

The Technical Sciences Knowledge Exchange and Academic Publications Sharing Integrated System as an example of academic system to share knowledge and communicate between the university

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THE TECHNICAL SCIENCES KNOWLEDGE EXCHANGE AND ACADEMIC PUBLICATIONS SHARING INTEGRATED SYSTEM (ABBR. SUW) AS AN EXAMPLE OF ACADEMIC SYSTEM TO SHARE KNOWLEDGE AND COMMUNICATE IN THE UNIVERSITY ENVIRONMENT

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Abstract:

The Library of Cracow University of Technology (CUT) has begun developing Technical Sciences Knowledge Exchange and Academic Publications Sharing Integrated System (abbr. SUW) since 2009. This project was granted partial financial support under the EU fund Innovative Economy Operational Programme (2009-2012). Ultimately, the system will include the following components:

- 1) The Catalogue of CUT Library,
- 2) The Bibliography of the CUT Staff Publications,
- 3) Databases created by the CUT Library,
- 4) The CUT Repository,
- 5) The CUT Handbooks database.

Additionally, the system will provide a federated search feature, as well as the communication tools for the registered users (The SUW's community). The SUW system is implemented in the Open Access movement, which is increasingly gaining popularity in Poland. Therefore, the first stage of work on the SUW system was to promote information and knowledge about OA in the university environment. The first part of the paper deals with ways to promote the idea of OA and the SUW project among the CUT academic staff and students. The second part of the paper presents the main assumptions and the process of developing the SUW system, beginning with the CUT Digital Library, which has been founded and managed since 2006 by the CUT librarians.

Keywords: The Technical Sciences Knowledge Exchange and Academic Publications Sharing Integrated System (SUW), The Library of The Cracow University of Technology (CUT), knowledge sharing academic system, institutional repository – creation, Open Access in Poland, promotion of Open Access

I. CRACOW UNIVERSITY OF TECHNOLOGY AND POLISH OPEN ACCESS INITIATIVES

1.1. Open Access Initiatives in Poland

Open Access movement started to form at the turn of the 1980s and 1990s. At the end of 1980s, first freely available journals, accessible exclusively on the Internet, were created. In 1991 Paul Ginsparg, a physicist working at Los Alamos National Laboratory in the USA, established one of the most known repositories containing the scientific papers relating to the area of the exact sciences (physics, mathematics, computer science, quantitative biology, quantitative finance and statistics) - ArXiv.org-.

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Currently, the Open Access phenomenon and its initiatives are well known and accepted in the world. In the European countries, many governmental institutions were established to coordinate OA activities, e.g. English Joint Information Systems Committee², or the Irish IRELA-Open Project³. Many universities make their own OA declarations, adopt resolutions and ordinances that recommend their staff and students to place their work in open repositories, and finally they create and run their own institutional repositories. European University Association (EUA)⁴, which brings together 850 universities from 46 countries, has adopted in 2008 the recommendations from the *EUA Working Group on Open Access*. This Working Group has recommended that all European universities should form the institutional repositories and impose the requirement of storing there all of the articles and papers upon their publication. In addition, in 2008, the European Commission prepared recommendations to European governments to encourage experimentation with new models of knowledge sharing. Under the Seventh Framework Programme, the European Commission introduced a pilot project for science-related scientific publications within FP7 (so-called "mandate publishing", meaning a recommendation that after 6-12 months, all of the research program papers should be available on the Internet.)⁵.

The dynamic development of Open Access in the world also struck a chord in Poland. OA initiatives undertaken here are still mostly regarded as isolated cases, but there is already a gradual increase in awareness of this phenomenon's essence, and various professional circles, e.g. librarians (especially from the scientific libraries), publishers, as well as scientific associations and societies members, express their interest in the idea.

Polish milestone steps towards the OA turned out to be major nationwide events. The first of those was signing the *OECD Declaration on Access to Research Data from Public Funding*, which was done by the representative of the Polish government on 30 January 2004. Representatives of 34 countries signed this document on that day. In April 2005, the organization Creative Commons Poland⁶ was founded. Present activities of this institution are focused on adjusting licensing based on the principles of Creative Commons to Polish legal requirements. On 24 March 2006, Polish Librarians Association adopted a resolution supporting the first OA declaration, *The Berlin Declaration*, at the same time recommending librarians to undertake large-scale promotion of the Open Access movement. Another milestone was the adoption on 26 April 2007, by the academic community affiliated with *The Conference of Rectors of Academic Schools in Poland (KRASP)*, of the special resolution on public access to scientific publications. This resolution became the basis KRASP support of the petition to the European Commission on free and public access to scientific publications.⁷.

