

Welcome to the Wrocław University Library: Multicultural Collections and Digital Technologies

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Abstract:

This paper provides an overview of the rich, multicultural special collections of the Wrocław University Library that, based on their languages, provenances and historical values, create across the countries' borders a common European cultural heritage. Then it describes the power of present day digital technology that can be used not only to preserve the originals in the form of digital copies, and also how digital libraries and global computer networks can give them the „second life“ in the boundless virtual space. Next, based on the projects realized by the Wrocław University Library, the application of new technological tools with many functionalities is discussed in order to present how these new technological solutions can enrich the originals and overcome the borders of their traditional physical forms.

Keywords: special collections, digitization, digital libraries, computer networks, Wrocław University Library

Welcome to the Wrocław University Library

It is a great pleasure for me to welcome you all here at the Wrocław University Library to this off-site session presented by IFLA's Rare Books and Special Collections Section jointly with the Indigenous Matters Section on the theme “Collections and Books [A]cross Borders”.

My name is Grażyna Piotrowicz. I am the Director of the Wrocław University Library and would like to welcome you very warmly also on behalf of all our library staff members.

Participants and presenters of the IFLA World Congress come from all around the world and this year you have come to Wrocław, that in 2017 has the honour of being the host of IFLA Congress. Over the past few years our city has developed its library infrastructure, and you will have an opportunity to visit academic and public libraries here as well as in Lower Silesia Region too. Wrocław with its rich history and cultural diversity offers many tourist attractions for all visitors and I believe that participants of the congress will also find here something interesting for them while spending their free time.

Today we can host this off-site session in our new Library's building. I would like to thank representatives of both IFLA sections for planning and organizing this event here and extend my thanks to all the presenters who have prepared their contributions and who now form this

international panel. We are glad that during this off-site session we will increase our knowledge of special collections, and exchange our professional experience, share ideas and best practices as well as learn from each other how to develop optimal solutions concerning protection, conservation and managing of our special collections. We are very pleased to host this conference and to meet you all here. Welcome to all our guests! I wish us all a stimulating, successful conference and interesting discussions.

This off-site session is also a great opportunity for us to present shortly Wrocław University Library's rich special collections and share our experience concerning application of digital technologies for managing collections and providing access to cultural heritage objects in the new way.

Rich multicultural collections of Wrocław University Library

Today the Wrocław University Library possesses circa 2,4 million volumes of general collections and special ones.

Our general collections include new prints, i.e. books and periodicals published after 1800, as well as an ever increasing number of electronic documents. The stock is composed of new acquisitions collected from the year 1945, book collections of the former Municipal Library and the former University Library, the abandoned collections from the area of the Lower Silesia as well as post-mansion collections' fragments. Book collections incorporated as a result of post-war revindication process enriched Wrocław University Library collections especially with German, French, and English literary output from the 19th and the beginning of the 20th century.

An extremely valuable part of the general collections are *Cimelia*, i.e. a set of books of exceptional artistic, historical or commemorative value, preserved in a separate and additionally protected storehouse. The *Cimelia* refer to various spheres of everyday life, and were published in Polish, European, Southern and Northern American, and Asian publishing houses. Among them we find books from institutional, individual and ancestral libraries. Their exceptional value is due to a great number of marginalia, autographs, dedications, ownership stamps, book-plates, layout, individual covers or indications of the places of collections they come from.

The Wrocław University Library special collections are among the richest in the country. They are unique collections amounting to over a half million units. The stock is composed of valuable manuscripts, old prints, maps, graphic collection, and music prints as well as the Silesian and Lusatia collection.

