Library Science. Record Studies. Informology.

Library Science. Record Studies. Informology, 20(1), 41-46
Journal homepage: https://bdi.com.ua/en/journals/journal
Received 12.11.2023 Revised 14.01.2024 Accepted 04.03.2024

DOI: 10.63009/lsrsi/1.2024.41

Information and communication technologies in the research of reading rooms and libraries of Lemkivshchyna

Tetiana Skliarova*

Postgraduate Student
Vernadsky National Library of Ukraine
03039, 3 Holosiivsky Ave., Kyiv, Ukraine
https://orcid.org/0009-0007-3972-4603

Nataliia Kunanets

Professor at the Department of Information Systems and Networks
Lviv Polytechnic National University
79000, Stepan Bandera Str., Lviv, Ukraine
https://orcid.org/0000-0003-3007-2462

Ruslan Skliarov

PhD, Associate Professor at the Department of Machine Tools, Instruments, and Machines Design
Ternopil Ivan Puluj National Technical University
46001, 56 Ruska Str., Ternopil, Ukraine
https://orcid.org/0000-0001-6112-964X

Abstract. The purpose of the work is to research and study innovations, information and communication technologies, as an important aspect of contemporary historical and socio-communicative studies, as well as the development of library and archival affairs. The research methodology encompasses a set of general scientific methods such as systematization, generalization, forecasting, comparison, and structural-functional analysis, conducted to analyse the current development of technologies in the library field and the needs of information and communication support. The scientific novelty lies in the comprehensive and systematic analysis of information and communication technologies. The importance of information and communication technologies in library and archival affairs, the implementation of progressively new means of processing, preserving, and analysing sources is determined. Their integration into library affairs, prospects, development paths, and applications are explored, particularly in the study of reading rooms and libraries of Lemkivshchyna. Conclusions. The development of information and communication technologies is an important aspect of societal development, particularly science. The result of innovative development in archival and library affairs is information and communication technologies (including software and hardware), as well as the improvement of product and service quality formed by them, forms, methods, and management technologies. Thus, we can argue that the development of information and communication technologies is one of the key aspects of the development of library and archival affairs because transforming them into consolidated sources of information allows for a new approach to studying the history of Lemkivshchyna and re-evaluating the history of information institutions in the region. The study of library and archival affairs of Lemkivshchyna involves the development of an information system based on innovative ICT, which will enable the formation of a consolidated information array

Keywords: information and communication technologies; library; reading room; Lemkivshchyna; innovations; consolidated sources of information; databases; geoinformation system

Suggested Citation:
Skliarova, T., Kunanets, N., & Skliarov, R. (2024). Information and communication technologies in the research of reading rooms and libraries of Lemkivshchyna. *Library Science. Record Studies. Informology.* 20(1), 41-46. doi: 10.63009/lsrsi/1.2024.41.

*Corresponding author

Relevance of the research topic

The term "Information and Communication Technologies" (ICT) is defined as a diverse set of technological tools and resources used for communication and the creation, dissemination, storage, and management of information (Blurton, 1999). ICT encompasses a wide range of rapidly evolving technologies, including telecommunications technologies (telephony, cable, satellite, television and radio, computer conferences, video conferences), as well as digital technologies (computers, information networks) and software applications (Chisenga, 2006).

