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Possibilities of organizing open access to documents of the National Archival Fund

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Abstract:

The paper considers the issues of creating and using a system for open access to documents of the National Archival Fund of the Republic of Belarus. The main aim is to integrate archival materials and provide users with access to information from the state archives of the Republic of Belarus, taking into account modern standardized requirements to the description of archival documents. The main sources of information are republican archival institutions, regional and zonal state archives.

For end users the system provides one-stop web service to make Belarusian archives as accessible as possible. Previously users had to visit various archival websites for their research, but the system enables them to find information more efficiently from archival materials stored in different archival institutions.

The issues of organizing information interaction between the components of the system and the implementation of the search interface for end users are also considered.

Keywords: digital transformation, open access, archival documents, web services

The global changes in the technology of production, distribution, exchange and use of information that have occurred in the last decade have triggered rapid development of computer technology and telecommunication systems and networks. They have a significant impact on society as a whole and individual areas of its activity - culture, science, production, education. We shouldn't forget that modern digital technologies pose a serious challenge to the very existence of cultural, scientific and educational institutions in their present form, and the future depends on how effectively they will be transformed, developed in order to use the latest achievements in an optimal way.

Digital transformation is relevant not only for the economy, but also for the humanitarian sphere, including libraries, archives, museums. Cultural heritage carries the vital mission of society - maintaining social memory, which is the basis of identity and a necessary condition for moral and ethical education and preservation of the nation. The use of innovative solutions in the cultural sphere is very important at the present stage of development of the information society. The digitization of documentary heritage, the creation of digital archives, the use of modern information and communication technologies are powerful tools that democratize the right of society to access in a form free from any unreasonable restrictions to digital heritage materials, especially those related to the public domain.

Our analysis has shown that the following driving forces of digital transformation for the archival industry of the Republic of Belarus should be taken into account:

- Technology
- Digitization
- Born-digital documents from different information systems
- Open Access initiative
- User requirements
- Integration
- Standards
- Business requirements

Regarding technology, undoubtedly, these are technologies, among which mobile communications, artificial intelligence, and distributed computing should be highlighted.

Digitization is also a very powerful factor. In the past decade GLAMs (Galleries, Libraries, Archives and Museums) invested a lot of effort in various digitization activities within their institutions. The growth rate of digitization of archival materials in Belarus has grown several times over the past decade. The increasing flows of digital documents should be properly managed.

It is also worth noting the strong influence of the open access initiative that began in the academic community two decades ago. This initiative was taken up by the library community and is now attracting increasing attention from government agencies related to archival industry of the Republic of Belarus. Open access it is not only free and immediate access to the material but it should provide legal conditions for full reuse of these materials.

Significant changes are taking place in the psychology and behavior of information consumers. They want to have everything here and now without wasting their time visiting libraries and archives. COVID19 has also had a strong impact on the demand and use of online resources, which is impossible without digital transformation.

In the context of digital transformation, it is possible to more carefully approach the solution of the most important problem of integrating heterogeneous information systems and resources operating on different devices and software platforms. It is impossible to organize integration without generally accepted standards.

The need for standardization is evident and in fact still remains a challenge for the archival industry in Belarus. While standards had already existed for many years for libraries, especially the museums and archives were and still are challenged with the adoption and introduction of standards for both museums management processes and metadata schemas.

In this context the digitization initiatives can be viewed as overlapping and interacting processes responding to internal and external requirements. This affects the domain of metadata management, technical infrastructure, software design and rights-management facing fast advances in technical evolution (Internet and social media).

The digitization initiatives in the past decade have led to a tremendous increase of digitized objects in the archives. Although digitally available, these objects are often not easily

accessible for interested users because of the distributed allocation of the content and the variety in data structure and standards.

Computerized, unified archival management systems, or semi-automated digitizing applications, for example, considerably ease the work of archivists, just as user interfaces linked to these systems lighten the tasks of users. The appearance of new types of documents, the exponentially growing volume of born-digital information to be stored, along with changing expectations of users, on the other hand, present new challenges to both the archival profession and scholars of archivistics.

The network of state archival institutions in the Republic of Belarus consists of two groups: central archives and institutions, twenty five regional and local state archives. The central archives and institutions group includes National Archive of the Republic of Belarus, National Historical Archive of Belarus in Minsk, National Historical Archive of Belarus in Grodno, Belarusian State Archives of Films, Photographs and Sound Recordings, Belarusian State Archive-Museum of Literature and Art, Belarusian State Archives of Scientific and Technical Documentation, Belarusian Research Institute of Records Management and Archival Studies, Belarusian Research Centre for Electronic Records, Central Laboratory for Microfilming and Restoration of Records of the National Archival Holdings of the RB, Republic-level Technical Laboratory for Security Microfilming of Permanent Records. This group plays an important role in providing an access to archive documents, because they not only perform a cumulative function, but are also hubs for the implementation of service functions, both for other archives and for end users of archival information.

Each archive has an automated information system called «Archive MIS » that is designed to perform accounting functions for archival documents in accordance with the legislation of the Republic of Belarus.

One of the main tasks of the bodies of archival affairs and office work, state archival institutions of the Republic of Belarus is the realization of the rights of citizens to receive information contained in the documents of the National Archival Fund of the Republic of Belarus (hereinafter - NAF). However, «Archive MIS » operates as a stand-alone desktop application without an access to the Internet.

Thus, for a contextualized personalized discovery of archival content, the following problems have to be solved: First, a single point of discovery is necessary, that searches all related data silos, which in turn requires an intelligent aggregation of results and a harmonization of metadata. Second, users should be able to access the content from within their current task, and results should be contextualized towards the task and personalized based on the user interests and knowledge.