The core of the manuscripts collection is a set of manuscripts from two of the greatest prewar Wrocław libraries: State and University Library, Municipal Library as well as a stock of so-called accessed manuscripts derived from many Silesian libraries collections. The holding presently amounts to 13.000 units and is one of the greatest and most diversified in the country. It contains the most numerable in Poland assortment of medieval scripts (circa 3.000 units), 41 Greek manuscripts, and 11 written in Cyrillic. The most precious modern manuscript is *Silesian Topography* by Friedrich Bernhard Werner in 5 volumes, one of the most important sources of the region's history. Ample and valuable is also a collection of autographs (circa 17.000 units). Special kinds of autographs are the album from 16th-17th c., including the ones whose owners were important figures. The oldest codices come from monastic libraries and are imports which reached Silesia from the West. The earliest codex

was composed in the 5th c., most probably on the Apennine Peninsula. Apart from most numerous theological units, the Library treasures legal works and historiographic ones, the latter of which allow for reconstruction of political and ecclesiastical history of Silesia and Poland. Exceptionally valuable is a collection of illuminated codices, both imported and produced in Silesian scriptoria. A group of manuscripts with artistic covers also deserves attention. Among them there are relatively rare in Poland cut covers, original jacket cover, and an unquestionable *Cimelium*—Roman cover of Boethius' codex *Ars geometriae* produced in France in the 12th c. The stock of the prewar University Library is complemented by 13.000 letters from 17th c. to the first half of 20th c. It includes the output of many naturalists, writers, men of culture, science and humanities. The collection of Thomas Rehdiger, the basis for the Municipal Library, is recognized by the greatest number of Latin parchment manuscripts, encompassing copies of ancient literary works and immensely precious manuscripts written in Greek in which we find a palimpsest manuscript with *The Iliad* by Homer. Preserved from the old Municipal Library is also a rich collection of letters by 16th c. scholars and men of letters, e.g. Martin Luther, Philip Melanchthon, Erasmus of Rotterdam, and Johann Crato von Crafftheim.

The collection of old printed books consists of prints from the 15th to the 18th century. Among the Polish collections of old printed books, Wrocław University Library resources belong to the most numerable in the country (more than 310.000 units in 230.000 volumes) and they are distinguished by a great number of works produced by illustrious European printers. The specialty of the book collection is above all the local typographic output. The *Silesiaca* form a rich and inappreciable source for multilateral scientific research on the history of Silesia. The collection of old prints contains typographical and publishing curiosities, plentiful *editiones principes* of works and prints which due to their acquired features (origin, bibliophile covers, handwritten notes) gained with time and added value. To the most valuable objects belong incunabula (3.270 units). Among the 16th c. prints from various European publishing centers many are rare and known in the world only in few copies. The 16th c. prints deserve attention, the value of which is the work's language, e.g. Old Church Slavonic (in its old Belarusian variant), Prussia's dead language, or Lower Lusatian. The collection also contains a great number of rare Czech prints—often curiosities. Poland and Polish matters papers (*Polonica*), proportionally constitute the most numerous collection, include editions preserved exclusively in Wrocław. Due to special features of the copy, worth mentioning is a substantial group of books derived from the prewar Municipal Library, the curiosities of which are hand painted donation marks.

Among cartographic documents of various kinds: individual maps, section maps, atlases, and a dozen or so globes treasured in the University Library one finds many exceptionally valuable units, many a time on the world scale. In sum, the maps collection can be regarded as most significant in Europe in terms of value, origin and the subject field. Referring to content matter or origin of the cartographic units, one may distinguish between a set of Silesian, Lusatian, German, and Polish matter publications, all of which were taken into consideration when collecting stock after the Second World War. The oldest groups are early-modern atlases from the 16th-17th c. which, when compared to the ones in other Polish institutions, are most numerable. A separate group is composed of so-called artificial atlases. Individual maps are also abundant, some of them being rarities on the world scale (e.g. Anthony Jenkinson's map of Russia dated to be from 1562). To the group of individual maps belong city plans and city views, including rare views of Prague and Bratislava (Pressburg). The greatest number of units refers to Wrocław, including primarily Weihners' first plan facsimiles.

