disabilities', the panelists highlighted issues of inaccessibility of digital resources available with the public portals and institutional websites. Here the issue is not related to unavailability, but availability in wrong formats that are not suitable for persons with visual impairment or low-vision. For example, many Ministries and Departments of the Union Government publish their gazette notifications and public policy documents and upload them on their respective websites. The file format used (i.e. image-based PDF) is not suitable to read using a screen reading software, as the software can only read a searchable textual PDF file or a Unicode-based text file, which the Ministry or Department does not provide. Text-to-speech software does not always work with the majority of Indian websites, maintained by Government agencies and universities. There is a need to sensitize website administrators, and an appropriate web accessibility standard should be applied while maintaining institutional websites, OA knowledge repositories and on-line ETD services. The workflow must ensure conformity to the W3C accessibility standard before web contents go live. Here some panelists highlighted the usefulness of publishing ETDs in ePub format for disseminating to persons with visual impairment or low vision.

The symposium catered to a focal theme 'Evolving genre of ETDs for knowledge discovery'. The participants took note of the global best practices and available technologies for building an ETD ecosystem. The event facilitated a platform of mutual learning and knowledge-sharing. The delegates shared their experiences, challenges and success stories while reporting their national or institutional ETD initiatives, which are not only physically located in developed countries, but also in the developing countries. At the end of the symposium, NDLTD extended its subsidized institutional membership offer to the Indian universities through the INFLIBNET Centre for facilitating mutual learning, capacity enhancement, and regional and global collaborations.

1. Ghosh, M., *Int. Inf. Libr. Rev.*, 2009, **41**(1), 21–33.
2. Das, A. K., Dutta, C. and Sen, B. K., ETD policies, strategies and initiatives in India: a critical appraisal, 2007; http://eprints.rclis.org/9944/

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