Many institutions focus on the promotion and dissemination of knowledge about the OA movement. This is accomplished primarily through seminars, conferences and workshops. In September 2006, The Poznan Library Foundation organized an international workshop under the name of *eIFL Open Access Workshop*, with the main emphasis put on the issues related to the creation of repositories (technological and legal aspects). In June 2007, Polish Librarians Association in cooperation with the Polish-Japanese Institute of Information Technology in Warsaw held a workshop entitled *Open Access - a new model of scientific communication*. In October 2009, Polish Academy of Sciences invited prominent representatives of social and exact sciences for the *Openness in Science* seminar⁸, where the openness and transparency in Polish science were discussed, as well as the Open Access, which enables transparency in science and builds public confidence in it. Also in 2010, the above-mentioned KRASP Commission (Science and Innovation Section and Information Infrastructure Section) organized

² <http://www.jisc.ac.uk/>

³ <http://www.irel-open.ie/>

⁴ <http://www.eua.be/Home.aspx>

⁵ <http://otwartanauka.pl/przewodnik-po-otwartej-nauce/3-instytucjonalne-inicjatywy-wspierajace-open-access/> [in Polish]

⁶ <http://creativecommons.pl/> [in Polish]

⁷ http://eprints.rclis.org/bitstream/10760/12754/1/garbacz_moskwa_niemiec.pdf [in Polish]

⁸

http://www.aktualnosci.pan.pl/index.php?option=com_content&view=article&id=217:seminarium-naukowe-otwarto-w-nauce-open-access-i-inne-modele&catid=32:archiwum&Itemid=42 [in Polish]

a seminar on Open Access, whereas the *Nicolaus Copernicus University Library* in *Torun* has already prepared two Open Access Conferences (in 2007⁹ and 2010¹⁰). Increase in the number of Polish scientific libraries joining International Open Access Week can be observed year by year and the libraries treat it as the expression of their support for the movement and its promotion in the local academic communities.

In addition to the previously listed events, it is worth to mention several Polish institutions and projects related to open access. Publishers of state-financed institutions (the institutes of the Polish Academy of Sciences), as well as the commercial ones (e.g. Cornetis, Termida, Versita), undertake the OA strategies, maintaining high-level professional journals. In 2008, The Coalition for Open Education was founded¹¹, with the main objective to promote: open educational resources, open access, free software and free culture, activities for free access to knowledge, information and education, and also coordination of those activities. Increased activities regarding OA are coordinated in Poland by the *Interdisciplinary Centre for Mathematical and Computational Modelling* at Warsaw University. The Centre is not only the co-founder of the mentioned Coalition for Open Education, but also the initiator and executor of the projects: *Open the Book*¹², the *Virtual Library of Science*¹³, *Open Science* portal¹⁴. In June 2007, The Digital Libraries Federation¹⁵ website was launched; it was created and developed by Poznan Supercomputing and Networking Center. This site provides access to the resources of Polish digital libraries and repositories, in the same time increasing their visibility on the Internet (currently they provide access to 554 020 publications from 63 Polish digital libraries; status as at 14 February 2011).

Polish publications in the field of science are included in the international repositories (e.g. ArXiv) and on the sites of foreign magazines (e.g. Hindawi). The number of Polish open journals is still low. In 2011, DOAJ registered a total of only 91 titles, and only twelve Polish repositories can be found on ROAR, most of which are digital libraries, and are not repositories in the strict sense of the word (status as at 14 February 2011).

Polish universities make efforts to create institutional repositories, but until now only few have succeed. In 2002-2005, the concept of creating a repository at the Faculty of Electrical Engineering at Wroclaw University of Technology was slowly developed, but it was launched on the Internet no sooner than in 2008 (The EE Repository of Wroclaw University of Technology)¹⁶. Also in 2008, the decision to build an institutional repository was made by the Technical University of Lodz - project CYRENA (CYfrowe REpozytorium NAuki - Digital Repository of Science) was launched in 2010. In the same year, in Poznan, AMUR (Adam Mickiewicz University Repository)¹⁷, was created and AGH University of Science and Technology created OpenAGH website¹⁸ the first Polish repository of courses, modelled on the OpenCourseWare site (created by Massachusetts Institute of Technology - MIT)

1.2. Open Access Initiatives of the Cracow University of Technology

1.2.1. Cracow University of Technology – Institution Overview

Cracow University of Technology¹⁹ is a public technical university established in 1945. Up to now, more than 60 000 students graduated the university; Ph.D. degrees were awarded to nearly 1,600 doctoral candidates, and postdoctoral title (Polish “dr hab.”) was given to over 500 students. In the academic year 2009/2010, CUT students were offered study courses within 20

⁹ <http://www.ebib.info/publikacje/matkonf/mat18/> [in Polish]

¹⁰ <http://www.ebib.info/publikacje/matkonf/mat21/index.php> [in Polish]

