

# Infrastructural funding of digitization and long-term preservation to save the cultural memory of a region

## Abstract

*To preserve the cultural memory of the Free State of Saxony and to promote the treasures kept in numerous heritage institutions, the government provides additional budget funds to digitize collections of historical importance and outstanding items. The program aims to provide online access to information and objects of cultural and scientific tradition for purposes of research, teaching and for the general public. It is obviously necessary to make historic stocks online available to guarantee the visibility and use in the digital age.*

*The Saxon State and University Library, Dresden (SLUB) has many years of experience in digitization and offers large digital collections of several media, including books, manuscripts, newspapers and photographs. Smaller libraries and archival institutions very often do not have the necessary infrastructure and resources to accomplish extensive digitization projects. The SLUB uses its long experiences to coordinate the state digitization program and to expand its existing infrastructure for digitization and long-term preservation all over the region. The whole workflow of production and presentation is accomplished with the open source software Kitodo which allows flexible processing of different media types and ensures the transfer to the national aggregator Deutsche Digitale Bibliothek (DDB). Also part of the program is the long-term preservation of all digitized material using the existing interface between Kitodo and the SLUBArchiv, which has been expanded to fulfill the growing demands.*

*After two years a first résumé proofs the success of this strategy. Several special collections are online, the program has helped to build up knowledge in participating institutions, to standardize workflows and to ensure constant high quality of the digital objects.*

## Saxony and its cultural heritage

Saxony is a federal state of Germany with a rich cultural history and tradition. The two largest libraries, in Dresden and in Leipzig, were first mentioned in the 16<sup>th</sup> century. The library in Dresden, founded in 1556, was the electoral, later royal library of the Saxon rulers and since the 20<sup>th</sup> century it has fulfilled the mission as a state library. Because of the interest of Saxon electors and kings in arts, music and literature and also by integrating valuable scholar's libraries, the library had grown to a modern and important European library at the beginning of the 20<sup>th</sup> century.<sup>1</sup> The university in Leipzig is one of the oldest in Germany, founded already in 1409. The library however is first mentioned in the 16<sup>th</sup> century. From the beginning, the library was open to users, scientists and students of the university. It received collections and donation over the centuries and also became one of the largest libraries in Germany at the end of the 19<sup>th</sup> century.<sup>2</sup> Over the centuries, two more university libraries emerged, one in Chemnitz in 1836 accompanying trade schools and the technical education, and one in Freiberg with focus on mineralogy and geology. Saxony is also characterized by a diversity of regional libraries with valuable and large historic collections. The libraries of the Lusatia or the Vogtland for example represent the changeful history of these regions.

All these collections are predestinated to be digitized and presented online. As is acknowledged, the digitization is a necessary step to guarantee the users perception and use of the material also in the future. The libraries in Dresden and Leipzig have already been engaged in digitization for many years. The SLUB Dresden presents more than 160.000 volumes online and disposes of an experienced team and the operational infrastructure.

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<sup>1</sup> Bürger, T., & Hermann, K. (2006). Das ABC der SLUB. Lexikon der Sächsischen Landesbibliothek - Staats- und Universitätsbibliothek Dresden Aus Anlass des 450. Gründungsjubiläums im Auftrag der Gesellschaft der Freunde und Förderer der SLUB Dresden e.V., 30-31; <http://nbn-resolving.de/urn:nbn:de:bsz:14-qucosa-150144>

<sup>2</sup> Universitätsbibliothek Leipzig: Geschichte. (o. J.). Abgerufen 20. Juni 2017, von <https://www.ub.uni-leipzig.de/ueber-uns/geschichte/>

Other libraries are willing to digitize their stock and to make their historic sources online available but they do not have the capacities to install the necessary infrastructure.

## Regional Digitization Programs

The regional information supply is organized by the federal states of Germany. In 2016, a website of an association which aims to coordinate the activities of libraries, archives and museums with regional focus listed more than 40 websites offering information on regional and cultural studies.<sup>3</sup> The majority of these websites offered sources about historical places, persons, landscapes and regional topics. They linked to meta-searches in library catalogs and specific databases. Less than half of them included a notable amount of digitized content, though.

