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LITHUANIAN ELECTRONIC THESES AND DISSERTATIONS (ETD) PROJECT AS A PILOT PROJECT FOR THE BALTIC STATES

14 высших учебных заведений Литвы и Рижский технический университет выполнили проект «Пилотный проект ETD Литвы для стран Балтии», финансированный организацией UNESCO. Этот проект проведен в рамках международного проекта «Сетевая цифровая библиотека электронных тезисов и диссертаций» (NDLTD).

В статье представлены результаты проекта, полученные при решении организационных и технических вопросов, связанных с созданием информационной системы электронных тезисов и диссертаций (ETD) Литвы. Определена устойчивость и воздействие этого проекта, показаны пути его дальнейшего развития. Даны рекомендации проведения подобных ETD проектов в других высших учебных заведениях стран Балтии.

Introduction

Lithuanian Academic Libraries Directors Association (LABA), the administration board of the establishment program "Information Technologies for Science and Higher Education 2001-2006" (ITMiS) [1] and Kaunas University of Technology (KTU) are the main driving force of Lithuanian Academic Libraries Network project (LABT) [2]. The Ministry of Education and Science of the Republic of Lithuania supports the establishment of ITMiS program. LABT is subprogram of ITMiS.

The goal of LABT is to create Lithuanian academic virtual library through the automation of libraries, unification of search and access to information sources and virtual services. LABT currently links together 16 universities, 19 colleges, the library of the Academy of Sciences of Lithuania, 40 research institutions of sciences and as such represents Lithuanian Academic Library Consortia (LABA). ALEPH library automation software was adopted and implemented in all LABT member libraries. The primary task for the near future is the extension of LABT databases up to full-text databases.

A new theme "Electronic Publishing and Full-text Databases in Lithuania" was initiated under ITMiS program in 2002. A large expert group of librarians, publishers and ICT specialists was formed for investigation of requirements and possibilities (feasibility study) to start implementation works in this field. LABA administration board has made a decision to create Lithuanian electronic theses and dissertations (ETD) working group in 2003. The main task assigned to this group is to carry out the investigation of the requirements and possibilities to collect Lithuanian ETDs, to archive them, to create virtual services for ETDs. At the suggestion of this group LABA administration board has made a decision to join NDLTD initiative [3] in May, 2003. Further proposal of project "ETD Lithuania Project as Pilot for Baltic States" was prepared and later approved by UNESCO. As a result the contract between Kaunas University of Technology and UNESCO was signed on 15th December, 2003 and it continued until the 31st of March, 2004. The 14 Lithuanian higher education institutions (further - Institutions) and Riga Technical University have implemented the project "ETD Lithuania Project as Pilot for Baltic States" (further - Project) financed by UNESCO. KTU Information Technology Development Center (ITDC) was the main coordinator of development and technical implementation of this project.

Main Goal and Objectives of the Project

The Project main goal is, following recommendations of "UNESCO ETD Guide" [4], to prepare and implement the pilot project of selecting, collecting, long term preservation and publishing ETD of master's and doctoral students (further – Students) of universities participating in the project, to prepare continuance presumptions and to disseminate the achieved results to other universities of the Baltic States.

The Project fulfills the objectives of project NDLTD under the auspices of UNESCO:

- Improvement of the quality of ETDs by providing the possibility to evaluate them within international dimension.

- Enrichment of ETDs with international experience by using the information of the ETDs information system (IS) of other countries.

- Increase of the accessibility of the scientific research results and the ETD to the Lithuanian and foreign public.

- Appliance of results of researchers to the complement and renewal of the degree programmes.

- Reduction of the possibilities of plagiarism in preparing the ETDs.

- Encouragement of Students of the Institutions to prepare ETDs by using the technologies of multimedia and hyper-multimedia.

- Creation of more favorable conditions for Students to use the advantages of electronic libraries and electronic publishing.

Seven main Outcomes (Outcome1 – Outcome 7) have been prepared and solved for achievement of the main goal and objectives of the Project. These Outcomes are presented in the section 3.