¹¹ <http://koed.org.pl/> [in Polish]

¹² <http://otworzksiazke.pl/> [in Polish]

¹³ <http://vls.icm.edu.pl/eng/>

¹⁴ <http://otwartanauka.pl/> [in Polish]

¹⁵ <http://fbc.pionier.net.pl/owoc> [in Polish]

¹⁶ <http://zet10.ipee.pwr.wroc.pl/> [in Polish]

¹⁷ <https://repozytorium.amu.edu.pl/jspui/> [in Polish]

¹⁸ <http://open.agh.edu.pl/index.php?id=1&theme=1280> [in Polish]

¹⁹ <http://www.en.pk.edu.pl/>; <http://www.pk.edu.pl/> [in Polish]

scientific disciplines organized in 7 faculties (Faculty of Architecture, Faculty of Physics, Mathematics and Computer Science, Faculty of Electrical and Computer Engineering, Faculty of Chemical Engineering and Technology, Faculty of Civil Engineering, Faculty of Environmental Engineering, Faculty of Mechanical Engineering). Over 16 000 students are mentored by nearly 3,000 members of academic staff, including 87 professors. The university also offers doctoral studies, postgraduate studies and many training courses and classes. It is a fully autonomous institution of higher education - four departments have the right to confer doctoral and postdoctoral (Polish title "dr hab.") degrees. In addition to the aforementioned faculties at the university, there are also interfaculty units such as: International Centre of Education, Pedagogy and Psychology Centre. The university participates in extensive international cooperation with universities and research institutions from around the world. The university authorities have signed over 60 bilateral agreements with foreign universities and their organizational units. The University is a member of the European University Association. It participates in the following programs: ERASMUS, CEEPUS, TEMPUS, COST, and in the European Union's Seventh Framework Programme for research and technological development (FP7). Faculty of Architecture is accredited by the RIBA (Royal Institute of British Architects), which allows its certificates to be recognized in all of the countries of the British Commonwealth of Nations and the European Union.

1.2.2. Open Access Publications of the Cracow University of Technology

The Digital Library of Cracow University of Technology, which was established in 2006, was first to provide access to digital versions of university publications²⁰. According to the SUW project specifications²¹, the digital library will ultimately be absorbed into the newly-launched system. CUT Digital Library currently offers access to the following collections: CUT Doctoral Dissertations, Education Materials, Monographs, *Czasopisma Techniczne* [Technical Journals] and Special Collections.

In April 2009, Cracow University of Technology submitted to The Ministry of Science and Higher Education a proposal developed by the CUT Library, concerning the SUW project financing, realized in a competition procedure under the Innovative Economy Operational Project (2.3). In August, the proposal was recommended for funding, and on 25 September 2009 the project financing agreement was signed between the Ministry of Science and Cracow University of Technology.

In October 2009, the SUW project group was appointed at the CUT Library, this group composed of the following teams:

1. IT Team - 2 members,
2. Content Management Team - 3 members,
3. Training and Promotion Team - 3 members,
4. Digitalization and Cataloguing Team - 3 members.

The overall direction and management of the project was given to the CUT Library Board of Directors

In 2010, the Rector of the Cracow University of Technology, Prof. Kazimierz Furtak, has signed on behalf of the university two agreements, by which scientific publications of the Cracow University of Technology Press have been guaranteed online access through Internet platforms²². The first agreement was signed with a digital platform Versita.pl, which is a part of Versita Publishing²³. This platform is used for the publication and distribution of Polish-language e-books, academic, scientific and professional journals, as well as reference sources, such as encyclopaedias, dictionaries, maps and more. The second agreement was signed with

²⁰ <http://www.biblos.pk.edu.pl/bc>; [in Polish]

²¹ <http://www.biblos.pk.edu.pl/suw> [in Polish]

²² Communication from Cracow University of Technology:

http://www.pk.edu.pl/index.php?option=com_content&task=view&id=258 (accessed on 19.02.2010) [in Polish]

²³ Versita publishes electronic English-language journals and scientific books, and also offers other publishers in Central and Eastern Europe the world's leading technology solutions for the publication and distribution of electronic English-language periodicals and books. Versita is the exclusive partner of the Springer publishing group in Central Europe, as well as de Gruyter publishing house in Eastern Europe; see www.versita.com.

The Institute of Industrial Design, which agreed to make Cracow University of Technology Press publications accessible through the Institute of Industrial Design Digital Library. This platform is being developed as a part of the Innovative Economy Operational Programme, conducted since 2008 by the Institute under the name Design your profit²⁴.

