The Archives Governance in Conditions of Archive Fund Digitization

Abstract: Introduction. The scientific and technical progress processes in the 21st century led to a state strategy formation for the general digitization of the whole country. With the implementation of innovative digital technologies into the work of archival institutions, the state and society will have the opportunity to expand their access to the informational base, and the use of modern methods will help them to get the most objective and authentic information for the state, society and scientific regulation, open the additional resources for analyzing the information wealth of archival funds. Purpose and methods. The purpose of the research is the modernization process implementation analysis of Ukrainian archival space based on means and instruments of archival institution digitization through the prism of state policy. To solve the problem of the research, a traditional set of general scientific principles (determinism, reflection, unity of opposites) and methods (analysis and synthesis, systematic and structural, questionnaire, content analysis, observation, statistical) were used. Results. The article describes the normative tools as an element of state regulation of archival space digitalization in Ukraine. Archival digitalization elements in the context of modernization transformations of society and the state were analyzed. The results of the study are confirmed by a sociological survey on the topic: “Do we need the digitalization of the archives?” Conclusions. The whole way of archival industry development shows that the main contradiction in archival activity is tracing to traditional and innovational methods of archives work. The reason is the need for sustainable components to stabilize the process of archive development, which eventually will form compulsory innovations.
Keywords: archive, innovation, management, digitization, information, rebranding, technologization, fund.

1. Introduction

The problem formulation. The place of archives in the contemporary world is defined by the role played in it by the document as the operational regulator of different spheres of the person, society, and state activity. The relevance of retrospective documentary information for resolving the tasks of socio-economic development of the country, in the context of the state and municipal administration, makes the archive a very stable and operative link in the management activity of state and local authorities. The authenticity of documents stored in the archive, their inviolability means that they have an evidential character. While fulfilling the socio and juridical appeals of the citizens, the archive provides the functioning of the social protection system of the population. Organizing the use of retrospective documentary information for research purposes, the archive itself has the features of scientific organization. Popularizing the country's history, in general, and native land, in particular, archive plays the role of the cultural-educational establishment.

The modern state policy in the sphere of Ukrainian society's digitalization opened the way to radical changes in archive space. It was the beginning of implementational processes in the computerization aspect in the Ukrainian archival sphere. The chief task of contemporaries is to preserve and realize these possibilities concerning the archival industry in Ukraine and its cooperation with world archival donors.

The general, historical, special, scientific-technical, and other archives exist as elements, which do not even have the systemic peculiarities so necessary for modern society. The State Agencies of Archives fulfill the limited quantity of functions and do not have the necessary responsibility for conducting the single archival policy in conditions of the new digitalized society enhancing including the digital policy. The contradiction in the development of archival activity is that from the one hand, the archival sphere plays as traditional and simultaneously the conservative branch, and from the other hand – appearing new digitalized technologies on the market of innovations, which create the powerful external impulse to the development of the state, municipal and local archives in regions.

Nowadays, users are more often ready to work not only with paper but also with digitized materials. The important area of archives activity is to create
projects for archival funds digitalization: aimed at data coding for systemic analysis. The fulfilling of this task will help to preserve and present to a wide audience a special archival material, allow conducting an open informational search.

**State study of the problem.** The creation of archival documents digital copies and the further organization of remote access to them is the essential factor for scientific knowledge development and an instrument for historians, political scientists, lawyers, managers, philosophers work. These problems are discussed in the works of A. Aleksieienko (2012), V. Liakhotskyi (2004), Yu. Yumasheva (2017), N. Vovk (2016) etc.

The informatization of archival activity as a matter of communication process is viewed in the works of D. Volodin (2012), S. Turovska and I. Smolian (2015), I. Tiurmenko (2016), O. Haranin (2013), H. Bayandin (2019). Despite a significant number of scientific publications concerning the modern role of archives for society, we should note that the authors of the majority of works think about it in the context of using in state and scientific spheres, they do not consider the archival space as the global public necessity in the aspect of digitalization.

