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Current trends in the use of archives for studying the history of information technologies and media

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Abstract. The purpose of the study was to investigate the functionality of digital platforms, technologies used for digitisation and access to archival materials, and to identify problems and potential for improving Ukrainian platforms in the context of archival development and the integration of national initiatives into international digital archives. It was based on the analysis of digital archives and resources of interactive platforms, such as "Google Books", "Digital Public Library of America", "Internet Archive", "Europeana", "Archive.org", "HathiTrust", and "The British Library Digital Collections". The main focus was on the development of digital platforms that play an important role in preserving the cultural heritage and history of information technology and media. The "Europeana" platform has become one of the main examples of successful application of innovative technologies for digitisation of cultural materials. The study examined the development of Ukrainian analogues of digital platforms, in particular, "Diia.Digital education", "Archive of Ukrainian Radio" and "Ukrainian Institute of National Memory". These platforms provide access to digitised materials, which contributes to the preservation of national memory and the development of digital literacy. As a result of the study, a comprehensive analysis of digital platforms for preserving cultural heritage and media history was carried out, in particular, using the example of "Europeana" and its Ukrainian analogues. However, it was noted that the development of these platforms still needed to be improved, in particular, in terms of multimedia content, accessibility to a wide audience, and integration with international digital archives. The importance of further development of technologies for improving access to archival materials and integrating local initiatives with global resources was emphasised, which would deepen interaction between national and international digital archives. Overall, the study highlighted the importance of continuous development of digital technologies for the preservation of cultural heritage and national memory, and highlighted the need for further research and improvement of digital conservation practices, in particular, the integration of national initiatives into global digital platforms

Keywords: document management; digital transformation; resource evolution; data storage; data processing; communication platforms

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Introduction

The history of information technology and media has always been an important topic for research, as these areas have become the main components of modern society, defining cultural, economic, and social transformations. Since the early 2000s, archives have played a significant role in the study of this topic, as they have become a source for in-depth analysis and reconstruction of the past, providing access to numerous archival materials, in particular documents, technical specifications, audio-visual recordings, and user data. I. Matyash (2022) considered the main stages of reforming the archival system, and key problems that arise in the process of implementing new initiatives, such as digitalisation and integration of modern technologies in archival affairs.

Analysis of trends in the use of archival resources for studying the history of information technologies and media is becoming particularly important in the context of technological changes. With the development of digital technologies, the archival practice itself has also changed: from conventional document storage to the active use of innovative approaches and tools. In particular, archives have become important for studying the evolution of technologies, and their impact on society, culture, politics, and worldviews. One of the important aspects that was identified in the current research was the problem of insufficient integration of archival resources with the latest technologies for a comprehensive investigation of the impact of information technologies on society. The paper by D. Saputra *et al.* (2024) provided a systematic review of the advantages and disadvantages of implementing technologies in archival systems. The researchers analysed the impact of digital tools, automation, and artificial intelligence on archive performance, and discussed challenges such as data security and technology dependence.

Currently, large amounts of archival data in the form of texts, images, video and audio materials that are in digital format are actively used for reconstruction and study of various aspects of the development of media and information technologies. The researchers are faced with the need to improve the methodology for analysing archival resources using modern computer and information technologies. The study by N. Zahara & T. Salim (2022) provided a systematic review of the literature on the conservation of digital archives, in particular focusing on current practices, challenges, and strategies for ensuring long-term access to digital resources. Various technological and methodological approaches to maintaining the sustainability of digital archives were analysed. One of the biggest challenges facing archivists and researchers is the preservation and access to digital archival resources containing unique information, in particular due to the rapid obsolescence of technological platforms for data storage. Therefore, the preservation of archives in digital format has become an important topic for many studies. The paper by K. Lobuzina (2017) considered the development of librarianship in the context of digitalisation, focusing on changes in the structure and functions of libraries, and on new approaches to storing and processing information in digital format. The researcher analysed the role of libraries in the modern information society and their adaptation to digital technologies. In numerous studies that addressed the topic of the impact of digital technologies on archival practice, new concepts of archives related to the use of modern technologies were analysed. For example, L. Opgenhaffen (2022) focused on how digital tools have changed archaeological archiving practices, making it possible to increase the availability of archives and create open archives for broad access to scientific data.

Research by E. Røssaak (2020) highlighted new approaches to the archive that go beyond the traditional understanding of the archive. M. Manoff (2020) and A. Yskak & G. Zhumatay (2022) raised the problem of the transition period of archival theories, where new archival paradigms are formed based on accumulated data, which determine social processes and scientific activities in the modern digital environment. Research by A. Andibor (2024) concerned the importance of information and analytical support for archival institutions in the context of military conflict, in particular, the introduction of digital technologies for storing documents and ensuring access to them. It was emphasised that, given the loss of cultural heritage and archival funds resulting from aggression, it is particularly important to develop digital systems to ensure the security of archives, restore damaged materials and international cooperation to restore access to lost archives. A. Poole investigated the scientific literature on the information activities of community archives. The paper highlighted key aspects of their role in preserving history, accessing information, and strengthening community identity. The study by Rusnaedi (2022) analysed the role of archives in improving the quality and efficiency of administrative services, in particular, their contribution to data availability and management decision-making. The paper emphasised that the introduction of systematic archival practices is an important factor in improving the work of institutions. Current research trends related to the behaviour, needs, and expectations of archive users in the digital age have been investigated by C. Harris (2010).

Digital archives are becoming not only tools for storing information, but also important tools for reconstructing cultural and social processes that took place at different stages of technology development. The challenges associated with archiving and storing digital data require new approaches to integrating humanitarian and technical knowledge, and the use of modern methods of big data analysis and machine learning. Preserving archival materials in digital format is a key challenge for researchers, as it preserves unique documents and provides access to them for future generations. However,

there are constant problems with the technological obsolescence of storage platforms, which requires constant updating of archive systems and storage strategies.

The purpose of this study was to analyse modern approaches to the use of archives in the field of media and information technology studies, and to assess the effectiveness of the latest methods, in particular, through the integration of digital archives, audio-visual materials, and other modern sources.

Materials and Methods

The study included a comparative analysis of digital platforms for accessing digitised scientific and cultural materials, in particular, such platforms as "Google Books" (n.d.), "Digital Public Library of America (DPLA)" (n.d.), "Internet Archive" (n.d.), "Europeana" (n.d.), "Archive.org" (n.d.), "HathiTrust" (n.d.), and "The British Library Digital Collections" (n.d.). Each of these platforms offers unique opportunities for accessing digitised resources, including books, academic papers, technical documents, and media materials. As part of this study, various digital platforms specialising in digitised cultural and scientific resources were used to collect and analyse materials. Firstly, 10 major platforms were selected, including "Google Books", "Digital Public Library of America (DPLA)", "Internet Archive", "Europeana", "HathiTrust", and the "British Library Digital Collections". The selection criteria included the availability of academic resources, historical documents, media materials, and tools for deep data retrieval and analysis.