II. OPEN ACCESS AND SUW PROJECT PROMOTION AND TRAINING AMONG THE ACADEMIC STAFF AND STUDENTS OF THE CRACOW UNIVERSITY OF TECHNOLOGY

The main tasks of the Training and Promotion Team was to develop a strategy and timetable for the promotion and dissemination of knowledge about the Open Access movement, as the SUW project was built on the idea of free and open access to publications and scientific educational materials. The main objective of the Content Management Team was to develop the concept for a university repository, which was to become the heart of the SUW system.

The first recommendations for the SUW project were made at the beginning of the academic year 2009/2010 by the Deputy Director of the CUT Library, who wrote in *Our University* magazine (issue no. 5, 2009) an article *A portal for our library*. It contained general information about the new project SUW, *which will allow to create and integrate digital publications of the CUT academic staff, supporting teaching and conducting research, and also allow to facilitate the exchange of technical knowledge through a dedicated platform*²⁵. The first public announcement among the CUT academic staff concerning the SUW system, was on 26 October 2009, when a presentation of the SUW project was made during a series of e-learning framework meetings at Cracow University of Technology. The seminar, on which it was presented, was titled *E-Library resources of CUT Library as the source of information to be used in e-learning courses at the Cracow University of Technology*.

In years 2009-2010, Training and Promotion Team focused on several tasks:

- 1) Developing a website dedicated to Open Access, which would be accessible from the CUT Library home page and updated on an ongoing basis;
- 2) Preparing and implementing an Open Access presentation for:
 - a) CUT librarians;
 - b) Library Council and CUT institutes librarians;
 - c) The academic staff and Faculty Boards;
 - d) The consultant editors of the university Repository;
- 3) Preparing information and Open Access/SUW stand during International OA Week;
- 4) Preparing and distributing information and promotional materials on the OA and SUW program (pamphlets, calendars, posters, stickers, candies, as well as the *Guide to the open science* leaflet)²⁶.

2.1. Open Access website²⁷ on the CUT Library home page

Information on the websites devoted to Open Access, which are available from the CUT Library home page, has been developed jointly by the SUW Content Management Team and Training and Promotion Team. The librarians gathered there basic information about the idea, movement and OA initiatives; furthermore, it was grouped according to the OA basic categories – subject topics. Access to this part of the website was given to everybody interested. The information gathered there does not constitute an exhaustive compendium of knowledge about OA, but was thought to be a kind of guide and assistance in finding information sources and resources dedicated to OA. An additional advantage of the Open Access website is permanent and free promotion and advertising of OA. As in the case of other Polish universities and colleges,

²⁴ http://www.iwp.com.pl/projekty_zaprojektuj_swoj_zysk [in Polish]

²⁵ *Portal dla naszej biblioteki* / Dorota Buzdygan // *Nasza Politechnika*. – 2009 nr 5 (77), s. 11; http://riad.usk.pk.edu.pl/~naszapol/np77/np_05-09.pdf [in Polish]

²⁶ Guide to the Open Science was created within the project "Open Book", conducted with support from Iceland, Liechtenstein and Norway through the EEA Financial Mechanism of the European Economic Area and Norwegian Financial Mechanism under the Scholarship and Training Fund, which provides access to digital versions: <http://otwartanauka.pl/wp-content/uploads/2010/01/przewodnik-po-otwartej-nauce.pdf> (accessed on 20.02.2011) [in Polish]

²⁷ http://www.biblos.pk.edu.pl/open_access [In Polish]

university website did not contain any links or the information about OA, therefore, the creation of such website seemed to us, the librarians, most reasonable. *Open Access* website links to the following tabs:

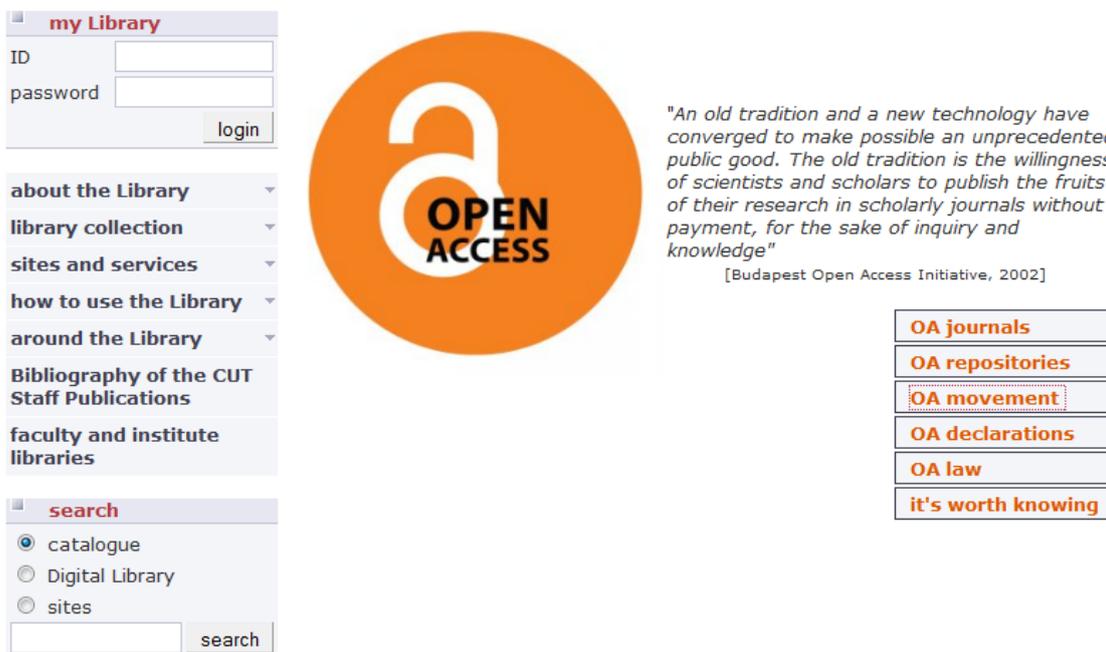
- *OA journals*;
- *OA repositories*;
- *OA movement*;
- *OA declarations*;
- *OA law*;
- *It's worth knowing*.