The question of the digitalization of the archival documents in the system of innovational archival management is researched by S. McKay (2003), E. Warren-Jones (2018), G. Bak (2021), B. Şentürk (2014), N. Azim et al. (2018), B. Namande (2012), K. Seliverstova (2013). The modern specialists are learning the peculiarities of new data formats in conditions of enhancing new informational technologies, point out the main stages of archival documents digitalization, but the problem of process systematicity of digitalization remains unstudied, etc.

**Unresolved issues.** The key element of the modern world's existence is informational technologies that penetrate practically through all the spheres of public activity, even the archival sphere. The processes of scientific-technical progress in the 21st century caused the formation of a state strategy for the general digitalization of the country. Due to the implementation of innovative digital technologies into the work of archival establishments, the state and the society will have the opportunity to widen the access to the information base, and the use of modern methods will help to get the most objective and authentical information for state, public and scientific regulation, open the additional resources for analysis of archival funds informational wealth.

During the structuring of scientific research were found out several open questions concerning the modernization transformations in the archival activity. Firstly, to characterize regulatory tools as an element of state regulation of the archival space digitalization of Ukraine. Secondly, to analyze the elements of
archival digitalization in the context of the society and the state modernization transformations. Thirdly, to formulate conceptual features of the digitalization program implementation of Ukrainian archival establishments based on a sociological survey.

2. Purpose and methods

The purpose and research tasks are the implementation analysis of modernization process of governing system of archival branch based on means and digitalization instruments due to archival institutions through the prism of state policy.

To enrich the established purpose, we should solve the following tasks:

– reveal the legislative framework and the tools concerning the digitalization of the Ukrainian archival system;
– identify the elements of archives sphere digitization;
– formulate the conceptual features of program realization of Ukrainian archives digitization.

Methodology and methods. For reaching the established purpose and resolving tasks of the research, we were conducted by the principle of objectivity, which let us reveal the multi aspects of the research object and allowed us to become closer to the reality of archival system functioning.

In the capacity of methodology was used the informational theory, which in conditions of common digitalization turned out to be of peculiar importance. As the theory of information gives a chance to implement the informational approach to learning of documentary archival funds using different forms of represented archival sources: traditionally papery and innovational digital.

The research is based on a systemic approach that characterizes the innovative digital technologies as the way to archival space modernization and represents its important compound part of a socio-cultural cluster of public development.

During the process of structure exploring of the Ukrainian archival system, we used the structural method, which gave an opportunity to describe the special peculiarities of the archival institutions functioning and also develop the strategy of its work planning in the context of modern challenges. Through this method, we defined the level of legislative base readiness to systemic implementation of Ukrainian archives digitalization.

In the research process, the authors used the method of situational studying, which allowed to consider the tools of innovational digitalization in the process of archival adaptation to the contemporary challenges to explore the concrete examples through the prism of other instrumentation in a real situation.
The use of analysis and synthesis methods enhanced in defining the level of themes learning and enlightenment the problems of Ukrainian archival system development.

In the framework of the study, we conducted the SWOT-analysis, which helped in evaluating the sphere of archival institutions development.

The practical part of the research is based on the methods of social, socio-psychological, pedagogical, and governing analysis that were used during the respondents’ questionnaire. With the help of these methods, we revealed the opportunity to define the level of necessity for digitalization implementation in everyday archival activity from the position of staff and visitors. The questionnaire method also allowed defining the research effectiveness in the sphere of innovational archival management.

**Information base.** The question of the functioning and governing of the archival system is widely examined by modern scientists and experts in this branch. It is connected with the extremely high development of innovational technologies and society demands for informational sources, preserved in archival funds. In scientific literature, rather deeply researched the question of archival branch modernization. The theoretical-methodological base of the research is the works of P. Conway (2000), Ya. Kalakura and Yu. Kovtaniuk (2019), T. Beamsley (1999), D. Lanskaya and A. Gergel (2019), S. Yegorov (2010), A. Radchenko (2018).

The object of the authors’ research in the article is the Ukrainian archival branch. It was considered the level of innovational technologies implementation to the museums’ work, their collaboration with the visitors, and users satisfaction with museums service. The social survey was conducted in February-March 2021. Based on complex analysis implementation of innovative archival management, through the gathering of primary and secondary data, specifically, the questionnaire, was defined as the toolkit for designing a classical model of digital modernization of archival functioning and the establishment in their activity the strategic directions of improving the archival system.