"Google Books" has become an important tool for gaining access to the full texts of books, which helped to conduct a comparative analysis between different researchers and stages of information technology development in the media. The platform provided powerful search functions, and tools for automating citation, which makes it easier to process a large number of materials. To obtain additional materials about digitised publications, the "DPLA" platform was used, which provided access to various scientific publications, archival resources, and media materials in the United States. "Internet Archive" has become an important resource for working with multimedia materials and digitised books, especially for analysing the use of technical tools in the media sphere, because the platform has a large number of rare documents related to the development of technologies. For the study of cultural and scientific aspects, "Europeana" was used, which collected collections of materials from European archives, which allowed assessing the impact of information technologies on European cultural heritage.

The selection of platforms for analysis was determined by the number of digitised materials available, the availability of interactive functions, and tools for deep search. In addition, platforms that specialise in digitising rare or archival documents were chosen because of their importance for analysing changes in the media space. From the initial set of materials, 30 sources were selected, including various types of information, from books to research papers and media materials. After further screening, mainly due to relevance to the research topic, 18 sources remained that were included in the list of references. This helped to obtain a balanced sample of sources for deep analysis of information technologies and media in the context of digital platforms. Thus, the use of the above-mentioned platforms allowed creating a database for analysis, which became the basis for conducting a comparative study of innovative approaches in digital archival affairs.

The review method helped to evaluate the tools that platforms used to process and provide access to digitised materials, in particular, semantic search, data visualisation algorithms, and text recognition technologies, which greatly facilitated the process of searching and interacting with digital resources. Special attention was paid to comparing the "Europeana" platform with its Ukrainian counterparts, such as "Diia.Digital education" (n.d.), "Archive of Ukrainian Radio" (n.d.), "Ukrainian Institute of National Memory" (n.d.), and "Electronic Archive of the Liberation Movement" (n.d.). The comparison was based on several criteria: access to digitised materials, availability of search tools, data visualisation, and interactive platform capabilities. Based on the results obtained, recommendations were formulated for improving Ukrainian platforms using the deduction method. This method helped to draw general conclusions, starting with specific observations and analysis of the results obtained at the stage of research of digital platforms. In particular, based on a comparative analysis of the functionality of international platforms, effective tools for searching, automating citation, and classifying data were identified. Based on these observations, recommendations were formulated, focusing on the needs of Ukrainian users and the specifics of the national context.

Results

Main challenges in archival information technologies and media

Research in the field of information technology (IT) and media requires the integration of knowledge from numerous scientific disciplines, which determines their interdisciplinary nature. In particular, a comprehensive analysis requires a combination of knowledge from engineering, computer science, sociology, cultural studies, psychology, linguistics, and media theory. The complexity of the topic is conditioned by the rapid evolution of technologies, which forces researchers to apply new methods of analysis and approaches to understanding the content and impact of media. Rapid changes in technologies make it difficult to track and record the stages of their development. The history of IT requires not only a technical, but also a deep cultural and social context, as new technologies often lead to social changes that can be difficult to reflect in traditional archival materials.

In this regard, there is a need to apply flexible approaches to the study of technological changes, including the integration of various data and analysis at various levels – from engineering to socio-cultural transformations. The issues of preserving archival materials, accessing them and ensuring ethical standards in working with confidential information are important, so the digitalisation of archives, and new methods of data analysis, open up new horizons for research in these areas, but are accompanied by numerous challenges that require constant adaptation of methodological approaches.

Digitalisation of archival materials is an important aspect in the study of the history of information technology and media. Digital archives allow storing and presenting materials covering various stages of it and media development in an accessible way. However, it is important to note that the process of digitising documents and creating digital archives is accompanied by a number of difficulties, such as the need to ensure compatibility of formats, protection against data loss due to outdated media, and support for long-term access. One of the biggest challenges in preserving digital archives has been the rapid degradation of storage media and the obsolescence of storage technologies. From the 1960s to the 2020s, there were constant changes in information storage formats. From the use of magnetic tapes in the 1960s and 1970s for storing large amounts of data, through the popularisation of floppy disks in the 1980s and 1990s, CD-ROMs in the 1990s and DVDs in the 2000s, to the introduction of modern storage technologies such as USB drives, cloud storage, and solid-state drives (SSDs) in the 2010s and 2020s.

These changes reflect significant progress in the development of computing technologies and changing approaches to storing and accessing information. However, old storage media that stored important historical or technical documents often turned out to be physically damaged or technically outdated. For example, magnetic tapes, floppy disks, or CD-ROMs cannot be used seamlessly on modern computers without additional programmes or hardware devices. This led to serious problems with access to data that contained unique information about the development of information technologies and media. In addition to the physical ageing of media, another big problem was the lack of uniform standards for storing and migrating data between different formats and platforms. As a result, when trying to transfer old data to new media or restore access to it, compatibility difficulties may arise. This could lead to the loss of some important information or complicate its analysis in the future. To solve this problem, it was necessary to develop clear standards for data storage, in particular, the use of open formats that ensure the safety of information for a long time.

Archival documents related to the history of information technology were often extremely difficult to analyse. They contained numerous technical terms, mathematical formulas, algorithms, circuit design, and software source code. Without specialised knowledge, the analysis of such materials was much more difficult. Interdisciplinary collaboration between historians who investigated cultural heritage and technical experts with experience in programming, electronics, or computing was important. This collaboration allowed for a deeper understanding of the specifics and significance of archival materials, as technical aspects could influence the understanding of cultural, social, or historical contexts. The involvement of qualified specialists significantly increased the time and resources spent, since it was necessary not only to study the documents themselves, but also to reconstruct or restore old software solutions that might not be suitable for modern use. In this regard, the investigation of such materials often requires the use of specialised methods, such as machine learning or natural language processing (NLP), to analyse large amounts of data containing technical information.

Media content analysis is an important aspect of media development research. Technologies such as artificial intelligence, automated content generation, and big data are changing the traditional way media products are created and consumed. This not only transforms the media landscape, but also changes the audience's interaction with content. In particular, more and more attention is being paid to personalised media content, data visualisation, and interactive media platforms that allow users to actively interact with content and create new forms of expression. Research on the impact of such technologies requires new approaches to content analysis, including not only conventional methods such as content analysis, but also the use of machine learning algorithms to study media data arrays, in particular texts, images, and videos, often faces numerous ethical and legal challenges associated with accessing documents that contain sensitive or sensitive information. This may apply to users' personal data, communications, corporate events, or even archives containing military or government information. Key ethical issues arise when dealing with private correspondence, databases, or information containing intellectual property, especially in the context of emerging technologies such as artificial intelligence, big data, or automated decision-making systems.