OA journals and *OA repositories* tabs contain directories, search engines and OA internet websites, together with their short characteristic (information about the content, the scientific fields and disciplines they relate to and who they are addressed to). The selection of links to specific discipline-based repositories and OA journals dedicated websites was not random. Their subject area had to be consistent with the disciplines taught at our university and those useful for our faculties (Faculty of Architecture, Faculty of Physics, Mathematics and Computer Science, Faculty of Electrical and Computer Engineering, Faculty of Chemical Engineering and Technology, Faculty of Civil Engineering, Faculty of Environmental Engineering, Faculty of Mechanical Engineering). In the case of periodicals, that were to be selected and put on the list of recommended Polish and foreign OA journals, we used the Ulrich's Web. Our list, put together using Ulrich's Web as a source, guarantees that the recommended OA journals are of high quality when it comes to their content. This compilation, together with direct links to OA journals, provides an invaluable aid to the academic staff and students, who save time needed to find relevant information in a maze of Internet resources.

OA movement tab contains definition of Open Access with a link to a brief outline of historical OA movement in Poland and abroad. This tab also includes links to other Polish websites, recommended by the CUT Library, where students can find interesting information about current and past events and OA initiatives (recommended websites: EBIB Electronic Library – a portal for librarians, Open Science, Wikipedia, International OA Week).

The subsequent tabs of Open Access website at the CUT Library home page outline issues related to OA declarations and copyrights of the materials published in the OA model. *OA declarations* tab contains brief description of the key declaration constituting the Open Access movement, together with date of their publications and links to the original full texts and their Polish translations. Similarly, in the tab *OA law* there are mentioned and briefly characterized licenses used in different countries and within various scientific projects, which are put on publications and other materials made available on the Internet in free access. The names of licenses and projects link to their homepages.

The last tab is named *It's worth knowing* and includes information on Polish and international conferences devoted to open access, links to electronic publications that discuss the phenomenon and different aspects of OA, as well as links to the statements of scientists supporting the idea and links to Polish OA projects.



my Library

ID

password

about the Library ▾

library collection ▾

sites and services ▾

how to use the Library ▾

around the Library ▾

Bibliography of the CUT Staff Publications

faculty and institute libraries

search

catalogue

Digital Library

sites

OPEN ACCESS

"An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge"

[Budapest Open Access Initiative, 2002]

[OA journals](#)

[OA repositories](#)

[OA movement](#)

[OA declarations](#)

[OA law](#)

[it's worth knowing](#)

Fig. 1. Open Access website at the CUT Library home page

2.2. Open Access training carried out at the Cracow University of Technology in years 2009-2010

The priority task for the SUW Training and Promotion Team in years 2009-2010 was to implement training for the entire university community on open access and distribute information on the new university project. During the 1st Open Access Days at the Cracow University of Technology (26-27 October 2009), organized on the occasion of the International OA Week, Training and Promotion Team prepared a presentation on OA intended for the librarians from the CUT Library. Training was conducted on 26th and 27th October for the two groups of librarians. The presentation addressed the following issues:

- 1) What is OA? Based on definitions of the various declarations and initiatives.
- 2) The history of OA;
- 3) The methods of publishing,
- 4) Repositories and journals;
- 5) OA – models of periodicals;
- 6) OA law;
- 7) Websites, Polish projects
- 8) OA - barriers and benefits.

Before and after the presentations, librarians were asked to complete two different anonymous questionnaires to check their knowledge in the field of OA before and after training. The presentation was further modified, based on the analysis of responses given, to be easily comprehended by following groups, which were to be trained.