The development of ICT is often associated with innovative activities in library affairs, facilitated by the rapid development of Internet technologies and the updating of products and services provided by libraries (Chesbroug, 2010). This also includes the implementation of forms, methods, and management technologies aimed at enhancing the reputation of libraries, archives, and reading rooms, improving the quality of services provided, and creating a high-tech communication environment (Busel, 2012-2019). Analysis of research and publications. The issues of modern information technologies in the activities of libraries and archives are the subject of research by many Ukrainian and foreign scholars. Information and communication technologies have become a scientific achievement through the research of N. Matviychuk (2014), V. Likhovid (2016), T. Koval (2016), K. Lobuzina (2012), K. Lobuzina *et al.* (2016), N.E. Kunanets (2012, 2014), N.E. Kunanets *et al.* (2017), N.V. Veretennikova (2016), H.S. Bylovs & T.V. Onipko (2018). Issues of access to electronic documents have been addressed by T. Yaroshenko (2009) and K. Lobuzina (2012). The establishment of modern scientific communication systems, which is the basis of research, has been studied by I. Davidova (2009), H.V. Shemaieva (2016) and N.E. Kunanets (2014). The purpose of the study is to research and study innovations, information and communication technologies as an important aspect of contemporary historical and socio-communicative studies, and the development of library affairs. The innovative activities in library and archival affairs are driven by the demands of modern society, as they are closely linked with other areas of activity [2, 208]. The implementation of innovations is mostly influenced by economic and social opportunities, technical equipment, and technological processes in libraries, as well as the increasing demand for new types of services and expanding access to resources (Stephens, 2012). Experts in the library and archival field have different views on the implementation of innovations. Innovations contribute to the dissemination of advanced library and archival practices, enable the formation of new directions for the functioning of library and archival institutions, and improve their work by using ICT and transitioning to a digital information environment (Haliso, 2007).

According to T.V. Koval (2016), "innovations in libraries are examples of activities (services, products) that are characterised by absolute or relative novelty, go beyond existing traditions, and elevate professional activity to a qualitatively new level". From a philosophical aspect, "innovations in the library are those that contribute to the fulfilment of the library's social functions" (Sprinsian, 2019). Based on the analysis of existing library innovations, we have developed a generalised classification presented in Figure 1.

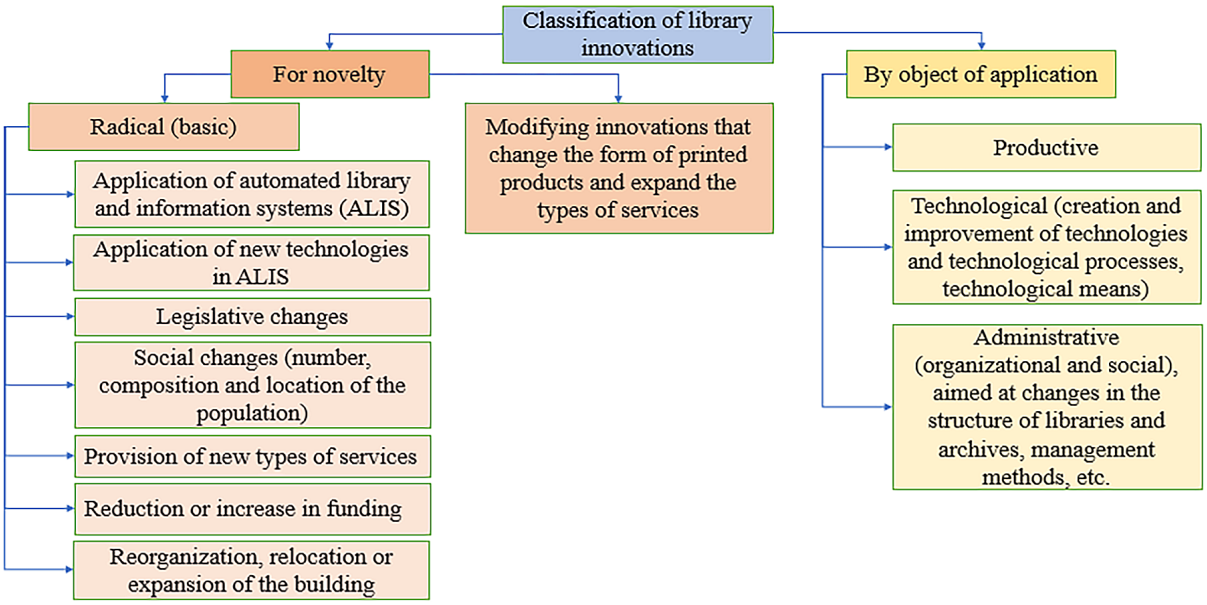

Figure 1. Classification of library innovations

Source: developed by the authors

Specialists in library and archival affairs are engaged in studying various aspects of innovative activities, such as identifying trends (Pavlenko, 2010), summarising foreign library experience [28, 5], and ensuring prompt service delivery. One of the most important indicators of effective library and archival work is promptness and accessibility (Dobrovolska & Cherednyk, 2022).