Such materials could contain important information for research, but there was also a high risk of violating the privacy and privacy rights of the individuals mentioned in these documents. Ethical dilemmas concerned the balance between the right of access to historically important documents and the need to protect private data. Therefore, many archives containing sensitive information used access restrictions or special protocols to work with such documents. This may include restricting the publication of parts of documents or requiring special permissions to access certain types of information. This created significant difficulties for researchers, as it could restrict access to important sources and

require legal advice. From this standpoint, it was important to develop ethical protocols and standards for working with sensitive data that met modern privacy and security requirements. This included the use of anonymisation of data, ensuring reliable protection of information, and strict regulation of access rights to archival materials.

These factors require the introduction of specialised information management systems that allow efficient organisation and cataloguing of materials, and providing the necessary mechanisms for long-term data storage. It is also important to consider that many archival materials relate to intellectual property, so it is necessary to ensure legal transparency of access to such resources. The issue of creating effective strategies for digitisation and long-term storage of digital archives was also important. The process of digitising large archival collections took a significant amount of time and resources, but it was crucial for the preservation of historical documents. If this process was not properly organised, it could lead to the loss of a significant part of the cultural heritage that was of great importance for understanding the development of technology and society. With this in mind, one of the main tasks was to create platforms and databases that allowed organising and presenting complex technical materials in an accessible way. However, such systems required the integration of knowledge not only on the history of technology, but also on programming and computer science to ensure the possibility of correct interpretation and adaptation of archival materials to modern needs.

Contemporary historical studies on information technology and media were increasingly based on archival materials that were stored in both physical and digital formats. Archives such as the "Computer History Museum" (USA) (n.d.), "Archives of IT" (UK) (n.d.) and "Deutsches Technikmuseum" (Germany) (n.d.) actively digitised their collections, which allowed researchers to work with materials remotely. The digitisation process not only increased access to sources, but also ensured their long-term preservation by protecting them from physical deterioration. Based on the use of modern scanning technologies, metadata and specialised software for managing digital collections, archives created multifunctional databases. They provided keyword search, filtering by timeline or topic, and viewing high-quality digital copies of original documents.

A special feature of working with digital archives was the ability to integrate an interdisciplinary approach, which allowed historians not only to analyse specific materials, but also to correlate them with global processes of technology and media development. For example, data on technical innovations from digital archives can be combined with the economic, social, and cultural contexts of the era in which they were created. In addition, the digital format has contributed to the development of new analysis methods, such as using machine learning algorithms to classify documents or detect hidden patterns in large data sets. This approach to working with archives greatly facilitated access to unique materials that previously remained poorly studied due to geographical remoteness or limited access to physical funds. For example, documents about early computer systems or the first media platforms stored in digitised form became the basis for numerous studies that focused on investigating the evolution of technology. Historical research in information technology has received a new impetus for development. They not only documented the past, but also formed new concepts that helped to better understand the impact of technology on the present. Thus, the digitalisation of archival materials has become a key factor that has identified new opportunities for studying the history of information technology and media, stimulating both the development of science and international cooperation between institutions.

The role of global digitisation platforms in accessing scientific and technical resource

Digitalisation processes significantly transformed access to a large amount of data, in particular, to technical documentation, research papers, patents, drawings, and correspondence between developers of the first computers and media systems. Such resources provided researchers with the opportunity to systematically analyse materials that previously remained inaccessible due to physical or geographical restrictions. Global platforms such as "Google Books", "Digital Public Library of America (DPLA)", "Internet Archive", "Europeana", "HathiTrust", "Archive.org", "The British Library Digital Collections" etc., played a significant role in this process.

"Google Books" is one of the largest and most well-known book collection digitisation projects implemented by Google as part of an ambitious plan to create access to complete texts of books, scientific publications, technical manuals, and other documents. The idea of this project is to provide access to millions of digitised publications from the libraries of the world's leading educational and scientific institutions, as well as private collections. With this project, users get access to texts that can usually only be accessed through physical libraries or through expensive subscriptions. "Google Books" not only digitises books, but also automatically creates metadata and bibliographic records, which allows performing an accurate search for all the contents of the book. The "Google Books" search engine is capable of performing deep text analysis, highlighting keywords, and offering various filters for users. This makes the platform extremely valuable for researchers who study literature in various disciplines. A special feature of "Google Books" is the ability to automate citation. The platform allows users to quickly find citations and integrate them into scientific papers using tools that automatically generate bibliographic entries in various styles (APA, MLA, Chicago, etc.). This is especially useful for researchers who analyse literature within the

framework of large studies, as it greatly simplifies the documentation process and reduces the likelihood of errors in the design of citations. "Google Books" also supports the ability to compare texts, which allows researchers to check different editions of the same book or compare versions of the same paper. This is an important tool for investigating the evolution of scientific ideas, because it allows identifying changes in the editorial offices of texts and their impact on the development of relevant scientific theories. The "Google Books" project covers a wide range of sources, including rare and ancient publications that are valuable for studying the history of scientific and technical disciplines. It also provides access to a large number of publications that were previously available only in a limited number of libraries or archives, which makes the platform indispensable for researchers involved in the history of technology.

The "Digital Public Library of America (DPLA)" is an important online resource that brings together digitised collections from libraries, museums, and archives in the United States. This project has become one of the largest initiatives to create unified access to digitised materials covering various aspects of history, culture, and technology. "DPLA" provides free access to materials from archives, libraries, and museums across the United States, covering millions of documents in various forms, from texts and manuscripts to videos and images. The main purpose of "DPLA" is to provide access to rare and important documents that are important for the history of not only the United States, but also for world history. The platform's collections contain many technical descriptions, drawings, correspondence, and other materials that allow researchers to study the development of technologies, especially in areas such as computer science, electronics, and mechanics. The uniqueness of these materials lies in the fact that they are provided in digitised form, which greatly simplifies access to such important historical documents. "DPLA" also provides access to scientific research and articles related to technology development, engineering, and personal correspondence of early innovators. This is extremely important for studying the stages of development of key technological innovations. All of these resources are located in a single catalogue, allowing users to easily search by topic, timeline, or geographic region, making the platform extremely convenient for use in research. A special feature of "DPLA" is also its open access, which allows users to use most resources for free. This makes the platform accessible to a wide range of researchers, students, teachers, and other interested parties involved in studying the history of scientific achievements and technological progress.