In December 2009, the next presentations were carried out for 1) members of the CUT Library and 2) faculty librarians of Cracow University of Technology. Also, an additional presentation of the main objectives of the SUW project was made for group 3) the representatives of the academic staff, doctoral students and other university staff of Cracow University of Technology.

In 2010, Training and Promotion Team carried out further OA training intended exclusively for academic staff and researchers from all university institutes during the faculty council meetings. Separate presentation was prepared for each department, although all of those presentations were based on demonstrations prepared in advance for the librarians. The history of OA movement was abandoned in those presentations in favour of discussing specific examples of journals and repositories worth recommending for each department, also for examples of international and Polish universities supporting OA. To encourage researchers to support the OA movement, examples of articles and materials authored by employees of the Cracow University of Technology, published or made available in the OA model, in known and world-renowned repositories, OA journals and websites (e.g., arXiv, Hindawi, Corr), were put into presentations. Quite often, the authors whose publications were shown as the examples, were not aware that their work was available on the Internet under the principles of OA. Academic staff and researchers training attracted interest, but also raised many questions and doubts about open access, mainly concerning the copyright respect and plagiarism issues, as well as publications financing questions, when it comes to materials that researchers would like to "liberate" to the OA repositories.

In May 2010, the CUT Library Director appealed, in a special letter addressed to the deans of all the Faculties of Cracow University of Technology, with a request to assign a consultant editor from each faculty. This request was preceded by information about the SUW project at the university and about the emerging Repository of Cracow University of Technology (RPK). *To assist the process of depositing publications in RPK, the installation of fully equipped computer stations at each of the faculties was planned. Those computer stations were intended for depositing scientific publications at the RPK by the academic staff and other authorized users. In order to simplify depositing written materials in RPK it was assumed that each computer station will be taken care of by the consultant editor.* The letter ended with an invitation made toward the consultant editors to attend the training in the field of OA. *Open Access to Scientific Publications (OA Journals and Repositories) – The Idea, Movement, Polish and Foreign Initiatives* training was attended by 10 people and took place on 27 May 2010.

The last action organized by the SUW Training and Promotion Team to promote Open Access at Cracow University of Technology was 2nd Open Access Days at the Cracow University of Technology (18-24 October 2009) during the subsequent International OA Week. Information about this event was shown throughout the week at the CUT Library home page. In addition, one day of the week was devoted to direct promotion and information activities by establishing special OA stand in the main university building. The CUT Librarians handed out OA promotion materials (leaflets, brochures, calendars) to students and academic staff, and also provided information about the OA initiative, according to petitioner's interest.

III. SUW: PROJECT BRIEF AND STAGES OF DEVELOPMENT

The years 2006-2012 have been planned as a period of an increased work of the CUT Library in promoting access to its databases and digital resources. Before the decision about establishing the SUW system²⁸ was made in 2009, the Library had already several years of experience in developing its own databases including *Bibliography of the CUT Staff Publications*, *Architecture and Art of Cracow database*, *Krynica Conference Papers*, *Unpublished Scientific Papers of the CUT Academic Staff and Digital Library of Cracow University of Technology*.

3.1. First steps toward creation of the SUW

In May 2006, the CUT Library joined, on the behalf of the university, project to create the Digital Library of Cracow University of Technology (abbr. BCPK). Its purpose was to facilitate access to library materials, as well as archiving and preservation of rare and valuable documents. BCPK resources were divided into following collections: *CUT Doctoral Dissertations*, *Educational materials*, *Monographs*, *Czasopisma Techniczne [Technical Journals]* and *Special Collections*. Just as the CYRENA Technical University of Lodz Repository, BCPK is a semi-open project, which means that for some of the materials there is a limited access. All materials contained in

²⁸ <http://www.biblos.pk.edu.pl/suw> [in Polish]

BCPK are available under the Non-Exclusive License Agreement.²⁹ On 11 February 2008, Rector's Decree on the obligation to submit electronic versions of doctoral dissertations to BCPK entered into force³⁰. Since its creation, each year BCPK notes increasing traffic to full descriptions of resources, ranging from 135,687 (in 2008) through 273,418 (in 2009), up to 609,218 (in 2010). BCPK is a member of Digital Libraries Federation, EuropeanLocal project, as well as ENRICH and Manuscriptorium projects. The Library resources are indexed, among others, by Google. BCPK usage statistics and CUT staff requirements caused the Library to take the next steps in terms of facilitating access to growing amounts of data, as well as improving the exchange of information between university staff. Links to documents located in BCPK resources were begun to be added to the bibliographic records in the Library computer catalogue (2006) and to the Bibliography of the CUT Staff Publications (2008), which shortened the time spent on searching the full texts of documents and facilitated smooth transition from one database to another. This way, all of the abovementioned CUT Library databases became a prototype of an integrated system, which in the end took form of the SUW project.

