Digitální knihovna VUT v Brně – představení institucionálního repozitáře

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BUT DIGITAL LIBRARY –

INTRODUCTION OF INSTITUTIONAL

REPOSITORY

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Abstract
The Brno University of Technology (BUT) Digital Library is an institutional repository running of DSpace (version 5.3) initially created in 2007 as a repository for theses. The Digital Library's range of services is gradually growing and this paper deals specifically with repository services, the process for publishing theses, and support for open access. The repository enables authors

to store the research results in open access mode. Full text is integrated into the national Czech systems for reporting publications (RIV).

Keywords

DSpace, Institutional Repository, The Brno University of Technology, Open Access, Theses

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Introduction

Brno University of Technology was founded in 1899, is one of the oldest universities in the Czech Republic and the first university in Moravia. Its library – to which the Central Library is still indirectly linked today – was founded in the same year as the university. Not only the new époque, but also legislative conditions have led to a repository named the Digital Library (DL) taking shape at the Brno University of Technology.

Perhaps the greatest motivation for the establishment of the DL was the issuing of Rector Directive No 9 of March 2007 "Editing, submission and publication of theses and dissertations at Brno University of Technology". This directive was a reaction to changes in the Higher Education Act (Act No 111/1998, as amended by Act No 552/2005) (Česká republika, 2005) and for the first time introduced the mandatory submission of works in electronic form.

The objectives of this paper are to summarise the history of the Digital Library in Brno (**https://dspace.vutbr.cz)**, and to describe its contents and other activities closely related to its operation.

The first system – DigiTool

The Central Library at Brno University of Technology reacted to the need for a repository by submitting the University Development Fund project "Building the Digital Library of Brno University of Technology", adopted in 2007 and implemented the following year. The objectives of the project were to acquire and put into operation a server, the DigiTool system, and to fill the Digital Library with full-text records. The DigiTool system was mainly selected to secure full support by the supplier. The system also had a similar foundation as the Aleph library system, and thus facilitated easier connection of the two systems. The DigiTool system was operated between 2008 and 2010 and an internal process for the submission and publication of electronic theses and dissertations (eVŠKP) was set up at Brno University of Technology. In 2011 there was an evaluation of the course of the project. The DigiTool system was shown to have poor future prospects – in particular due to the fact that the producer had stopped developing the system, there was practically no supportive user base, and due to the pricing policy. This unsustainable state meant the need to select a new system.

The DSpace system was finally selected from several possible options – it is one of the most widely used systems for institutional repositories (including in in the Czech Republic) and thus provides extensive user support. One great advantage of this system is its free distribution method (open source), which represents savings on maintenance and licencing costs.

DSpace

The DSpace system was installed and put into operation in 2012 with the help of employees from the Computer and Information Services Centre (CVIS) at Brno University of Technology. Initially, DSpace was operated in version 1.7. It was upgraded to DSpace 4.0 in 2014, and to DSpace 5 in 2015 together with the new, responsive Mirage2 design. The system has also undergone significant technical changes – after long consideration the database was changed from Oracle to PostgreSQL. This solved some problems that it had not been possible to reliably rectify, and will perhaps also prevent future problems. Postgre is used by most DSpace installations – problems and errors are corrected faster, and support is also much more comprehensive.

Content of the Digital Library at Brno University of Technology

The Digital Library at Brno University of Technology fulfils the function of an institutional repository – it collects, manages and provides access to works created at the university. It actually only retains so-called born-digital materials. There is no sophisticated digitisation workplace with the task of systematically digitising historic materials at the Central Library. The content of the repository is divided into collections and sub-collections (according to the DSpace taxonomy, these are communities, sub-communities and collections) depending on the type of stored record. Root collections (communities) preserve and make available:

- Magazines
- Certified methodologies
- Publication activity of employees at Brno University of Technology
- Proceedings from conferences
- Central Library
- Scientific writings
- Brno University of Technology annual reports
- Theses

If appropriate, the collections will be further divided by faculty, and also by institute and department for the publication activity of Brno University of Technology staff.

Undergraduate theses

Theses represent the largest collection in the repository. All eight faculties and one university institute (of Forensic Engineering) contribute to this collection of theses. These are undergraduate theses and dissertations dating back - for some faculties - to 2006. The first records differ between the faculties. It always depends when the faculty began using the unified workflow in the university's information system. In September 2016, the repository contained 43,603 records.