"Internet Archive" is one of the largest and most important platforms for storing and providing access to digital materials. This platform digitises and stores a huge amount of content, which includes books, videos, audio files, software, and web page preservation. The "Internet Archive" provides access to more than 40 million pieces of content, making it an important platform for research in the history of information technology, science, media, and cultural heritage. A special feature of this platform is its ability to store a wide range of media formats, which is important for research in the field of digital technologies and their impact on modern culture. Users can access rare technical documents, videos, audio files, and software that has become part of the scientific and technical heritage. For example, large software archives that are stored on the "Internet Archive" can be used to study the evolution of programming and the development of operating systems. Machine learning tools used on the platform allow effectively classifying and recognising texts, which greatly facilitates the process of searching and analysing large amounts of information. This is especially important for research related to the analysis of technological innovations, as it allows finding rare documents or publications that were previously available only in a limited format. The "Internet Archive" provides free access to most of its materials, making it an essential research tool available to both professional scientists and amateurs. Users can upload, save, and use documents for their own research, thereby making a great contribution to preserving the digital heritage.

"Europeana" is a European digital platform that provides access to cultural and scientific materials digitised from various European archives, museums, and libraries. "Europeana" brings together collections from more than 3,000 European institutions, which gives the impression of a single access to a huge amount of European cultural heritage. This includes books, manuscripts, maps, photographs, artefacts, and other valuable materials reflecting various aspects of European history, culture, and science. The "Europeana" platform is particularly useful for researchers who study European history, art, science, and technology. Due to search tools and interactive features, users can quickly find the necessary documents and resources, which greatly facilitates working with large amounts of information. A special feature of this platform is its versatility: it allows searching by various criteria, such as the type of material, time, and geographical affiliation, and topics, which makes "Europeana" a powerful tool for research and training. The only thing that makes "Europeana" even more unique is its focus on integrating not only text materials, but also audio-visual resources, which allows exploring historical events and cultural phenomena through various media formats. This makes the platform an important tool for studying not only the history of scientific discoveries, but also the development of cultural and technical traditions in Europe.

"Archive.org" is another important project aimed at digitising and preserving media content, which includes movies, audio, web pages, software, and other digital documents. It is not only a library in the traditional sense, but also a huge digital data archive that provides

access to millions of documents, videos, and software. "Archive.org" – has become one of the largest platforms for preserving cultural and scientific heritage, which covers not only traditional documents, but also new media formats that have emerged with the development of digital technologies. A special feature of this platform is its interface, which allows users not only to search and view materials, but also to actively download and use the output files. "Archive.org" provides access to large archives of digital libraries, which allows researchers to analyse the evolution of technologies, in particular, the history of the development of the Internet, software, and computer science. This platform is also an invaluable resource for exploring various aspects of scientific and technical history. "Archive.org" contains archives with digitised copies of scientific publications, technical reports, and software tools that allow tracking the history of the development of various technologies. It is also worth noting the importance of archiving web pages, which allow storing the content and structure of internet sites over time, which is important for analysing changes in the context of technological progress and the development of digital information.

"HathiTrust" is one of the largest digital archives focused on preserving academic and scientific resources. This project brings together the resources of university libraries and provides access to millions of books, scientific papers, journals, and other materials digitised as part of the scientific heritage preservation initiative. "HathiTrust" is an important source for researchers, as it provides access to a variety of academic publications in various disciplines covering most of the scientific activities of past centuries. Based on powerful tools for finding and processing big data, the platform provides convenient access to scientific materials, which allows researchers to quickly find the necessary publications and use them for their work. "HathiTrust" also has a well-developed cataloguing system that provides efficient search and allows for detailed analysis of scientific papers, in particular, in the field of technology history. The platform is a valuable resource for those who study scientific achievements in various fields, as it provides access to texts that are often unavailable through traditional libraries or archives. An important aspect is that "HathiTrust" also provides access to rare and outdated publications, which is extremely important for studying the evolution of scientific ideas.

Digitised collections "The British Library Digital Collections" is one of the most important resources for research in various fields. The "British Library Digital Collections" is one of the largest and most famous libraries in the world, with many rare documents, manuscripts, maps, and other historical materials in its collection. The "British Library Digital Collections" allows researchers from all over the world to access these rare and valuable resources in digitised form. This platform is especially important for those who study the history of science and technology, as it contains many technical documents, scientific papers, and manuscripts that can shed light on the stages of development of various technologies. Access to rare collections allows not only to study historical aspects of the development of science, but also to analyse the evolution of theoretical approaches and methods in various fields. In addition, "The British Library Digital Collections" provides very detailed cataloguing, helping to perform a deep search on specific subjects, historical stages or topics. This makes the platform an essential tool for researchers involved in studying documents related to the history of science, technology, culture, and society. Table 1 provides detailed information about the main platforms that offer access to digitised sources, such as "Google Books", "Internet Archive", "HathiTrust" etc. It contains a description of the characteristics, content types, tools and technologies, and the specialisations of each of the platforms, which allows for a comprehensive analysis of their capabilities.

Table 1. Comparative analysis of digital platforms for accessing digitised scientific and cultural materials

Platform	Main features	Content type	Tools and technologies	Specialisation and unique opportunities
Google Books	Large-scale project to digitise the book collections of the world's leading libraries.	Books, scientific publications, technical manuals	Text search, automated citation, bibliography creation, comparative analysis of texts	Access to full texts, search tools for effective work with a large number of sources.
Digital Public Libraryof America (DPLA)	Unified access to digitised collections of libraries, museums, and archives in the United States.	Technical descriptions, drawings, correspondence, research	Cataloguing, searching, and accessing rare materials	Digitised materials on the history of computer science, personal correspondence, and documents of early researchers.
Internet Archive	Digitisation of books, magazines, videos, programmes, and other media.	Books, audio, video, software	Machine learning for data classification, text recognition, digital archives	Wide range of materials on the history of digital technologies and cultural aspects.
Europeana	European platform for access to digitised cultural and scientific materials from various European archives.	Artefacts, documents, maps, photos	Search tools, interactive features	Digitised materials from various European archives, history of technology, culture, and science.

Continued Table 1.