Outcomes of the Project and Achievement of them

Outcome 1: **Work plan, names, letters of agreement prepared and sent to UNESCO on December 19, 2003**	Deadline: **19 December 2003**
Communications with participating institutions and collection of information on these institutions, contacts persons and trainers	
Obtaining of letters of agreement from participating institutions	
Detailed work plan development	

Outcome 2: **ETD server hardware purchased and installed**	Deadline: **15 March 2004**
Tender documentation preparation *Tender documentation was prepared according to Lithuanian Regulations for Public Purchases and Competitors Invited to Tender (executed on 13/02/2004)*	
Tender execution *Meeting of the Tender Commission was held on 26/02/2004 and the Tender results were approved on 27/02/2004*	
Hardware purchase and installation. (executed on 15/03/2004)	

Outcome 3: **ETD software installed and configured**	Deadline: **15 March 2004**
Linux *operating system* installation and configuration *Red Hat Enterprise 3 ES operating system installed on a new server.* *All software were migrated from test server to a new one*	
Open source repository software installation and configuration *"ETD-db" software from Virginia Tech was adapted to Lithuanian ETD project needs (now it is called SUBMIT) [5]. Some additional features were coded to make a better support for high education institutions (multilingualism, gathering more data and etc.).*	
Open Digital Libraries components installation and configuration *ETD-db modules were re-coded:* - *ETDs submission module: with this module students submit ETD metadata and files. Added extra functionality, more fields for metadata gathering;* - *ETD review module: it enables to modify and approve submitted works. Added extra functionality;* - *NDLTD-OAI module: special module designated for sending data to NDLTD ETD Union Catalog [6]. The module uses OAI-PMH 2.0 protocol version.* *A new module for users management coded*	

Outcome 4: **ETD catalogue environment on ETD server is ready**	Deadline: **15 March 2004**
ETD catalogue environment setup in ALEPH library automation system *ETD01 catalog was configured in ALEPH library automation system:* *- Search/browse indexes;* *- Display formats (full, for summary and output according to ISBD);* *- Logical bases for master's thesis, doctor's dissertations;* *- Link to National Authority files*	
ETD catalogue access environment setup in MetaLib portal *A new resource named "ETD Catalog" (linked to LABT ALEPH ETD01 catalog) was configured in MetaLib. This resource is worldwide available and everybody can search within it. This resource can be found at* [7].	
ETD repository access environment setup in SFX system *From the record found in MetaLib a new SFX service (named "ETD Archive") is available. This service provides possibility to access/download full-text files residing in ETD repository server. This service has free access. Special program was coded to create this service*	
Outcome 5: **ETD catalogue and repository filled with data**	Deadline: **31 March 2004**
ETD documents conversion and loading into repository *Software for automated bibliographic records loading into ALEPH catalog was coded. Bibliographic data, generated by SUBMIT software, archiving were provided to ensure bibliographic data consistency. Possibility to load bibliographic data into ALEPH ETD01 catalog was provided*	
ETD bibliographic data conversion and loading into ETD catalogue *Specification "ETD Bibliographic Data Conversion" was made for metadata conversion.* *Converter software was coded. Converted data from ETD-MS format to UNIMARC was loaded in ALEPH ETD01 catalog by ALEPH software*	
Outcome 6: **Workshop passed**	Deadline: **29 March 2004**
Trainer search and invitation *Special Contract with Trainers, Software Developers and Contact Persons for all Partner Institutions was signed on 2 January 2004. A separate report on implementation of ETD project in Partner institution was prepared by every Contact Person.*	
Workshop planning *Two workshops were planned*	