In 2008, a team was appointed, which primary task was to develop the concept of a CUT institutional repository. This team, initially consisting of seven members, had analyzed the contents of web pages within the domain pk.edu.pl. The analysis allowed for an initial orientation on the type and number of papers and scientific materials stored on the university web pages, the frequency of their appearance and the rules for archiving. It also helped in understanding the needs of university research and teaching staff in the context of the repository creation.

In March 2009, at the last meeting of the team in its initial form, it was decided to set up: 1) The CUT Handbooks database - a list of readings recommended by university lecturers, sorted by subjects and specialization, and 2) social network platform; those would be created simultaneously with the repository. Both, repository and Handbooks database, would operate on the principle of automatic archiving, by using relevant technical tools that allow authors to manually add new items. Additionally, all components would be linked together, allowing smooth transitions between resources. At several subsequent meetings, the idea evolved towards a single system combining all the elements into a coherent whole. The creation of such specialized system would require a significant investment of funds, which the university did not have. On 24 April 2009, after less than a months work, the CUT Library applied for the project funding as part of *The Innovative Economy Operational Programme, Measure 2.3. Investments related to development of the computer infrastructure of science, Submeasure 2.3.2. Projects aimed at the development of digitalised information resources for science.*

3.2. SUW SYSTEM

General purpose of the SUW System (Technical Sciences Knowledge Exchange and Academic Publications Sharing Integrated System), is to network share bibliographic information and full-text scientific and educational content, authored by university academic staff and students, i.e University Community. An additional element of the system will be an ability to exchange views, comments and observations on the shared materials.

As part of the SUW project, the CUT Library created its own software merging all of the elements of the system, which now consists of:

- The Repository of Cracow University of Technology (including BCPK resources)
- The Bibliography of the CUT Staff Publications,
- The Catalogue of CUT Library,
- The CUT Library Databases,
 - Cracow Architecture and Art,
 - Krynica Conference Papers,
 - Unpublished Scientific Papers of the CUT Academic Staff,
- Handbooks Database,
- Social Network.

²⁹ [http://www.biblos.pk.edu.pl/files/File/licencja\(3\).pdf](http://www.biblos.pk.edu.pl/files/File/licencja(3).pdf) [In Polish]

³⁰ <http://www.biblos.pk.edu.pl/files/File/zarzadzenie11-02-2008.pdf> [in Polish]