### 3. Results and discussion

#### 3.1. The regulatory control of the archival space digitalization

Recently, there has been an increasing demand for involving new informational technologies due to documentation support in governance. Especially it is actual for the archival institutions, which are obliged to work with a great number of documents. They inevitably face the task of deep systematization, storage, and control of the huge data amount that is impossible without the use of modern digital technologies.
The necessity of the Ukrainian archival space digitalization conditioned by a great majority of tendencies, which characterize the contemporary situation in governing branch of the archival documentary funds in Ukraine. Nowadays in Ukraine is a supportive atmosphere for implementing innovational digital technologies in the archival sphere. Firstly, we should note the band “Diia”, which is realized in Ukraine in the framework of the digital state project (Nazarova, 2019). This task requires the fastest, most mobile transition to a digital form of business collaboration, including automatization of both inner and outer legislative processes of documents exchange.

In April 2021, the Ministry of Digital Transformation of Ukraine submitted for discussion a draft Law of Ukraine: “On Amending the Law of Ukraine”, “On the National Informatization Program” (Ministry and Committee of Digital Transformation of Ukraine, 2021). This project envisages a complete transition to the provision of public services in digital format. That is, in Ukraine, within five years, all spheres of state regulation must be digitized and transferred to electronic document circulation. Accordingly, this will lead to the enlargement of the work effectiveness with the documents and its governance due to the process of interaction with citizens’ appeals.

Also, significant remains the question of quality realization of this initiative, innovative digitalization in the context of different level competency of state bodies at various levels, in this case. The plan of relevant state-level measures for the development of digital competencies was adopted by the Cabinet of Ministers of Ukraine on March 3, 2021 (Cabinet of Ministers of Ukraine, 2021). It is mandatory for all state regulatory bodies. These requirements are intended to establish a single typical standard of documentation functions for state automatically governing system and also ensure the opportunity for their further interaction between the state information systems.

Considering that the archival space in Ukraine relates to the state departments, which have not yet deployed a full-fledged digitalization process or can experience various difficulties in the process of its implementation, the state regulatory policy in the archival space branch should be directed on the enhancement of conceptual approaches for building a single possible automated system of digital document fund for archival space, that is connected to the application “Diia”. This gives an opportunity to improve the management of the Ukrainian archival space.

Such a project implementation would allow in rather short terms to decide main tasks, set before the state archival institutions by the Ukrainian government – to implement the necessary transition of all levels of state archives on the digital document circulation in their inner activity.
Today, there are several strategically important directions for the state policy realization concerning the governing of archival funds digitalization, which are closely connected with the development and implementation of the automatic systems of managing the archival branch in Ukraine.

Therefore, it should be noted that in September 2020, the head of the State Archival Service of Ukraine, Anatolii Khromov, presented the “Strategy of the development of archival affairs until 2025”, which provides for strengthening the informatization of the archival space. The strategy is developed taking into account the regulatory and legal system of Ukraine in the archival industry, as well as the legislative initiatives of the European Union on access to archival information resources (State Archival Service of Ukraine, 2020b).

As part of the strategy, it is indicated that one of the chief tasks of the archival sphere is to store information resources and provide an opportunity for equal and mobile access to the citizens (State Archival Service of Ukraine, 2020). The authors of the article believe that the realization of this task is possible only through the implementation of modern digital technologies in archival activity.

Every day the digitalization is becoming more relevant because of the economic crisis caused by the COVID-19 pandemic, which has become an insurmountable barrier for scientists and even usual citizens in receiving information from archival funds. In addition, this situation causes problems in archival institutions management, which do not cope with the great number of requests from citizens.