Wrocław University Library iconographic collection gathers the works which originate from the period from the 15th century onwards. There are drawings, graphics, book-plates, photographs, picture postcards, and reproductions in the form of loose tables, cases, albums, artificial albums as well as illustrations in the compact and periodical prints. A topographic and thematic scope of collections is unlimited, though it does show a visible Silesian and Lusatian inclination. The collection includes numerous 19th c. descriptions of the world, accounts from journeys, and work of art inventories. Some of them were given a monumental form, both as regards their size, number of volumes and an exceptional artistic level of graphic illustrations. A superb example is a collection of 960 litographs published by Alexander Duncker in his 16 volumes publication *Die ländlichen Wohnsitze, Schlösser und Residenzen der Ritterschaftlichen Grundbesitzer in der Preussischen Monarchie...* – the complete edition is a rarity in Europe.

The music collection consists of printed scores, music manuscripts, musicological books, musical journals, rich music bibliographies, encyclopedias, dictionaries, musician monographs, composers' thematic catalogs, publishing house and bookshop catalogs as well as opera libretti. A most interesting part of the collection is a production of Italian publishing houses (nearly 400 units from the 16th—17th c.). Very valuable are musical prints from two Piast dukes' libraries: John Christian of Brieg and George Rudolph of Legnica. A different group of units is made of prints of composers either born or working in Silesia. Occasional prints deserve special attention as due to their specificity and low print run are often rarities. The group of prints concerning music theory is represented by over 50 works from 16th-17th c., all of which are regarded as an invaluable source of information on music theory in Silesia. The 18th c. musical prints encompass valuable editions of instrumental music classics as well as publications of stage music works. Among them one finds a rich assortment of first and/or early editions of international fame. Apart from printed scores 18th- 19th c. music manuscripts are a considerable part of the collection. Dominating here is German-speaking composers' output with special place assigned to Silesia and Wrocław, as well as handwritten copies of works by such composers as Wolfgang Amadeus Mozart, Ludwig van Beethoven, and Johann Sebastian Bach.

The collection of Silesian and Lusatian prints is the only in Poland set of regional profile made of book and press publications issued before and after 1945. It consists of the prints coming from collections of former University Library and former Municipal Library, post-war claims of collections from the whole Silesia and Lusatia regions, from other pre-war Wrocław's libraries, as well as of new prints published after 1945. In this collection a special place is occupied by *Polonica*. Yet another collection of great value is Lusatian collection. Apart from these two, very valuable are also *Wratislaviana* merged into the collection of Ys (Polish: Igreki) in which a significant number of old prints can be found. While some prints have religious theme, the majority of them are unique publications referring to the history of Wrocław. A valuable collection is also a set of Wrocław and Silesia tour guides, some illustrated and containing maps. An invaluable source of historical information is made of occasional prints the publishing of which was accompanied by various official or social events, prints pertaining to Wrocław and Silesian craftsmanship (statutes, reports) or publications mirroring the activities of diverse social, cultural or scientific organizations.

A part of these multicultural and multilingual special collections can be regarded as the most significant in Europe, both in terms of value, origin, and subject field with rarities many a time on the world scale. The history of their creation and the provenances prove that many

books of our special collections crossed national, political, cultural and geographical borders. No doubt, it can be said that the Wrocław University Library's special collections create over the countries' borders the common European cultural heritage resource. They form scientific and didactic workshops for academic employees and students of the University of Wrocław, as well as for many Polish and foreign researchers. Till the end of 20th c. our special collections as the physical objects or as the microforms' copies were accessible only locally in Special Collections' Reading Room following special rules and regulations and only for entitled users. Then the development of digital technologies as well as Wrocław University Library's activity in digitization and providing online access to the digital surrogates of rare and value historical books have changed that situation.

Digitization and online sharing

Digital technologies have opened totally new perspectives for the libraries. As they offer the opportunity of preserving the original item by providing access to the digital surrogate as well as of separating the informational content from the degradation of the physical medium our Library started planned digitization of its special collections and participation in digitization projects. Since the late 1990s each department of special collections of our Library has started to select materials for planned digitization. The selection of originals has been based on their value, unique or rare and in many cases also seals, manuscript annotations, bookplates or provenance are taken into consideration. Selection always included a physical review of library materials and their physical condition.