Platform	Main features	Content type	Tools and technologies	Specialisation and unique opportunities
Archive.org	Digitisation of various media, including films, sounds, and web pages.	Technical documents, media content	Technologies for processing and storing large amounts of data	Access to media, software, and archives on scientific and technical history.
HathiTrust	Digitisation of academic resources, including university libraries.	Scientific papers, books, magazines	Text search, big data processing	Access to scientific and technical publications, tools for research in the field of technology history.
The British Library Digital Collections	Digitised collections from the British Library archives, including rare materials.	Rare documents, manuscripts, maps	Search interface, detailed research of historical materials	Digitisation of rare and important historical and technical documents, access to special collections

Source: compiled by the authors

The scientific significance of such resources was that they helped to form an interdisciplinary approach to the study of the history of information technology. In particular, the analysis of technical descriptions in combination with the study of correspondence and public speeches of developers contributed to the disclosure of their personal motivations, cooperative work models, and strategies for solving technical and scientific problems. For example, researchers could study how theoretical knowledge was integrated with practical engineering solutions in the development of the first computers.

An important aspect was also that digital archives contributed to the development of new research methods. The use of machine learning tools and word processing algorithms helped to classify large amounts of data, identify hidden trends and correlations between different sources. As a result, this provided new models for the reconstruction of historical processes and a deeper understanding of the impact of technology on society. Thus, the digitalisation of archives and the creation of interactive platforms have become an important stage in the evolution of historical information technology research, laying the foundation for new approaches to studying the past and forming knowledge about the technological heritage of humanity.

Analysis of the "Europeana" platform in the context of Ukrainian analogues and proposals for improving archival affairs in the context of information technology and media development

Resources like "Europeana" have become innovative platforms that not only provide access to large amounts of archival materials, but also provide interactive data exploration due to modern technological solutions. They served as central hubs for bringing together Europe's cultural heritage, including digitised documents, images, audio-visual materials, and 3D models. One of the key advantages of "Europeana" was the integration of advanced search functions. The platform's tools allowed filtering by various criteria, such as subject, period, geographical region, or material type, making navigation much easier for researchers. In addition, semantic search algorithms were used to identify semantic relationships between documents, contributing to a deeper understanding of the context. Built-in visualisation features also significantly expanded the analysis capabilities. For example, interactive maps, timelines, and graphs allowed researchers to track historical processes, technological changes, or the evolution of cultural phenomena in space and time. These tools helped to create a visual representation of large amounts of data, which was important for interdisciplinary research.

Another important aspect of "Europeana" was the possibility of collaboration between researchers. The platform provided tools for creating thematic collections, sharing discussions, and commenting on archival materials in real time. This approach stimulated the collective development of knowledge, the exchange of ideas and the integration of new scientific approaches. Thus, "Europeana" not only ensured the preservation and access of cultural heritage, but also offered innovative tools for its interactive study. This opened up new perspectives for researchers in the humanities and social sciences, contributing to the globalisation of scientific approaches and improving the efficiency of working with archives. "Europeana" has become an example of how digital technologies can transform approaches to the preservation, research, and promotion of cultural heritage. By combining convenient access to data with modern data analysis tools, the platform has changed the way people think about the possibilities of digital archives. In addition, "Europeana" actively supports educational initiatives, providing educational institutions and institutions with open access to digitised resources. This allows the platform's materials to be integrated into curricula, contributing to the development of digital literacy and cultural heritage interest among students. It is especially important that access to such resources is free, which makes the platform accessible to a wide audience, regardless of geographical location or financial capabilities. "Europeana" has become a tool for preserving lesser-known or local elements of European culture that might have gone unnoticed or lost. For example, the platform allows storing and exploring rare manuscripts,

folklore records, local traditions, and even architectural monuments. The openness of "Europeana" and innovation make it not only a convenient tool for researchers, but also a powerful tool for preserving cultural heritage for future generations. This demonstrates how effectively technology can serve as a bridge between the past, present, and future.

Ukrainian digital platforms specialising in preserving and popularising national memory and digital education have significant potential, but their development requires further improvement. A detailed analysis of each platform allows identifying their capabilities and identifying key shortcomings that hinder effective use. Platform "Diia.Digital education" is a modern tool for teaching digital skills to the population of Ukraine. It offers more than 100 free courses in the format of educational series covering topics from basic gadget use to cybersecurity and entrepreneurship. One of the key advantages is an interactive approach to learning: users can watch video lectures, take tests, and receive certificates confirming their knowledge. The platform provides accessibility for people with disabilities through adapted interfaces and subtitles. However, the main disadvantages are the lack of courses for highly specialised professions, for example, for archive workers or historians, and insufficient integration with other educational resources. Expanding the content and developing a section aimed at children and teenagers will make the platform more versatile. Integration with archived databases and the creation of modules for working with historical sources will significantly expand the user audience.

The "Archive of Ukrainian Radio" is a unique resource that focuses on preserving audio materials that cover a wide range of topics – from historical programmes to concert recordings. This platform provides access to phonograms, which are often the only evidence of past events. Its advantages are a clear archive structure, the ability to search by genre, date, and topic. However, the archive has limitations, in particular, the lack of transcription functions for audio files, which reduces its availability for people with hearing impairments or those who are looking for text versions of materials. Mobile application development, integration with other media archives, and the introduction of automated transcription tools will contribute to better material availability. The "Ukrainian Institute of National Memory" is a platform that focuses on spreading historical knowledge through documents, research, and educational initiatives. One of its strengths is the organisation of virtual exhibitions, which allows users to dive deeper into topics such as the Holodomor or the struggle of Ukrainians for independence. The platform also offers analytical materials that can be useful for researchers and teachers. The weak point of the platform is the limited search functionality, which makes it difficult to work with large amounts of data, and weak popularisation among young people. To solve these problems, it is necessary to improve the interface, create a mobile version of the platform, and develop interactive educational materials, such as videos or game simulations of historical events.

"Electronic archive of the liberation movement" (e-Archive) is one of the largest projects dedicated to the preservation of historical documents about the struggle for independence of Ukraine. Its collection includes photographs, diaries, postcards, maps, and other materials that are organised by subject, chronology, and geography. The archive is actively updated due to cooperation with researchers and scientific institutions. The advantages include detailed cataloguing and availability of documents for download. However, the platform is not sufficiently developed in the multimedia aspect: there are not enough audio and video materials that could interest a wider audience. The introduction of multimedia content, integration with educational platforms, and expanding access to archives through mobile applications will be important steps to improve its effectiveness.

In general, to improve Ukrainian platforms, it is necessary to ensure greater integration of archival and educational resources, creating a single digital space for preserving national memory. Key recommendations include developing mobile applications, improving search engines using semantic analysis, and expanding multimedia content. It will be important to attract young people through social networks, interactive programmes, and educational campaigns. The integration of artificial intelligence to automate transcription and data analysis, and close collaboration between platforms, will help to create a modern ecosystem that meets the needs of users and preserves cultural heritage for future generations. Table 2 provides a comparative analysis of digital platforms that provide access to digitised scientific and cultural materials, indicating their main functions, advantages, disadvantages, and recommendations for improvement.