The implementation of the single state system for governing the archival resources with the help of the archival funds digitalization and conjunction the system to the “Diia” application will cause the following:
  – the simplification of submitting the request from the individuals and the legal entities to the archival institution;
  – the maintenance of ongoing process of scientific research, connected with the processing of archival funds;
  – time reduction of requests processing from individuals and legal entities by archival institution;
  – the opportunities of the remote work of the archival establishment staff in conditions of their access to digital documents copies;
  – the improvement of administrative service system connected with requests to the archival institutions;
  – ensuring the preservation of archival information resources, as a result of the archival funds digitalization;
  – resolving the problem of people crowding, which is associated with the pandemic COVID-19.
It should be noted that in connection with the amendments to regulations, which correlate with the update of the state informatization program, the management of archival affairs within its digitalization becomes real and makes it possible to bring the archival industry of Ukraine to the latest stage of its development. That is to introduce the latest information technologies. International projects' implementation and cooperation with international donor organizations will give a new impetus to Ukrainian archival affairs development. In addition, the synchronization of the Ukrainian archival space will take place under international standards because normatively and technically, it will be harmonized with the help of e-democracy and e-government elements.

3.2. The elements of digitalization of archival space management

In the past, the main task of the archives was to ensure the preservation, primarily of paper documents, but the widespread dissemination of innovative digital technologies, the introduction of a digital state, have led to fundamental changes in the nature of the documents and, consequently, in the field of documentation and document management. Today the great majority of the documentation is created in electronic format, and over time, the number of electronic documents will only grow. The ability to receive, retain and use them becomes vital for the effective delivery of public services. Therefore, archives need to follow the path of digitizing the archive fund.

Let us consider the basic elements of archival system digitalization. Main elements of archival digitalization are the following:

1) creation of a single electronic system of archival funds descriptions;
2) digitalization of arrays of documents, stored in the archival institution;
3) online system of submitting requests from the individuals and entities;
4) transfer to the archive of two types of documents, digital and paper;
5) popularization of the archival institution activity on the online platforms.

Let us analyze in detail each aspect of the archival space digitalization of Ukraine.

One of the first steps towards the modern epoch in archival development is a single electronic system creation of archival funds' descriptions. This would allow citizens to work in the online system and not waste time on the manual search of necessary cases on all websites of the archival institutions. At the current stage, Ukrainian archives in the framework of their activity are scanning the funds' description and providing access to all the official websites, but this is rather ineffective and does not address the issue of mobility of access to archival information. (Prokop, 2020). Especially considering that district
and city archives are not always presented online. Such a single system existence would simplify the work of the archival establishment staff, as the search for archive funds would be done through an electronic system, such as keywords, chronology, the institution that produced a document, etc.

Perhaps the most important aspect of creating a digital archival space is the “digitization” of arrays of archival documents stored in the funds. As E. Warren-Jones considers, who is one of the participants in the project concerning the digitalization of the archival documents “De Gruyter Book Archive”: “...it is impossible to digitize independently, this is work for the whole team... the development of a digital archive is not something that cannot be taken seriously” (Warren-Jones, 2018). For a large-scale project of the digitalization of the documents, which are placed in the Ukrainian archive funds, we should first bring changes to the staff list of the archival institutions. Because such a project requires a staff of skilled workers: PC operators (will perform work on digitization of archival sources using scanners), system administrators (will enter digitized data on media), a project manager who will manage the process of project implementation.

As documents are digitized, a new urgent question arises: how and on what digital media, digital documents should be stored. It should be noted that the digitalized documents can be stored: on a server (requires powerful servers), paid digital clouds (not efficient and secure), hard drives (not efficient). The advantage of choosing a storage site is given to the server because, from a technical point of view, it is more profitable and can be connected to the national system of storage of archival information sources.

The management of the archival information digitalization process is also connected with risks that need to be considered at the management planning stage. One of the main problems of digitalization that is deeply discussed by the experts is the protection and access to digitalized documents. G. Bak believes that the digitalization of archival documents will increase access to them but can also violate the confidentiality of archival information, so he recommends to the archives to make the selective digitalization, ie a clear selection of what will be digitized. Also crucial for archival digitization within the protection of the confidentiality of archival information sources should be the availability of appropriate hardware and software that will meet the standards of information protection (Bak, 2021).

It should be noted, that according to the website of the State Archival Service, a pilot project on the creation of single information space of the “Archium / Apxiym” archive was presented in Ukraine, work on which was started in 2019 by the Central State Archive of Public Organizations of Ukraine.
The developers claim that this resource will enable them to present the digitized documents, search for them, as well as make the order through the user’s personal account. (State Archival Service of Ukraine, 2020a).