Theses are taken from the university information system and are available at least five days before defence. The linking of the DSpace system and the information system is performed by a synchronisation program primarily using the REST API model. Each record always has a metadata description and reference attached in an HTML file. The metadata transferred from

the information system are not manually revised, and the students themselves or the supervisors who confirm the entered data are responsible for formal correctness.

Publication activities of Brno University of Technology staff

The collection of publication activities by Brno University of Technology staff forms an important part of the repository. Brno University of Technology employees may publish the full texts of articles from specialist magazines, papers from conferences and chapters from books through the Digital Library. A special section for entering full texts has been created in the Apollo university information system in the module for reporting publication activity. The author may decide whether or not they want to publish the stored text in the repository (if not, the space serves an archive function for the author). After registration of the application, the full text is checked by the repository manager. This is primarily an analysis of whether it is possible to publish the full text and whether it is properly described through its metadata. The full text is placed into the repository and becomes freely available only after approval. It is also possible to set a time embargo according to conditions imposed by publishers – the publication of the whole record in the Digital Library is then postponed until a specific date. The entry process is described in the instructions at **https://www.vutbr.cz/uk/digitalni-knihovna/jak-zverejnit**.

The obligation to enter full text is not regulated by any internal regulation, with the exception of articles supported from the Fond Open Access grant programme. The self-archiving of own texts is a procedure that is used more frequently, yet is not sufficient. At the present time, therefore, we are focusing on analysing ways to increase the number of entered records. The plan includes both contacting authors (e.g. by preparing a summary of publication activity and cooperation with storage in the repository) as well as a possible policy change at the university to introduce the mandatory submission of full text.

Figure 1: Form for entering an article via the Apollo information system

Magazines

Magazines produced at Brno University of Technology are systematically stored in the Digital Library. The first archived magazine since the Digital Library was put into operation was the magazine Události, issued by the Nakladatelství VUTIUM publisher. This is a magazine providing information about events at the university. The magazine editors are individually contacted with an offer to archive the magazine in the Digital Library. This was expanded to include the magazines Mathematics for Application, Kvaternion (both from the Faculty of Mechanical Engineering) and Trendy ekonomiky a managementu [Trends in Economics and Management] (Faculty of Business and Management). The magazine with the largest number of articles stored in the DL is Radioengineering (Faculty of Electrical Engineering and Communication). The Digital Library currently holds a total of 1,640 articles from 94 issues of this magazine. The articles were placed into the Digital Library retrospectively from 1992. A magazine makes its content available under the CC-BY licence and is also indexed in Web of Science and in Scopus.

Conference proceedings

Papers from conference proceedings form an equally important part of the Digital Library. Often the full texts of the proceedings are only provided to conference participants (on CD or flash disk) and, in the better case, the whole proceedings are placed on the conference website as a PDF, which however does not have a long lifespan. The Central Library is working to contact

faculties with an offer to archive such proceedings. Currently, 18 proceedings from six conferences have been placed in the Digital Library.

Certified methodologies

Mainly due to requirements from the Ministry of Culture, we have also incorporated into the repository our own collection of certified methodologies. Both the record and the full text of a certified methodology are entered manually into the repository. At the same time, a special set for OAI-PMH has been created, which enables the National Repository of Grey Literature to harvest certified methodologies with full text for its repository.

Documents for SSP

In cooperation with the Alfons university counselling centre (formerly Přes bloky), full texts (both digital and digitised by the counselling centre) of books and textbooks are placed into the Digital Library for the needs of students with specific needs. The records of these documents are accessible for all users, while the downloading of the full text is only available for students who demonstrate eligibility according to the conditions of the counselling centre (Skůpa, 2016a) The Digital Library is also connected to the Library Gateway for the visually impaired (available from **https://www.teiresias.muni.cz/knihovni-brana/**). However, the connection is made through the Aleph library system primarily due to the absence of the Z39.50 interface in DSpace. Records are thus catalogued twice – to the Digital Library and to the library catalogue. In the library catalogue, however, the records are not visible and exist only for the purposes of transfer via the Z39.50 protocol into the Library Gateway.