At the beginning the digital surrogates were stored on CD-ROMs, cataloged and accessible on the computer stations only locally in the Special Collections' Reading Room. Then in 2005 the Digital Library of University of Wrocław (www.bibliotekacyfrowa.pl) has been created and launched to the Internet for ensuring global access to our digital collections, in accordance with the public demands and scholar expectations. All digital master files are stored on servers and managed by special software to ensure long-term preservation.

Since 2004/2005 we have carried out many European, international and national digitization projects funded by grants or achieved through collaboration with other institutions. With accordance to the projects' own guidelines the selection of library materials has based on one of the following criterion: chronology, geography, author, subject, format, owner, original historical collections, etc. The realized projects enabled not only the digitization and preservation of many rare and unique objects from our special collections but also the conservation of selected historical items. Additionally, we had opportunities to purchase modern equipment to digitization of special collections (e.g. scanners for different objects' formats, cameras) as well as computer software and hardware (e.g. servers, matrixes). At present the Reprographic and Digitization Unit of our Library belongs to one of the best equipped units of that kind in the country and possesses a team of highly qualified specialists in the digitization and presentation of cultural heritage objects. Some of the finished projects are represented by subpages in the theme portal *Cultural Heritage in Wrocław University Library Research* (dk.bu.uni.wroc.pl) on our Library's Website (www.bu.uni.wroc.pl) and each digital surrogate is available through the Digital Library of University of Wrocław (www.bibliotekacyfrowa.pl).

We always preserve complete original objects with their structures and context, and maintain links between theme portal, digital library and catalog records, when it is possible. The descriptive, structural, technical, and administrative metadata are provided, too. We are maintaining our digital collections in high resolution on regularly backed-up network servers

and have processes and systems in place to monitor the integrity of the digital files over time. We store multiple copies in geographically dispersed locations and regularly evaluate the need to migrate the collection or emulate software functionality.

It is important to remark that the Digital Library of University of Wrocław is part of the domestic Federation of the Digital Libraries, which contributes metadata to the *Europeana* portal. This ensures that information about digitized objects in form of metadata is put into global circulation, which markedly broadens the scope of its users. In this way each of our original multicultural library objects in the form of a digital surrogate via digital library and computer networks crosses its physical and material limitations (e.g. unit, location, traditional medium) and gains its „second life“ in the global boundless virtual space. Digital technology gives digital character to our non-digital collections. We ensure free, worldwide access to these resources and provide users the ability to download digitized objects in a way that is easy to use. All digital surrogates are simultaneously accessible for many users from around the world without any limitations. So, digitization transforms the discoverability and use of our rare and special collections, because without this process they would remain local, obscure, and hidden.

The application of digital technology made it possible for us to maintain physical, intellectual, and contextual relationships both within the various parts of a single physical object, but also among the parts of the collection as the whole. Maintaining these relationships for the user often involves special metadata as well as different discovery and use platforms.

Some examples of realized projects

An example of the integration in the virtual space the physical objects that are scattered in different places in the real world is a project carried out by Wrocław University Library and SLUB in Dresden in 2008 concerning virtual integration of two parts of the Hebraic manuscript *Machsor*. Each of our libraries possesses only one part of that two volumes' manuscript in its own collection. Now that the project is completed, *Machsor* is accessible for all users in the virtual space as the whole. The other examples of such an activity can be found in our Digital Library that is federated with circa 300 other domestic digital libraries of that type, i.e. basing on *dLibra* software and having possibility to search all of them by the single search point. Using the existing functionality of searching software it is possible to find lacking volumes of journals or books that are digitized by other institutions in Poland and integrate them virtually by links within one journal title or complete book unit. In this way users are provided with access to complete source of information in the boundless virtual space.