Table 2. Comparison of digital platforms for accessing digitised materials

Platform	Main functions	Advantages	Disadvantages	Recommendations for improvement
Europeana	Access to cultural heritage archives, semantic search, data visualisation	Interactive search, visualisation, research collaboration, educational initiatives	Insufficient attention to local initiatives, limited multimedia content	Multimedia expansion, support for local resources, integration with school programmes
Diia.Digital education	Online courses, certification, adapted interfaces for people with disabilities	Interactive approach, accessibility, wide range of topics	Lack of highly specialised courses, poor integration with other platforms	Content extensions, modules for working with historical sources, children's section

Continued Table 2.

Platform	Main functions	Advantages	Disadvantages	Recommendations for improvement
Archive of Ukrainian Radio	Save audio materials, search by genre and date	Uniqueness of materials, structured archive	Lack of transcription, poor accessibility for people with hearing impairments	Automated transcription, mobile application, integration with other media archives
Ukrainian Institute of National Memory	Virtual exhibitions, analytical materials, historical research	Convenience for researchers, thematic collections	Insufficient popularisation among young people, limited search functionality	Interactive interface, mobile version, game simulations of historical events
Electronic archive of the liberation movement	Archive of documents, photos, postcards, systematisation by topic	Detailed cataloguing, availability for download	Limited multimedia content, insufficient integration with other platforms	Multimedia content, mobile applications, training modules

Source: compiled by the authors

Recommendations for improving archival affairs using innovative platforms in the context of information technology and media development have a direct impact on the effectiveness of preserving, analysing, and popularising cultural heritage in the digital age. The integration of advanced technologies, such as semantic analysis and automatic transcription of text and audio-visual materials, is directly related to modern methods of data processing and storage in the field of information technology. The use of such tools provides not only quick access to the necessary information, but also the possibility of deep data analysis based on media and digital technologies. Expanding multimedia content, including interactive elements, 3D models, and videos, is also an integral part of modern media tools that significantly increase the level of user interaction with archived resources. Data visualisation using tools that are actively used in the media sphere makes archives accessible and understandable to a wide audience, including young people who actively use multimedia platforms in their education and leisure activities.

Mobile solutions in the context of digital archives allow users to access archival materials on any device at a convenient time. They respond to the current demand from media platforms and technologies that provide constant access to information, including through mobile applications. It also increases the availability and usability of digital archives, which is an important condition for the effective use of these resources in the modern information environment. The integration of archives with educational platforms is an important aspect of the development of information technologies in the educational process, contributing to the development of digital literacy. Creation of thematic collections, interactive lessons, and simulations of historical events will allow combining archival resources with modern media technologies that open up new opportunities for learning and popularising cultural heritage among young people.

The popularisation of archives through social networks, virtual tours and webinars reflects the active use of media channels to attract a new audience. Cross-platform cooperation will create unified digital spaces for data exchange and resource integration, which is an important element for the development of modern archival systems, where information technologies and media occupy a central place. The development of accessibility through the adaptation of interfaces for people with disabilities, in particular, the use of text and subtitle reading technologies, promotes inclusion in the digital environment and meets the requirements of modern media platforms that strive to ensure equal access to information for all categories of users. Thus, digital platforms, in particular "Europeana", embody an innovative approach to preserving cultural heritage, providing convenient access to digitised materials and modern tools for their analysis. Ukrainian analogues, such as "Diia.Digital education" and "Archive of Ukrainian Radio" play an important role in the development of national archives through the introduction of the latest media technologies and improving access to cultural resources. The introduction of innovations in the field of archival affairs will not only preserve historical materials, but also actively involve new generations in the study of cultural heritage, creating interactive opportunities for learning and media consumption in the digital age.

Discussion

During the study, attention was focused on analysing the main trends in the development of digital archives, in particular, considering the latest technologies and their impact on the preservation, availability and distribution of archival materials. For comparison, several important scientific papers related to this topic were considered, in particular, research on the digitisation of archival materials, the use of social media in archival practice, and strategies for preserving cultural heritage in digital format. One of the first papers analysed was the study by G. Boryak (2002). In her work, the researcher investigated the problems associated with the organisation of electronic archives, focusing on the need to standardise and ensure high quality of digitised data for publication on the Internet. G. Boryak noted the importance of adapting archives to digital formats, which is an important element for ensuring their availability. The research focused more

on the theoretical aspect of organising archival publications. G. Boryak's study raised the issues of presenting archives on the Internet, but did not consider in more detail the latest technologies that are actively used to provide access to these materials, which makes our research an addition to her study.

The study by L. Bountouri & G. Giannakopoulos (2014) proved important for our analysis by investigating the impact of social media on archival affairs. The researchers noted the importance of using social media to promote archival resources and attract a wider range of users to interact with archives. They emphasised the possibility of social networks to be not only a channel for distributing archival materials, but also a platform for storing information. However, in contrast to their study, which focused more on the role of social media as a channel for access to archival materials, the current research focused on a more complex issue: how technologies, in particular digitisation and Internet platforms, change the very practice of archives and the availability of data. Thus, the analysis helped to better understand the context of social media use, but at the same time focused on more general aspects of archive digitalisation compared to the approaches of the authors of this study. Research by K. Müller (2021) provided an in-depth look at the problem of digitising cultural heritage and creating online access to archives. K. Müller emphasised the importance of ensuring quality and accuracy in digitising archival materials and highlighted the need to preserve cultural heritage for future generations. This study was the basis for the analysis of the preservation of archives, but unlike K. Müller's paper, the study focused not only on the issue of preserving cultural heritage, but also on technological tools that allow effective access to these materials. K. Müller's research focused more on creating digital collections for cultural heritage than on exploring the role of archive platforms for practical user access.

Another study that was analysed was the paper by B. Cannelli & M. Musso (2022). The researchers examined the role of social media in the context of personal digital archives, focusing on how users store personal data through platforms such as Facebook, Instagram, etc. They noted that social media can be an important tool for preserving personal memories and creating personal archives, which is a new aspect compared to traditional archives. The study provided important insights into how the concept of archives is changing in today's digital environment. However, the current study focused on the broader context of archival affairs, which included not only individual archives, but also professional archives of cultural heritage and public archives, digital technologies. The study by B. Cannelli & M. Musso (2022) focused more on the individual level of use of social media as personal archives, while the current research considered professional archives that have their own requirements for accuracy, preservation of authenticity of materials, and the possibility of large-scale access to them. The investigation of social media in the context of personal archives is an important step towards understanding changes in the concept of archives in the digital age, but it requires a more detailed consideration of the specific requirements for cultural heritage archives, which are of greater value to history, culture, and science.