In conditions of the COVID-19 pandemic, the creation of the new mechanism of management for requesting the archival institution from the individuals and legal entities has urgent character. The Ukrainian archives, even before the pandemic, worked through e-mail, but its effectiveness was not very high. Accordingly, the same situation was in the period of quarantine restrictions. That is why, for the direction of requests, we need a single system, which in every archive will be administered by the individual, through which the user will be able to maintain a real-time connection with the applicant. To implement this initiative, the “Diia” brand is perfectly suitable, which has the necessary functional tools.

When planning the digitalization management of the archive system, we assume that the transfer to the archive for storage of new cases should take place in two formats: paper and digital. All these are needed to get rid of problems due to the lack of documents digital copies in the future. Since the amendments to the Law of Ukraine “On Electronic Documents and Electronic Documents Circulation” (Verkhovna Rada of Ukraine, 2018) have been made, we believe that the transfer of documents of this format to the archive will not produce difficulties, neither in archival institutions nor in enterprises, institutions, organizations that transmit documents.

To promote the activity of each socio-cultural institution, we use the main thing in the communication with users – online platforms. The most effective of which are websites and social networks Facebook (19 million users in Ukraine), Instagram (16 million Ukrainian users) (Vasylenko et al., 2020).

The use of online platforms to promote the work of the archival system of Ukraine positively signs on the archival branch image. This will also make it possible to track the main news from the archival establishments’ life. It should be noted that the archival institutions with the onset of the pandemic are actively illustrating their work on social networks, especially Facebook. This situation is closely connected with the fact, that the archives focus on the age range of 35+, which constitutes the main category of Ukrainian Facebook users (Mnews Digital Agency, 2021).

In Ukrainian Internet space are actively developing web portals of the central and regional archives, as well as a peculiar place belongs to the site of the State Archival Service of Ukraine. Websites usually provide information about the archive work, a list of funds, the history of the archival institution, and
so on. The traditional one is conducting online exhibitions of unique documents belonging to the National Archival Fund (NAF) (Vovk, 2018). Such practice, especially popular in the Central State Historical Archive of Ukraine, Kyiv, the Central State Archive of Public Organizations of Ukraine, the State Archive of Mykolaiv Region, The State Archive of Kherson Region, and of course on the website of the State Archival Service of Ukraine, represents a collection of unique historical documents, stored in various archives of Ukraine.

The archives' popularization through online means can be effective in attracting sponsors, patrons, donor organizations. Their involvement in the system of Ukrainian archives will provoke the finance infusions that can be used to develop archive digitization.

During the research, to confirm its results, a survey of two categories of respondents was conducted on the topic: “Do we need the digitalization of the archives?” The first questionnaire among the archival institutions' staff, the second one among stakeholders (scientists, ordinary citizens), dealing with archival institutions.

The questionnaire for the archival institutions' staff contained four questions to which it was necessary to give a short answer “Yes” or “No”:

– does the archival institution need to have a website and pages on social networks Instagram and Facebook, which would be filled with comprehensive information about the archive activities and its funds fullness?

– is it necessary to digitize the documentary array of archival funds?

– will the communication of stakeholders with the archival institution through the “Diia” brand be effective?

93% of respondents gave a positive answer to the first question: “Yes”, and only 7% believe that the archival institution should not be represented on the global Internet. 100% of respondents believe that a separate staff unit is needed to digitize the archive fund. Only 64% of archival institutions employees are ready to interact with stakeholders through the brand “Diia” (Figure 1).

The stakeholder questionnaire included four questions, to which it was also necessary to give a short answer “Yes” or “No”:

– does the archival institution need to have a website and pages on social networks Instagram and Facebook, which would be filled with comprehensive information about the archive activities and its funds’ fullness?

– is it necessary to digitize the documentary array of archival funds?

– would you like to work with archival documents online?

– would it be comfortable for you to submit requests to the archival institution through the “Diia” brand?
**Figure 1.** The results of the sociological questionnaire for the archival institutions staff: “Do we need the digitalization of the archives?”

Numbers 1, 2, 3, 4 sign figures for questions in the questionnaire

Source: own development

**Figure 2.** The results of the sociological questionnaire for stakeholders “Do we need the digitalization of the archives?”