During the first decade of digitization activity we usually made digital copies in form of high-resolution color images that include technical information about the images, information about copyright, full-text searching - when it was possible. But because there is not one universal standard for automatic processing and presentation of digital objects over the Internet. a large and growing group of interested and active individuals and organizations have embarked on an effort to collaboratively produce an interoperable technology and community framework for image delivery. Access to image-based resources is fundamental to research, scholarship and the transmission of cultural knowledge. Digital images are a container for much of the information content in the Web-based delivery of images, books, newspapers, manuscripts, maps, scrolls, single sheet collections, and archival materials. Yet much of the Internet's image-based resources are locked up in silos, with access restricted to

bespoke, locally built applications. This new technology is known as “International Image Interoperability Framework” (IIIF). It is a set of shared application programming interface (API) specifications for interoperable functionality in digital image repositories. IIIF enables better, faster, and cheaper image delivery, and it gives users a rich set of baseline functionality for viewing, zooming, and assembling the best mix of resources and tools to view, compare, manipulate and work with images on the Web, an experience made portable–shareable, citable, and embeddable.

For the last 4 years, basied on the outcomes of some research projects (e.g. Succeed Project) and recently also on IIIF services we have ensured new functionalities for the users of our Digital Library and theme portal such as a scale and color chart, granulation of information, zooming capability, OCR and appropriate full-text searching, full or partial transcriptions of the texts, geospatial coordinates, etc.

For example, many digitized prewar journals from our collections that are presented in the Digital Library we make the automatic transcription of Gothic character text to Latin characters and OCR, using Open Source software (Scan Tailor and Tesseract). The text received in the result of these processes can be easy searched and read by the users. In the *Bibliotheca Rudolphina* project we have virtually integrated physically dispersed music collections (digitized documents with metadata), and made transcription and recognition of digitized music sheets. Last year in the project *Transcription, scoring and access to the old music scores from the collections of the Wroclaw University Library* the old music prints and manuscripts have been not only digitized and transcribed but through a cloud service (musescore.com) they are also presented in electronic sound versions (<http://www.bibliotekacyfrowa.pl/dlibra/collectiondescription?dirids=209>).

Digitized maps with geospatial coordinates are presented in a special database *Electronic Catalog of Map Collections* (<http://www.bu.uni.wroc.pl/ozk/?lang=en>). Users of this database can find not only geospatial references of places chosen on a map but also all maps (e.g. section maps) in the collection representing that place, and using added links to go to the other maps or databases. In some of the projects e.g. *Imago Silesiae Inferioris online* (<http://dk.bu.uni.wroc.pl/imago/>) the proposed solution of presentation is a combination of the advantages of bibliographies, library catalogs, iconographic catalogs, and digital library. The adopted solution consisted in presentation of maps, cities’ plans and iconographic materials at various levels of accuracy and in automatic dividing the files into fragments which are dynamically combined while downloading. The same method has been used by the project *Silesian Iconographic Archive* (<http://dk.bu.uni.wroc.pl/architektura/>).

The digitized objects composed of some parts or elements (e.g. *leporello*) are described by metadata as the whole units and additionally their description is granulated to the level of each element. It is possible also to create links to other documents, additional materials on the Internet, blogs, or other data sources. These linkages turn the reported result into contextualized data collections and creates added value to the original document.

As digital information is accessed more and more on mobile devices (tablets, phones replace computers) we are now preparing presentation files in appropriate technologies. An example is the project *The Piast collection from Wroclaw University Library* (<http://dk.bu.uni.wroc.pl/bp/>) from 2015 where the presentation files created within the project have been prepared in the technology of IIPImage that enables viewing the images on

mobile devices. Last year we began to integrate IIF services into own online presentation system for the Digital Library, and we plan further development and implementation.

Conclusion

The library is the institution in which knowledge regardless of its form (traditional or electronic resources) is preserved, cataloged, and made available for users. The Internet has broken down traditional barriers to access brought about by geographic distance, economic circumstances, political boundaries, and cultural sensitivities, and today it is the market place for research, teaching, expression, publication and communication of information. As in the digital society traditional knowledge publications in the form of physical items are often replaced by an infinite knowledge space of dynamic networked data. The library, as the knowledge and memory institution, must now engage in complete flow of knowledge, i.e. in connection of knowledge generation with knowledge reception through collecting, providing access to, and preserving all types of documents published by wide range application of the newest technological solutions.