Innovations manifest in the application of new technological automation techniques, bringing qualitative changes to information search processes. Their implementation allows for the introduction of electronic document delivery technologies. Users can gain access to licensed, corporate, and paid electronic resources. Significant attention is given to the development of search web services, online information retrieval technologies, message organisation, and references. Special emphasis is placed on service innovations in providing individually tailored services (Garagulya, 2014).

The innovative development of libraries and archives is inevitable; it should ensure comfortable working conditions and contribute to the transition from inert and outdated working principles (Haliso, 2007).

A.S. Onyshchenko & L.A. Dubrovina (2011) emphasise the importance of transitioning library information activities to the electronic environment, particularly regarding the availability of electronic information resources, electronic versions of printed and manuscript documents, in the format of a library of a nationwide information resource of scientific orientation.

Researchers assign an important role to the development of library affairs in the field of socio-communicative technologies (Yaroshenko, 2009). Despite the relevance of classical libraries and archives, scholars and users are increasingly turning to electronic resources. The latest developments in library and archival affairs allow for the creation of accessible information retrieval, which involves the creation of databases and data exchange capabilities (Lobanovska, 2012). The use of modelling methods, systems analysis for the formation of a perfect information retrieval process system is important, allowing the creation of electronic information support for the scientific activities of various social institutions (Veretennikova, 2016).

ICT enable the exploration of library affairs development directions, involving the use of information services and databases, and the use of search engines allows this to be done more qualitatively (Kunanets, 2014).

The innovative development of archival and library affairs should contribute to improving the quality of products and services offered (Bilous & Onipko, 2018). Services provided by libraries and archival institutions are quite diverse, and the application of innovations sets the task of creating new approaches to user service (Klymenko, 2020).

The services provided by libraries should be of high quality, ensuring access to the necessary information for users, and may involve the use of computers, information networks, and specialised software applications. ICT allows for the automation of work processes and speeds up service delivery (Haliso, 2007). Thanks to ICT, libraries have extensive opportunities for organising information for further use and increasing their informational potential. This is facilitated by the use of specialised information management systems and library digitisation, which allows for shared access to information resources and document delivery services (Mphidi, 2014). ICT enables efficient cataloguing and classification of works, improving the quality of information services (Perez, 2020). Their use in academic settings accelerates message delivery, facilitates learning, and research (Lapo & Davletyarova, 2020).

The study of library and archival affairs in the Lemko region involves the development of an information system based on innovative ICT, which will allow for the formation of a consolidated information array. The majority of materials from libraries, reading rooms, and archives are located within the territory of Poland. The state programme for the development of libraries and archives in Poland includes digitising the collections of state archives and providing unrestricted access to them for users. The formation of a unified information database (UID) containing an electronic catalogue of documents, metric books, collections, represents an opportunity to create material and cultural heritage from the history of libraries in Lemkivshchyna. Given that these materials are legally considered part of Poland's cultural heritage, the most optimal and straightforward way to access these sources is through electronic digitised documents. For comprehensive research on the issue, it is necessary to gather data from various sources of information and systematically integrate them into various types of information resources, which collectively form an adequate information model of the subject area for analysis, processing, and in-depth study.

At the initial stage of the research, it is important to collect information about document repositories (libraries, archives, museums, reading rooms) and transform them into consolidated sources of information, repositories, and data spaces that contribute to the preservation and provision of access to quality information sources, facilitating their use by a wide range of users, researchers, and students.