The conducted research and the paper by B. Şentürk (2014) had both common and distinctive aspects that could be compared from several standpoints. Both papers highlighted the importance of archival materials for studying history and technological change. The current study focused on the use of archives to investigate the evolution of information technologies and media, in particular, the use of the latest data processing methods for analysing archival materials. The study by B. Şentürk, in turn, looked at more general aspects of online access to archival materials, in particular, the advantages and challenges associated with the digitalisation of archives. The study also focused on integrating the latest technologies, machine learning, thematic modelling, and data visualisation for deep analysis of large amounts of archived data. This helped to conduct a detailed analysis and identify hidden connections between different sources. The paper by B. Şentürk, in turn, focused on the digitalisation of archives and the opportunities that open up due to online access, but without such a deep emphasis on technological methods. Both studies also raised issues and challenges related to the processing and access of archival materials. The current study focused on the difficulties that arise when processing big data and the problems of translating rare languages, which significantly complicated working with archival materials. However, the study by B. Şentürk discussed issues of security of archival materials on the Internet, issues of confidentiality and preservation of archival consciousness. Another difference is that the study had a unique focus on using machine translation techniques to work with rare languages. This helped to expand access to archival materials that were previously unavailable for analysis due to language barriers. This aspect was not considered by B. Şentürk. In general, both studies shared common goals regarding the importance of archives and the use of the latest technologies for their research, but differed in focus and methodology. This study focused on the investigation of the history of information technology and media using sophisticated big data analysis techniques and language processing technologies, while B. Şentürk's research focused on the general challenges and prospects of online access for archives and archivists.

The conducted research and the paper by J. Bergis (2018) also had both common and distinctive aspects. Both papers highlighted the importance of archival materials for investigating social processes and technological change. This research focused on the use of archives to study the history of information technologies, and media, in particular, the use of the latest data processing

methods for analysing archival materials. In turn, J. Bergis emphasised the importance of archiving content created by social movements in real time, which has become increasingly important for studying modern social and political processes, in particular, in the context of using social networks. Both studies also recognised the importance of using the latest technologies in the archiving process, although their applications were different. Jules' study focused on the problems of archiving digital materials, in particular content in social networks, and on developing new methods for collecting and storing such data, which required new approaches and technologies.

In addition, both studies considered important ethical aspects of archiving. This paper focused on preserving archival consciousness, data protection, and issues related to big data processing and maintaining privacy. Jules' research focused on the ethical challenges that arise when archiving content from social movements, in particular, consent, confidentiality, and the use of materials for future research. This included consideration of the privacy rights of members of social movements and access to publicly available content in the context of archival work, which became important due to the rapid development of digital technologies and the possibility of storing large amounts of data.

The main difference between the research conducted and the paper by J. Bergis was the focus of the study. This research focused on the investigation of the history of information technology and media through archives and the use of technologies for processing and analysing big data, while J. Bergis focused on a specific aspect of archiving – the collection and storage of digital data created by social movements in real time. This included new methods of collecting and storing data that addressed specific issues, such as the speed of change in social media and the ethical issues associated with archiving such content. Jules' research also focused more on practical recommendations for archiving digital data and developing ethical standards for collecting content that emerged in the context of modern social movements, while the research focused more on technological aspects and the use of archival materials to study historical changes. Thus, both papers had a common goal – to emphasise the importance of archives and technologies for modern research, but they had different approaches and focuses. The current study focused on the use of archives to investigate the history of information technology and media, using sophisticated data analysis methods, while Jules focused on ethical issues related to archiving the content of social movements and offered recommendations for solving problems that arose in the process of archiving modern digital materials.

E. Goudarouli *et al.* (2018) focused on the technological, ethical, and organisational aspects of the transition to digital archives, in particular, on the example of the National Archives of Great Britain. The researchers explored issues related to the longevity, access to digital archives, and ethical issues such as data security and privacy. They noted the need to adapt archives to new conditions and technologies to ensure proper storage and access to archival information. The study was consistent with the current one, which also emphasised the importance of preserving archival materials in the face of technological changes, but this research focused more on specific technical tools and methods for organising digital archives. A common approach was the importance of adapting archives to digital realities, but the current study focused on practical solutions that can be used to implement this process.

K. Pepłowska (2020) investigated innovations in archival science, in particular, in the context of technological tools necessary for archivists. The researcher emphasised the importance of applying the latest IT developments for archival affairs and infrastructure changes necessary for storing archival materials. In comparison with the conducted research, which focused more on technological aspects, K. Pepłowska mainly focused on infrastructure issues, such as designing archival facilities and laboratories for archivists. Both studies interacted through a shared focus on technology and infrastructure, but the research conducted focused more on technical tools and methods, while K. Pepłowska focused more on the architectural aspects of archival activities. C. Gauld (2019) drew attention to current trends in archival science, in particular, to the challenges that archives face in the context of digital transformation. His research focused on global trends in the development of archives and the challenges that arise due to changing technological conditions. The study also addressed these aspects, but focused more on specific technical aspects, such as storing digital data and organising archives in digital format. Common topics were related to the need to adapt archives to new conditions, but C. Gauld focused more on general global trends, while this research focused on specific practical tools and technologies.

In the review by M. Procter (2019) considered archives and information as important tools of social and political structures in history. He emphasised that archives were of great importance for the development of administrative and legal systems of early modern societies. The research contrasted with the current study, which focused on digital archives and the challenges associated with their preservation in the face of technological change. The differences between these studies were the emphasis on the historical context and the role of archives in the social and political sphere by M. Procter, while the conducted research was more focused on the technological development of archival affairs in the modern world.

L. Coyner (2019) explored new areas in archival science, in particular, the challenges facing archivists through digital transformation. The researcher also noted the importance of integrating archival principles into new technologies to ensure effective preservation

of archives. In comparison with the conducted study, which focused on the technical aspects of archival tools, L. Coyner emphasised the importance of preserving the foundations of archival affairs in the new environment. The common feature is the integration of technologies into archival activities, but the current study is more focused on specific technical aspects of this integration. New trends in the standardisation of archival affairs and documentation management were investigated by S. Katuu (2023), who emphasised the need to develop a regulatory framework for archives in the digital age. He stressed the importance of creating legal standards governing the processes of digitisation and preservation of materials, ensuring their reliability and protection. The study also focused on standardising processes in digital archives, but focused more on technical aspects such as digitisation tools, data storage software, and organising archives through interactive interfaces. While S. Katuu mainly focused on the legal aspects of archive standardisation, the research paper focused on technical tools and techniques that ensure effective management of digital archives.