Linking the Digital Library

The Digital Library at Brno University of Technology cooperates through the OAI-PMH protocol with other repositories that could increase the use of the DL. It is connected to the OpenAIRE portal (**www.openaire.eu**), where all openly available documents are placed. In 2016, the DL was connected to the National Repository of Grey Literature, where the metadata records of theses and conference proceedings are placed. Only certified methodologies are transferred in full text.

The OAI-PMH protocol is also used by other tools. The tool Citace PRO was implemented in 2015, which generated a bibliographic record for all records in the detail view according to the ČSN ISO 690 standard. This means that it is easier for the user to save the record on a personal account in the Citace PRO manager (available at **http://citace.lib.vutbr.cz**). The newest implemented tool is the alternative PlumX metrics, which serve on the one hand to make the display of statistics in the DSpace space more attractive, and on the other hand to record the real impact of the individual links – use, mentions on social networks, or in citation managers.

The Digital Library is also indexed and therefore searchable via the Primo discovery search engine (**https://primo.vutbr.cz**). In the search engine environment, users can then search both in all areas (library catalogue, Digital Library, online resources), and also only in the Digital Library.

Open access

The Central Library actively promotes open access at the university. It was already actively participating in the Open Access Week international event from 2010. In 2013, Brno University of Technology became a signatory to the Berlin Declaration. At the same time, through Rector Decision No 21/2013, the "Declaration of the Institutional Open Access Policy at Brno University of Technology" was adopted (available from **https://www.vutbr.cz/uk/openaccess/rozh21-pdf-p84132**). This policy expresses the university's proactive stance, however does not determine any obligation related to publishing or saving scientific articles and other works.

In connection with these changes, it has also been possible to push through real support for open publishing – Fond Open Access – through which CZK 1 million is allocated every year. The fund defines strict rules for awarding grants (Skůpa, 2016b). An article must be published in a fully open magazine evaluated using the R&D Methodology, which in real terms means its indexing in the Web of Science or in Scopus. At the same time, the payment for publication (APC) must not be over USD 2,000 or EUR 3,000. The fund was first launched in mid-2014 and six articles were supported from it. In 2015, the fund operated under the same conditions and subsidised 17 articles. 11 articles have so far been supported in the current year, and around CZK 500,000 remains to be drawn. One of the obligations is that a subsidised article must be included in the Digital Library at Brno University of Technology. This has contributed to completing the collection of the Publication Activity of Brno University of Technology staff.

DOI

The Central Library allocates a DOI identifier to magazines and proceedings produced at Brno University of Technology. At the present time, a DOI is regularly allocated to the magazines Mathematics for Application, Radioengineering and Trendy ekonomiky a managementu. A DOI was also allocated to several conference proceedings and to the book Otevřený přístup k vědeckým informacím: současný stav v České republice a ve světě [Open Access to Scientific Information: Current State in the Czech Republic and Abroad]. A DOI is allocated free of charge, the only condition is the inclusion of the full text in the Digital Library.

Conclusion

Over the years, the Digital Library at Brno University of Technology has become an important part of the services provided by the Central Library at Brno University of Technology. According to visitor statistics, this is the most-visited library website (as of 25 September, it had 12,000 visitors in that month). The Central Library is always trying to improve its operation and supplement it with additional functionality. Objectives for the near future include increasing the quantity of published full texts (magazines, proceedings and single articles) and increasing support for open access, in particular its green path.

References

ČESKÁ REPUBLIKA, 2005. Zákon č. 552/2005 Sb.: Zákon, kterým se mění zákon č. 111/1998 Sb., o vysokých školách a o změně a doplnění dalších zákonů (zákon o vysokých školách), ve znění pozdějších předpisů, a některé další zákony. In: *Sbírka zákonů ČR*. 30. 12. 2005. ISSN 1211-1244. Also available from: **http://www.zakonyprolidi.cz/cs/2005-552**.

SKŮPA, Jan, 2016a. Dokumenty pro studenty se specifickými potřebami. *Ústřední knihovna VUT v Brně* [online] Brno, 2016 [cit. 2012-09-20]. Available from: **https://www.vutbr.cz/uk/digitalni-knihovna/ssp**.

SKŮPA, Jan, 2016b. Podmínky fondu Open Access. *Ústřední knihovna VUT v Brně* [online]. Brno, 2016 [cit. 2012-09-22]. Available from: **https://www.vutbr.cz/knihovny/openaccess/dotace/fond-oa/podminky**.