Numbers 1, 2, 3, 4 sign figures for questions in the questionnaire

Source: own development
The total number of surveyed respondents is 14 persons, which are constantly or according to need working with archival establishments. 86% of respondents gave a positive answer to the first question, believing that the representation of the archival institution on the global Internet is a mandatory requirement today. All the respondents, 100%, answered positively to the question about the necessity of archival funds digitalization. However, not all the questioned persons are ready to work with digitalized archive documents online – 86%. The idea concerning the collaboration with the archival establishment through the brand “Diia” attracted 71% of respondents (Figure 2).

It should be noted, that the survey of respondents was conducted during February-March 2021 among the staff of two archives in Kremenchuk and also among scientists and ordinary citizens from different regions of Ukraine. As we can see, the tendency of archival fund digitalization in the context of governing the archival establishment is, rather, positive. The majority of the questioned agreed with such changes in the functioning of the archival system work.

4. Conclusions

The whole way of the archival branch development shows that the principal contradiction in the archival activity is manifested in the relationship between the old and the new, traditional and innovative. The reason for this is, on the one hand, the need for stable components to stabilize the process of archives development, which later develop into mandatory innovations, without which the dynamics of this process development is impossible. Preserving cultural diversity and traditions is one of the fundamental challenges of the millennium. Therefore, there is a need to implement measures to create, disseminate and protect this information in digital form, which will preserve the cultural heritage for future generations.

1. Proper management of the archival sphere digitization will lead to satisfaction with the archival services of citizens, will allow archives to monetize the provision of their services. Give a chance for citizens to choose the archival service or to conduct a personal search on digitalized, transferred to a single stock register of archival funds descriptions. Also, it will simplify the work of the archival service staff in responding to citizens' inquiries and accepting archival documents for storage.

2. Greater access to collections can bring together huge, diverse collections and inspire new research. Due to the priority of digital projects, distribution of funds, and joint work, archival institutions will receive only positive changes in the process of storing collections of documents.
3. Digitalization creates new challenges and burdens for staff and institutions that did not exist before. Part of the problem is that there is currently no consensus on the digital conversion or preservation of digital materials, but steps have already been taken to harmonize this process.

4. Information dissemination on the activities of archival institutions on the global Internet will help to implement the educational function of archives among young people. For example, flash mobs can be organized to create a better generic tree based on a private archive. Alternatively, archival workers can conduct online lectures on pages in social networks, on topics related to documents that are stored in their funds.

5. An important aspect of digitalization is the personnel composition of the archive. It is necessary to understand, the archive system has changed, and now the staff of the archive institution must include IT specialists who will accompany the digitalization implementation process. Also, classical archival professions and people who work in these positions should be loyal to the latest transformations and understand that these changes are necessary.

The scientific novelty consists in the development of theoretical foundations in the field of archival institution management in the context of digitalization, including a set of methods of analysis, synthesis, and systematization, to develop the problem of introducing technologies for managing digitalization processes in the archival sphere and provide practical recommendations for their implementation in the archival space for its updating.

The significance of the study is that the outlined and proposed recommendations, proposals, and conclusions can be used to address current issues of digitization management of the archival industry and promote its practical activities.

Prospects for further research require further study of the process development of digitalization of the archival sphere, archival institutions' modernization because this is the main condition for the further development of the archival industry in Ukraine.

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Information about the Authors:

**Daria Vasylenko**, Senior Lecturer, Kremenchuk Mykhailo Ostrohradskyi National University, 20, Pershotravneva St., Kremenchuk 39600, Ukraine; e-mail: dvoloshka05@gmail.com; orcid id: https://orcid.org/0000-0001-9052-8287 (corresponding author)

**Larysa Butko**, Assoc. Professor, PhD, Kremenchuk Mykhailo Ostrohradskyi National University, Kremenchuk, Ukraine; e-mail: larysabutko@gmail.com; orcid id: https://orcid.org/0000-0002-8817-3381

**Dalzar Salem**, Assoc. Professor, PhD, Knowledge University, Erbil, Iraq; e-mail: sdalzar@gmail.com; orcid id: https://orcid.org/0000-0002-2727-666X