	Workshop organization
	The first workshop was organized on 26 February 2003. *The second workshop was organized on 29 March 2004.* *In the both workshops were approved there main achievement results of the Project:* • *46 master theses (defended on January 2004) ETD and their metadata of KTU of Faculty Informatics and a doctor dissertation summary ETD and its metadata of Riga Technical University were collected.* • *The vision of Lithuanian ETD Information System (further - IS) was formed: Lithuanian ETD IS is a cohesive whole of the ETD IS of all Institutions, which is created, maintained and used applying the same methodology and software, and by storing data in the same storage.* • *Institutions ETD committees were established in all Institutions participating in the project.* • *KTU ETD committee prepared KTU ETD IS regulations project.* • *According to KTU ETD IS a regulation project, ETD committees of all other Institutions prepared their own ETD IS regulations and indicated the ETD presentation scope of the master's student final papers, doctoral dissertations and their summaries.* • *ETD IS regulations project approved by all Institutions ETD committees.* • *Responsible persons in each Institution were selected, who, with help of KTU ITDC specialists, can organize training for their Institution Students how to place ETD and metadata to the Institution's and Lithuanian ETD IS.* • *Special program SUBMIT is used for submitting the ETD and metadata into the Lithuanian ETD IS and administering it. The program SUBMIT can be obtained [5].* • *KTU ITDC is going to carry out the installation, maintenance and renewal of the Lithuanian ETD IS software as well as the storage of data, archiving, helping the Institutions to organize training, providing consultations on various ETD IS issues.* *All the results of the workshop and all the documents related to Lithuanian ETD project are presented on [8]*

Outcome 7: **Final report and financial statement prepared and sent**	Deadline: **31 March 2004**
Final report preparation *The Final report (the 1st part of this document) was prepared on 31 March 2004*	
Financial statement preparation *The Final report (the 2nd part of this document) was prepared on 31 March, 2004*	

Impact of the Project

The main impact of the pilot project to the institutions: initiated ETD modeling, workflow, preservation, access and delivering processes. This is a great experience for

the further similar ETD activities in the institutions in the region as well as much bigger national level project "Electronic Publishing and Full-text Databases in Lithuania".

Another impact – this project had demonstrated its feasibility to the administration of institutions members of the pilot as well as other institutions in the region. ITMiS program committee had included ETD as one of its primary tasks.

Sustainability and Recommendations

Further institutional ETD information system development and maintenance will be financed by institution.

The creation and maintenance of the Lithuanian ETD IS are associated with the development of the LABT subprogram of the ITMiS program and financed by ITMiS and other Lithuanian and foreign programs, and other assigned or received financial resources.

The creation of Lithuanian ETD IS, like the one of thematic full-text databases, was intended in the national project "Lithuanian Virtual Library and Full-text Databases Development", which was rendered to get the promotion of the European Union Structural Funds.

Recommendations to be used by other universities in the region:

- Universities should establish their institutional ETD committees. Committee members should be: key institution administrators (rector, vice-rector, or adequate), faculty administration representatives, science and study administration representatives, library and IT department representatives).

- Universities should prepare their institutional ETD information system regulation documents. The documents prepared by KTU may be used as a basis for other universities regulation documents.

- Universities can choose one of the two options: to create their own ETD information system environment or to use KTU installed hardware and software. We recommend to use KTU installed ETD information system hardware and software at least for the Lithuanian higher education institutions reducing ETD management and preservation costs and to use hardware purchased under this pilot project. KTU guarantees to preserve the copyright and intellectual property rights of the authors.

- Universities should use their library information system for storing, preserving, providing public information search of ETD metadata. Lithuanian and Latvian academic libraries use ALEPH, and Estonian – INNOPAC library automation software. To improve ETD access and full-text delivery, university metadata catalogs would be connected to the Lithuanian virtual library portal MetaLib where SFX software would guarantee access and delivery of ETD full-texts to the users.

- ETD should be preserved in native and PDF formats.

- ETD gathering process must be strongly synchronized with study programs and Work defense scheduling.

Conclusions

The Pilot project had a great success. The main conclusions:

- The Pilot project had a great impact on ETD processes initiation and acceleration in the institutions of the region.

- The Pilot project execution had confirmed feasibility of its ideas and concepts.

- ETD digital library software recommended by "UNESCO ETD Guide" is suitable for the institutions in the region with a few customizations.

- Initial information and organizational infrastructure for the ETD was created in the institutions members of the pilot project.

- ETD digital library is created and is available for the public.

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