Only few federal state governments have already passed a digitization program. The Bavarian website “bavarikon”, with extensive digital content, benefits from the activities of the Bayerische Staatsbibliothek and its Public Private Partnership with Google, but also from the support of the Free State of Bavaria within the framework of a Bavarian cultural concept.<sup>4</sup> Another example of central coordination is *digis*, a service office in Berlin which advises and assists cultural heritage institutions with technical, legal and data expertise. It organizes the transfer of data to the *Deutsche Digitale Bibliothek* and to systems for long-term preservation. The service office is accompanied by a funding program for the digitization of cultural heritage.<sup>5</sup> A very similar approach is taken in the state of Brandenburg.<sup>6</sup> The objective of these service offices is to enable smaller institutions preserving cultural heritage to participate in digitization projects. The funding in these programs supports separate digitization projects with different workflow strategies, technical bases and presentations.

Among other reasons, the launch of the *Deutsche Digitale Bibliothek (DDB)* in 2012 gave an impulse to support digitization and to participate in the DDB. The DDB as a national portal opens a central access to the German cultural and scientific heritage. In June 2017 more than 4.300 institutions are registered at the DDB willing to contribute, but only 384 of them already provide data. The data does not necessarily include digitized documents, it may be metadata only. Of the total of 22 Mio objects only 8.8 Mio include digitized objects. These numbers show the necessity to intensify the digitization activities. The SLUB Dresden is one of the largest data providers of the DDB. At present more than 1.8 Mio objects of the SLUB are available, the largest number of a single institution. A regional Saxon digitization program now aims to expand the representation of Saxon institutions in the DDB and subsequently the Europeana.

## Landesdigitalisierungsprogramm Sachsen (LDP)

In August 2014 the Saxon Minister of State for Sciences and Arts announced a state program to provide Saxon universities and colleges with necessary electronic content and to support the retro-digitization of historic collections in institutions all over Saxony. Therewith, it acknowledged that scientific libraries play an important role in a modern information society and have to be prepared to fulfil changing expectations. More and more library users expect time and location independent access to publications and library sources. With the means of this program the State of Saxony aimed to adequately equip its libraries for the digital future. The Saxon State and University Library, Dresden (SLUB) as a state library fulfils its mission to coordinate library projects and to support other Saxon libraries by coordinating this *Landesdigitalisierungsprogramm (LDP)*.

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<sup>3</sup> Mitglieder in Deutschland – Arbeitsgemeinschaft deutschsprachiger Portale zur Regionalgeschichte und Landeskunde (AG Regionalportal). (o. J.). Abgerufen 7. Juni 2017, von <http://www.ag-regionalportale.de/deutschland/>

<sup>4</sup> bavarikon | Kultur und Wissensschätze Bayerns. (o. J.). Abgerufen 7. Juni 2017, von <http://www.bavarikon.de/object/bav:BSB-CMS-000000000000605>

<sup>5</sup> Allgemeine Informationen. (o. J.). Abgerufen 7. Juni 2017, von <https://www.servicestelle-digitalisierung.de/digis/info/>

<sup>6</sup> Potsdam, F. (o. J.). Koordinierungsstelle Brandenburg-digital - Fachbereich Informationswissenschaften. Abgerufen 15.

August 2017, von <https://www.fh-potsdam.de/studieren/fachbereiche/informationswissenschaften/fachbereich/brandenburg-digital/ziele-und-aufgaben/>

The LDP Sachsen consists of three parts, besides digitization also long-term preservation and the licensing of electronic content are included, a strategy to consider all necessary activities for Saxon libraries and universities.

One declared objective is the comprehensive online access to information and objects of Saxon cultural and scientific heritage. The visibility of Saxon libraries and cultural institutions in portals as the *Deutsche Digitale Bibliothek (DDB)* or *Europeana* shall be increased. The support of smaller institutions without adequate infrastructure and developing knowledge about digitization processes is an explicit objective within the program. The online objects shall be of good use in cultural education, in teaching at schools as well as in higher education and science. Including the long-term preservation in the program is a logical consequence securing the results of the program for the next generations.<sup>7</sup>

## Workflow-software Kitodo and Standardization

In January 2015, a service office at the SLUB began preparations to approach institutions all over Saxony, to adjust workflows and to get in contact with companies specialized in digitization services. The tasks of the service office are the counseling on preconditions for a participation, such as the existence of electronic metadata, open licensing of the digitized objects and advices for copyright verification. At the very beginning of the program it was decided that the digitized objects must be published with an open license, at least CC-BY-SA 4.0 to guarantee free use. The service office accompanies the institutions during the process of selecting collections for digitization, preparing them and also during the complete project period.