The Lemko ethnographic group is one of the largest in Ukraine and is considered one of the largest diasporas in the world. Therefore, consolidated information resources could combine data not only from Ukrainian libraries, archives, and museums but also from other countries where Lemkos live. That is why the development of a geographic information system (GIS) that consolidates information about libraries in Lemkivshchyna regardless of their territorial location has become a pressing task. The consolidated GIS of

libraries, archives, and museums in Lemkivshchyna is seen as a modern socio-communicative system that, based on its own and external information resources, generates a wide range of relevant consolidated information products and services. In creating such a GIS, it is proposed to use the methodological foundations and tools of socio-communicative engineering – a new engineering theory, the relevance of which is determined, in particular, by the acute need to establish constructive scientifically grounded rules and principles of socio-communicative relations in the information society. The GIS being created should be built on a platform that allows its further integration into the national information resource. It will now consider the creation of a consolidated database (UID) on the history of Lemkivshchyna using geographic information technologies. Its main purpose is to store available information about cultural heritage objects and material values, as well as electronic references to archival materials or copies of archival materials.

In creating the consolidated UID related to the libraries of Lemkivshchyna, we apply an approach that has practical implementation in relational databases, which involves using one-to-many relationships (1→∞). The database consists of the following tables: "Villages", "Archives", "Believers", "Deaneries", and "Reading Rooms". These tables are interconnected using keys – identifiers, which allows for the implementation of a relational structure (Fig. 2). The filling of the UID occurs during the study of information about a particular village, as research or processing of literature and various archival materials progresses. Thus, the database becomes a repository of obtained data and is convenient for further work, distinguished by a high level of clarity, and allows for the quick generation of necessary reports.

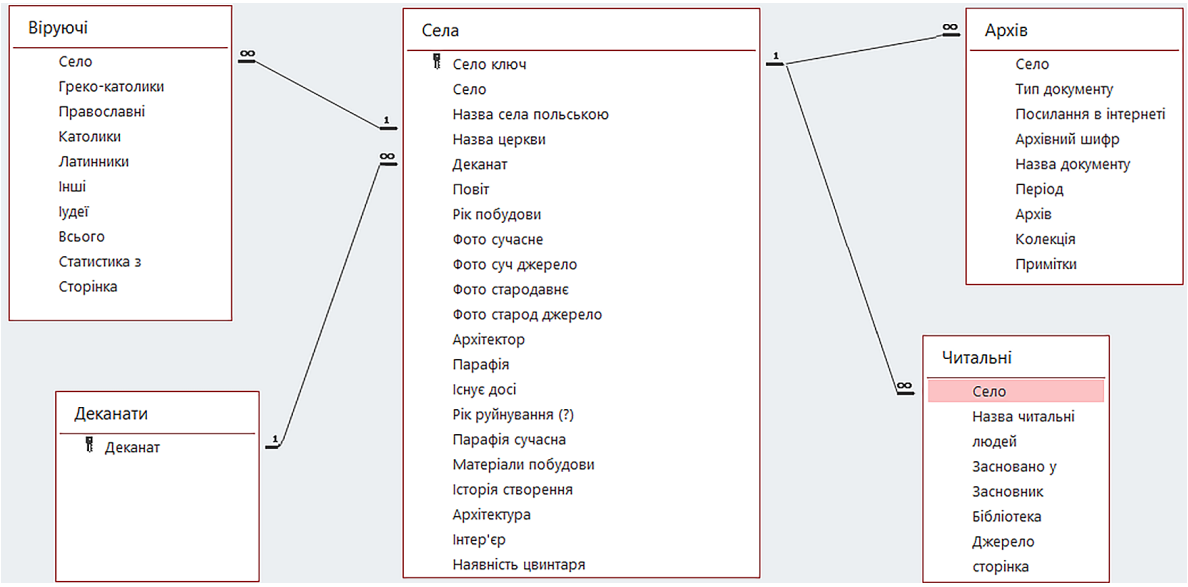

Figure 2. Structure of Relationships in the Created UID

Source: developed by the authors

The created UID, which is a software product, in accordance with Directive 96/9/EC (1996), may be subject to protection under copyright law (Skliarov *et al.*, 2023). The consolidated data contained therein belong to publicly available information, which is not subject to protection and can be freely distributed. This issue is still under-researched and may be the subject of further investigation.