G. Colavizza *et al.* (2021) considered the use of artificial intelligence to automate archival processes, noting that AI can greatly facilitate the management of large amounts of archival information by automating the processes of storing and providing access to materials. This study is closely correlated with the conducted one, since both papers consider the use of the latest technologies to improve archival activities. However, the current study focused not only on the use of AI, but also on other innovative technologies, such as the integration of machine learning for automated analysis of archived data, and the use of specialised software to optimise access to digital archives. Thus, although the emphasis in research was slightly different, both approaches contribute to the development of archival affairs in the context of modern technological advances. Based on the analysis of these papers, it was possible to identify several important aspects that should be focused on to improve the process of digitalisation of archives. First, it is necessary to determine the optimal technical means and platforms for digitising materials that allow ensuring maximum accuracy and maintaining authenticity. Given the importance of cultural heritage for scientific research and national identity, the role of archives in preserving information of cultural and historical value is particularly important. Secondly, it is essential to develop effective strategies for integrating social media and other digital platforms into archival practice, because they can act not only as channels for storing and distributing information, but also as tools for feedback and popularisation of archival materials. Thirdly, digital archives should be designed in such a way as to ensure not only the availability, but also the long-term safety of archival materials. This implies the need to develop standards and protocols for digitising and storing documents in digital format.

Summing up, it can be noted that modern digital technologies, in particular, the digitisation of archival materials, the use of social media and Internet platforms, have significantly changed archival practice, contributing to the improvement of accessibility and preservation of cultural heritage. However, the growing role of digital archives requires further research and development of new tools that would ensure the security, accuracy, and authenticity of digital copies of archives. In turn, the use of social media, virtual platforms, and the latest technologies allows creating new opportunities for interactive access to archives, which is an important stage in the development of archival affairs in the digital age.

Conclusions

The process of digitising archives has become an important step in preserving cultural heritage and ensuring access to materials through digital platforms. The use of scanning technologies and software has created effective databases that have contributed to the development of interdisciplinary approaches to the study of the history of information technology and media. The integration of machine learning allowed for faster and more accurate analysis of archival materials, which made it easier to access rare documents and stimulated scientific research. The study focused on the development of digital platforms that play an important role in preserving the cultural heritage and history of information technology and media. The "Europeana" platform was one of the main examples of successful application of innovative technologies for digitisation of cultural materials. It provides users with numerous research opportunities through interactive data search and visualisation tools, for even greater access to archived materials. This allows for an in-depth study of history and culture through digital archives, which contributes to the transformation of cultural heritage into a digital format. However, it was noted that there was a need to improve interaction with local initiatives to increase access to regional and national archival materials.

The development of Ukrainian analogues of digital platforms, in particular "Diia.Digital education", "Archive of Ukrainian Radio" and "Ukrainian Institute of National Memory". These platforms have great potential, as they provide access to digitised materials that contribute to the preservation of national memory and the development of digital literacy. However, the development of these platforms still needs to be improved, in particular, in terms of multimedia content, accessibility to a wide audience and integration with international digital archives. As a result of the study, a comprehensive analysis of digital platforms for preserving cultural heritage and media history was carried out, in particular, using the example of 'Europeana" and its Ukrainian counterparts. The importance of further development of technologies for improving access to archival materials and

integrating local initiatives with global resources was noted, which will deepen interaction between national and international digital archives.

The practical results of the study include recommendations for improving existing digital platforms, in particular, creation of multimedia tools for attracting various user groups and integrating Ukrainian initiatives into international digital networks. An important aspect is the introduction of technologies that will promote inclusivity and accessibility for people with special needs. Recommendations were also proposed for the development of national initiatives, which will increase Ukraine's digital presence at the global level. One of the main limitations of the study was the lack of a sufficient statistical base to evaluate the effectiveness of existing platforms and limited access to some archived resources, which made it difficult to analyse certain aspects. In addition, to implement the proposed recommendations, it is necessary to consider socio-economic and political factors that may influence the development of digital initiatives. Overall, the study highlighted the importance of continuous development of digital technologies to preserve cultural heritage and national memory. It highlighted the need for further research and improvement of digital conservation practices, and the integration of national initiatives into global digital platforms.

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Conflict of Interest

None.

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Сучасні тенденції використання архівів для вивчення історії інформаційних технологій та медіа

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Анотація. Метою дослідження було вивчення функціональних можливостей цифрових платформ, технологій, що використовуються для оцифрування та доступу до архівних матеріалів, а також виявлення проблем і потенціалу для вдосконалення українських платформ у контексті розвитку архівної справи та інтеграції національних ініціатив до міжнародних цифрових архівів. В основу дослідження було покладено аналіз цифрових архівів та ресурсів інтерактивних платформ, таких як «Google Books», «Digital Public Library of America», «Internet Archive», «Europeana», «Archive.org», «HathiTrust», «The British Library Digital Collections». Основна увага була зосереджена на розвитку цифрових платформ, які відіграють важливу роль у збереженні культурної спадщини та історії інформаційних технологій і медіа. Платформа «Europeana» стала одним з головних прикладів успішного застосування інноваційних технологій для оцифрування культурних матеріалів. У дослідженні проаналізовано розвиток українських аналогів цифрових платформ, зокрема, «Дія.цифрова освіта», «Архів Українського радіо» та «Український інститут національної пам'яті». Ці платформи надають доступ до оцифрованих матеріалів, що сприяє збереженню національної пам'яті та розвитку цифрової грамотності. У результаті дослідження було проведено комплексний аналіз цифрових платформ для збереження культурної спадщини та медіаісторії, зокрема, на прикладі «Europeana» та її українських аналогів. Водночас було відзначено, що розвиток цих платформ все ще потребує вдосконалення, зокрема, в частині мультимедійного контенту, доступності для широкої аудиторії та інтеграції з міжнародними цифровими архівами. Наголошувалося на важливості подальшого розвитку технологій для покращення доступу до архівних матеріалів та інтеграції місцевих ініціатив з глобальними ресурсами, що сприятиме поглибленню взаємодії між національними та міжнародними цифровими архівами. Загалом дослідження підкреслило важливість постійного розвитку цифрових технологій для збереження культурної спадщини та національної пам'яті, а також наголосило на необхідності подальших досліджень та вдосконалення практик цифрового збереження, зокрема, інтеграції національних ініціатив у глобальні цифрові платформи

Ключові слова: управління документами; цифрова трансформація; еволюція ресурсів; зберігання даних; обробка даних; комунікаційні платформи