For the digitization workflow the workflow software Kitodo is used. It is an open-source, platform independent software which organizes the production, presentation and archiving of digital objects. It is flexibly usable for larger and smaller libraries, archives and also museums, enabling different digitization strategies. Kitodo enables the easy transfer to the *Deutsche Digitale Bibliothek*. The continuing development of Kitodo is organized by a community of libraries, archives and service companies, the SLUB being one of the founding members. The goal of the combined efforts is the organization of necessary resources for the development of new features for the benefit of all Kitodo users. At present Kitodo has approximately 40 members.<sup>8</sup>

One focus in the program was the establishment of standardized workflows and data for external digitization companies. The digitization companies were expected to not only scan the historic materials but also to import the data into Kitodo and to provide metadata and structural data. The application of standardized workflows on all digitization projects within the *Landesdigitalisierungsprogramm* is one of the specifics of the Saxon program. Digitization companies receive detailed instructions on technical parameters, long-term preservation requirements, on metadata and structural indexing. To ensure the same quality in all projects test routines were developed before beginning the digitization process. Sometimes this test processing required more time than expected but resulted in more efficient production processes and continuous quality regarding aesthetics and long-term archiving requirements.

## Review of the years 2015 - 16

Now, in the middle of 2017, the continuation for another two years is already granted and the results of the years 2015 and 2016 prove the successful implementation of the program. One of the wonderful side effects of the work at the service office was the expansion of personal networks, being welcomed by friendly colleagues in their institutions and receiving personal tours through otherwise closed stacks of special treasures. The university libraries of Dresden and Leipzig, which already operated digitization centers, could use the program to digitize selections of their historic collections, such as

<sup>7</sup> Bonte, A. (2016). Aus Sachsen in die Welt – das sächsische Landesdigitalisierungsprogramm. In *Bibliothek der Zukunft. Zukunft der Bibliothek Festschrift für Elmar Mittler* (S. 10-23). Berlin, Boston: De Gruyter. <https://doi.org/10.1515/9783110464016-003>

<sup>8</sup> Kitodo: Kitodo. Key to digital objects. (o. J.). Abgerufen 15. August 2017, von <http://www.kitodo.org/>

manuscripts, early prints of the 16<sup>th</sup> century, and parts of their coin and music collections. The university library of Chemnitz, third-largest in Saxony, provided writings of local historic scientists.

Among the first institutions to participate were the *Oberlausitzische Bibliothek der Wissenschaften (OLB)* in Görlitz and the *Westsächsische Hochschule (WSH)* Zwickau. The OLB is an important regional library of the Oberlausitz, in the eastern part of Saxony, and houses around 140.000 volumes. For the digitization around 1.000 volumes of regional literature of Lusatia were selected. A service provider from Berlin was the third partner in these pilot projects. Regarding the size of the project, the specifics of the stock and necessary preparations, it proved to be a good decision to realize the digitization on-site in Görlitz. The library staff selected the titles based on a local shelf mark and extracted a list which formed the basis for the complete process. It was the service provider who checked the list for already digitized material. The material of this library showed many specifics that caused questions and adaptations during the project phase. One example was a large number of volumes, collecting scriptures on Lusatia. One bound volume consisted of several scripts, that had to be treated as separate writings following cataloging rules. Other books included loose or attached pages or oversize supplements. It needed the expertise of the library staff to prepare the material for the scanning operator. At the same time the digitization rules of the SLUB were applied and extended to secure a common and high quality result for the later presentation. The digitization rules are based on the recommendations of the *Deutsche Forschungsgemeinschaft (DFG)* and have been extended to cover specific needs.<sup>9</sup>

The second project at the *WSH* covered a collection of historic textile and textile engineering literature. This region in the West of Saxony looks back on a long tradition of several handicrafts. The library of a vocational school offering respective education during past centuries possesses a special collection of historic textile literature. The collection is characterized by folders of lose patterns, very often in sizes larger than A4 format. In Zwickau it was also decided to scan at the location of the library. The project was operated by the same service provider as the Görlitz project.