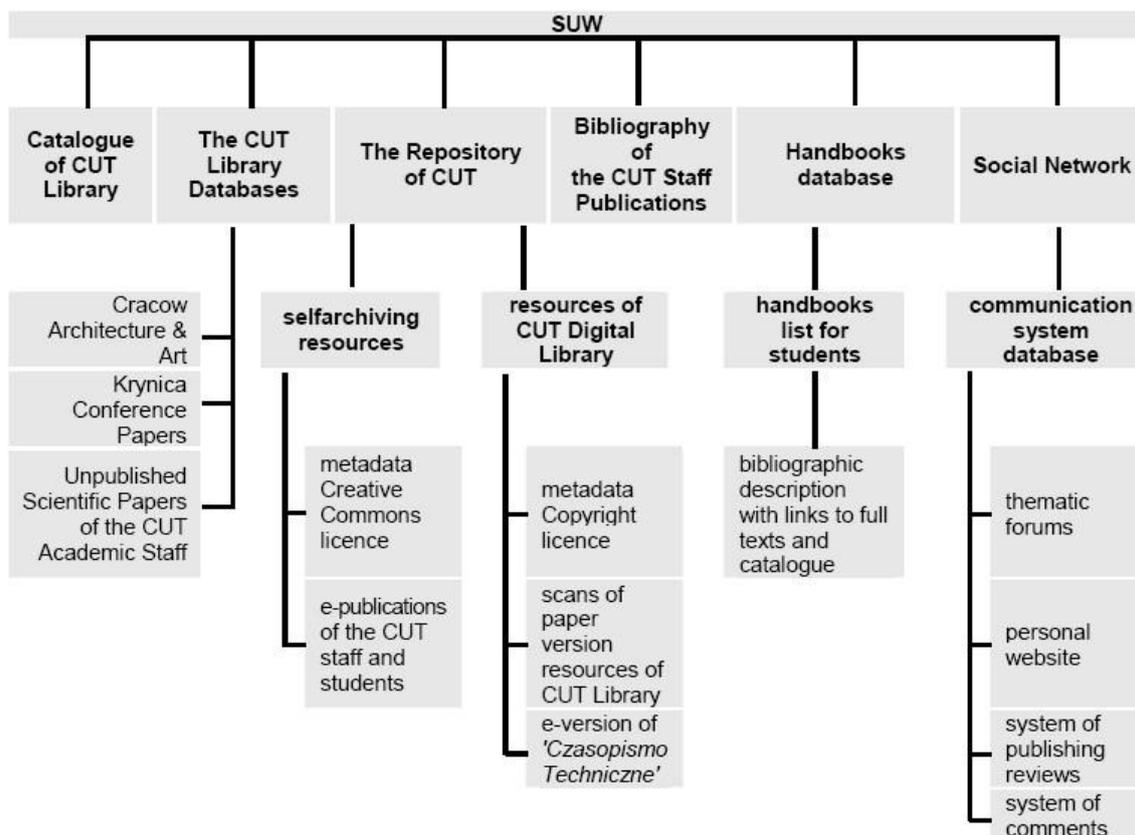


Fig. 2. SUW Chart – Technical Sciences Knowledge Exchange and Academic Publications Sharing Integrated System

The system is dedicated for all Internet users interested in exact, technical sciences. The primary objective of creating the SUW system is to support the academic community, to create a unified knowledge base for the purposes of research and teaching (including e-learning) and development of scientific communication.

3.3. SUW development stages

In the last quarter of 2009, the development of the CUT Repository has begun. Content Management Team dealt with the substantive preparation of legal documents, including licenses for the authors of the materials to be stored in the system, as well as the SUW draft documents. IT Team started developing software, which would allow entering data into the Repository. At the same time, Training and Promotion Team organized a competition dedicated to the development of visual identification of the system. The official SUW logo was selected during this competition. Logo colours refer to the university colours (navy blue) and the Open Access Initiative colours (orange). In early 2010, IT Team and Content Management Team began developing system functionality and designing user interface. Teams have focused primarily on the function of searching the system resources, the possibility of defining the different hierarchical structures, full-text indexing and ensuring the security of stored data.

The work on visual side of the interface was not easy, it was necessary to put a lot of information on one screen, so that it constitutes clear, logical whole and allows instinctive navigation. Teams struggled to create an interface based on proven and already existing searching tools, e.g. the Google search interface. The project assumed the operation of two interfaces, for not logged in and logged in users. The first interface must have contained general information about the repository and the SUW, as well as the search engine and search indexes. The second interface also had to be equipped with tools for authors, allowing automatic archiving and the ability to comment and communicate using interactive social network platform.

Parallel to the work of IT Team and Content Management Team, Digitalization and Cataloguing Team was working on digitization and development of resources (initially the team consisted of two members, now it consists of three), focusing on supplementing the archival resources of BCPK. By the end of the project, i.e., by 2012, thanks to this nearly 5,000 records will enrich the repository.

In the first quarter of 2011, the first repository interface was ready for testing. Website was open for the Library staff and faculty consultant editors, who were enabled to make their observations concerning the way university repository operates.

At the end of March 2011, whole BCPK Digital Library will be transferred to the *Cracow University of Technology Repository* platform, followed by *Bibliography of the Bibliography of the CUT Staff Publications* and other CUT Library databases.

All further work associated with the entering of new records will from that moment be based on the newly created software.

Further stages of Content Management Team work will include:

- 1) Preparing bibliographic descriptions of various formats and types of resources
- 2) Developing the structure of the SUW collections,
- 3) Creating scope of duties for the administrator, editors and authors,
- 4) Creating virtual platform guide,
- 5) Preparing procedures and documents, such as regulations and instructions.

The last year of the project development (2012) will be devoted to creating Handbooks Database and Social Network. Handbooks Database will be created by the academic staff, its design will reflect the educational structure of the university (materials divided according to the faculties, departments, and academic years). A list of mandatory and supplementary readings will be placed in this database; the titles of those reading materials will link to the full texts stored in the university repository or to bibliographic descriptions in the computer catalogue of the university library. The SUW community portal is designed for knowledge sharing and for moderated communication. Its structure will include authors' personal pages, topic forums, reviews publishing system and a system for comments and suggestions. Faculty editors will moderate the portal, and the CUT research staff will review the content of educational and research materials.

SUMMARY

The Internet promotion of academic achievements of the Cracow University of Technology academic staff and the creation of unified source of educational and research information dedicated to students, were priority goals for establishing the SUW system. The integration of all existing and newly created information resources of the Library of Cracow University of Technology is so far the unique example in Poland. In the coming years, the project teams plan to conduct the SUW evaluation survey, which will allow to modify the system and adapt it to the actual needs of different user groups. The Library also hopes that the SUW system and its individual components will prove themselves in terms of functionality and usability, and gain the approval of external users, those not necessarily connected with the community of Cracow University of Technology.

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