In addition, the use of electronic copies of archival documents has advantages over the use of original documents on paper: - the safety of documents on paper is ensured; - the possibility of repeated copying without loss of quality is provided; - the number of documents issued to users on paper is reduced, the load on the reading rooms of archives is reduced; - an electronic copy of the document can be promptly transmitted at any distance; - access to a digital copy of the archival document can be provided at any time.

The main goal of the information system for open access to NAF documents (hereinafter – ISOA2NAF) is to design and implement an infrastructure that enables ubiquitous access to digital cultural heritage content of Belarusian archives.

ISOA2NAF partially supports an OAI environment and information model. Physical or digital items which contain information are known as data objects. All state archives of Belarus are members of the designated community for ISOA2NAF. All of them should be able to interpret and understand the information contained in a data object either because of their established knowledge base or with the assistance of supplementary "representation information" that is included with the data object.

An information package includes the following information objects:

- Content Information: this includes the data object and its representation information
- Preservation description information: contains information necessary to preserve its affiliated content information (such as information about the item's provenance, unique identifiers, a checksum or other authentication data, etc.)
- Packaging Information: holds the components of the information package together
- Descriptive Information: metadata about the object which allows the object to be located at a later time using the archive's search or retrieval functions

There are three types of information package in the OAIS reference model:

- Submission Information Package (SIP): which is the information sent from the producer to the archive
- Archival Information Package (AIP): which is the information stored by the archive
- Dissemination Information Package (DIP): which is the information sent to a user when requested

The general scheme of the system functioning is shown in Figure 1.

Belarusian Research Centre for Electronic Records is an operator of ISOA2NAF.

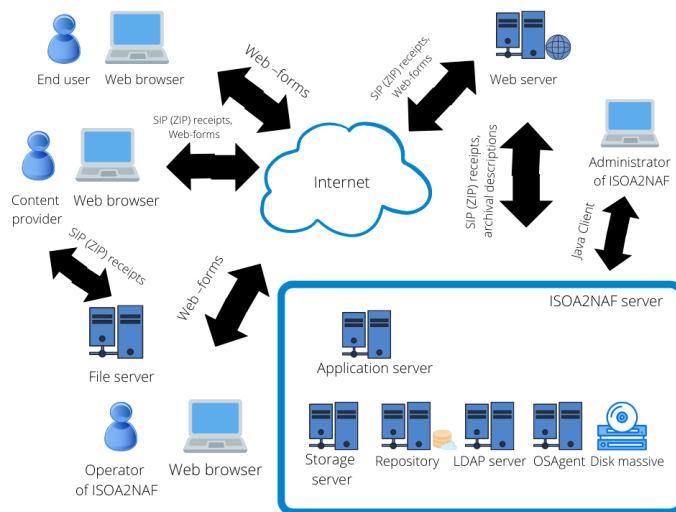


Fig.1

A special program module called «SIP package software» has been developed for generating SIP archive packages and delivering them to ISOA2NAF. It provides data export from «Archive MIS » installed in the archive. The result of the work of the «SIP package software» is a zip file that includes xml files of SIP packages of funds or SIP packages of reference books, which will later be used to load SIP packages into ISOA2NAF. The formation of SIP packages is carried out using the operation of converting information from the «Archive MIS » database. The SIP package software is installed on the automated workstation of users and provides the formation of xml files, the initial data for which are the archive descriptions of the «Archive MIS » database and Archive MIS » directories.

The general scheme of the «SIP package software» is shown in Figure 2.

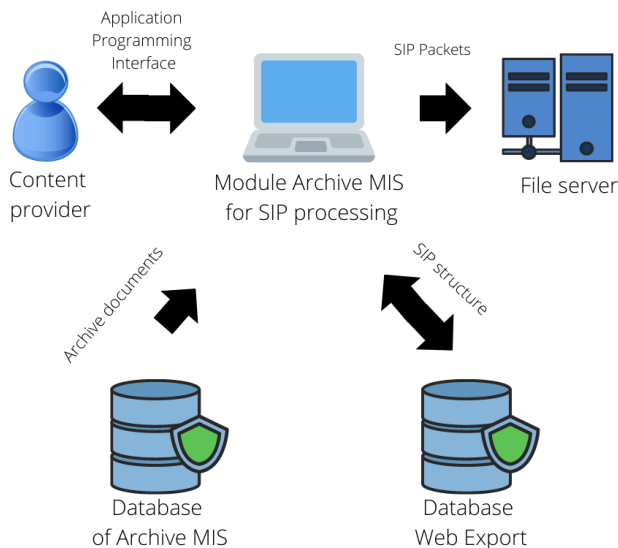


Fig.2

For end users the system provides one-stop web service with search and browse options to make Belarusian archives as accessible as possible. Previously users had to visit various archival websites for their research, but the system enables them to find information more efficiently from archival materials stored in different archival institutions.

Given that the ISOA2NAF does not upload documents that are subject to restrictions or restrictions on access, the system itself is fully in line with the principles on which free licensing of Creative Commons is based. The closest thing to our law and the principles of ISOA2NAF is a free Creative Commons license such as CC Attribution – ShareAlike (CC BY – SA), where the user of the product must indicate authorship, and derivative products must be distributed under the same license. III Support for persistent identifiers of resources and documents.

Further development of ISOA2NAF will be aimed at improvement of the search interface, working with the documents that are subject to restrictions in accordance with the legislation of the Republic of Belarus, implementing semantic Discovery services, supporting Linked Data, implementing RESTful API, integration into international information space.

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