These first two projects were used to develop and expand the standards for the program, to develop know-how and to sensitize institutions and service providers for the demands of the workflow. At the beginning, the specified parameters for Kitodo and long-term preservation were not fulfilled by the scanning devices. The service providers in cooperation with the device manufacturers had to solve different problems with long-term preservation parameters. During the test processing this meant delay of production, but afterwards the production and all following project partners profited from these efforts. Until today all projects start with a defined test production.

At the beginning of the second year, in winter 2016, a workshop at the SLUB Dresden helped to spread the information about the program and to attract new participants. Within the next months, projects in 10 more institutions were started. The university library in Freiberg digitized an important part of their historical collections, including an estate of an important geologist. With the *Sorbisches Institut Bautzen* another Lusatian institution contributed a large collection, representing Sorbian language and literature. An emphasis emerged in the area of music, beside a collection of the musician Carl Ferdinand Becker of the *Städtische Bibliothek Leipzig*, also a manuscript collection of the *Bach Archiv Leipzig* and ephemera collections of musical archives in Dresden are being digitized. At the end of 2016 more than 2 million images had been produced representing 12.000 digital objects.<sup>10</sup> All digital collections will soon be presented on [sachsen.digital](http://sachsen.digital), a website aggregating the digital content of Saxony and showing the diversity and complexity of this regional cultural heritage.

## Tasks of the next two years

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<sup>9</sup> Wenzel, M. (2016). Wie Görlitzer Bücher auf Dresdner Server und von dort in die Welt gelangen /. SLUB Dresden, Geschäftsbericht 2015, 8-9. <http://nbn-resolving.de/urn:nbn:de:bsz:14-qucosa2-74116>

<sup>10</sup> Georgi, S., Meyer, J., & Walzel, A.-V. (2017). In Pole-Position für die zweite Runde. Abgerufen von <http://nbn-resolving.de/urn:nbn:de:bsz:14-qucosa2-79268>

The Saxon parliament approved the continuation of the program for the next two years in spring 2017. Therewith the mass digitization at the university libraries will be continued as well as the digitization of important collections all over the state. Projects have been started at the *Hochschule für Bildende Künste Dresden* with their historic collection of art and architecture, at the *Institut für Länderkunde Leipzig* with historic geographic and travel literature and at the city library in Chemnitz which houses historic regional literature.

A new focus is directed on historic newspapers. The SLUB had participated in pilot projects of newspaper digitization supported by the *Deutsche Forschungsgemeinschaft* (DFG). Within the pilot projects several workflows were tested and evaluated. An important milestone was the development of special features in Kitodo.Production and in Kitodo.Presentation to enable the processing of digital newspapers and to present them in an adequate form. With these instruments it is now possible to proceed with the digitization of the Saxon archive of newspapers. The Saxon *Landesstelle für Bestandserhaltung*, a central coordination office for preservation activities, is also seated at the SLUB Dresden and organized the microfilming of Saxon newspapers in the past decades. This archive of microfilms will be the base for the digitization program.

In spring 2017 we organized another workshop. Besides presenting the program again and getting in contact with new institution the objectives of the meeting shifted to the question of using and promoting the digital content. Two external speakers reported about their experiences with open data and results of a regional cultural hackathon in Hamburg. The following discussion showed high interest of several institutions who would be willing to engage in a similar event in Saxony and we are aiming to organize such a hackathon in Saxony. One of the challenges of the next year will be the establishment of necessary networks, the search of experienced partners and planning for the autumn of next year.

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## Biographies

Simone Georgi studied communication science, American studies and business / economics at the Technische Universität Dresden and at Belmont University, Nashville, TN. She joined the SLUB in 1999 and has worked in the collection management as subject librarian since 2001. Since 2011 she has been engaged in the coordination of digitization activities of the SLUB and now manages the office of the Saxon state digitization program.

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Annika-Valeska Walzel studied history of art and modern German Literature and joined the SLUB in 2012. She is part of the team coordinating the Dresden activities of the national Specialized Information Service art, photography and design [arthistoricum.net](http://arthistoricum.net). Since 2015 she is part of the office of the Saxon state digitization program.