Since the UID of data is linked to a geographic information system, it allows for more detailed exploration, storage, updating, and analysis of information related to the libraries of Lemkivshchyna. Scientific novelty lies in the comprehensive and systematic analysis of information and communication technologies, their integration into library affairs, and the prospects and ways of development and application, particularly in the study of reading rooms and libraries in Lemkivshchyna.

Conclusions

The result of the innovative development in archival and library affairs is information and communication technologies (including software and hardware), as well as the improvement of the quality of the product and services formed by them. Thus, we can assert that the development of information and communication technologies is one of the key aspects of the development of library and archival affairs because transforming them into consolidated sources of information allows for a new approach to studying the history of Lemkivshchyna and also offers a fresh perspective on the history of information institutions in the region.

Acknowledgements
None.

Conflict of Interest
None.

References

[1] Bilous, G.S., & Onipko, T.V. (2018). Use of Information Technologies in Activities of Library Institutions. *Collection of Scientific Articles of Masters of the Institute of Economics, Management and Information Technologies*, 1, 130-135.
[2] Blurton, C. (1999). New directions in education. In *World communication and information report, 1999-2000* (pp. 46-61). Paris: UNESCO Publishing.
[3] Bondarenko, V. (2011). Innovative Technologies as a factor in the development of modern information communications for information and analytical service of remote library users. *Scientific Papers of the Vernadsky National Library of Ukraine*, 32, 207-221.
[4] Busel, V.T. (Ed). (2005). *Interpretive dictionary of the Ukrainian language*. (Vol. 1). Kyiv: Perun Trading Houseю
[5] Cherednyk, L.A., & Dobrovolska, M.I. (2022). Innovative activity of libraries in socio-cultural space. In *Document and Information Communications in the Conditions of Globalisation: State, Problems, and Prospects* (pp. 156-160). Poltava: National University "Yuri Kondratyuk Poltava Polytechnic".
[6] Chesbrough, H.W. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*, 43(2-3), 354-363. doi: 10.1016/j.lrp.2009.07.010.
[7] Chisenga, J. (2006). Information and communication technologies: Opportunities and challenges for national and university libraries in Eastern, Central and Southern Africa. In *Standing Conference of African National and University Libraries of Eastern, Central and Southern Africa, Dar es Salaam (Tanzania)* (pp. 1-26).
[8] Davey, A. (2013). The library of the future: A response to envisioning the library of the future. 2-11. England: Art Council.
[9] Davydova, I. (2009). Innovation in management of the activity of document and communication structures. *Bulletin of the Book Chamber*, 1, 28-31.
[10] Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases. (1996, March). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31996L0009 .
[11] Garagulya, S. (2014). Libraries in information society: User orientation. *Library Bulletin*, 6, 17-23.
[12] Haliso, Y. (2007). Internet availability and use in academic libraries in South West Nigeria. *Babcock Journal of Management and Social Science*, 5, 2, 246-261.
[13] Ivashkevich, O.V. (2021). Digital transformation of libraries of Ukraine: Present and prospects. *Library Science. Documentary Studies. Informology*, 2, 50-56.
[14] Klymenko, O.Z. (2020). Modern challenges and tasks of libraries in conditions of digitisation. *Library Bulletin*, 6, 44-47.
[15] Koval, T.V. (2016). Innovative activity in library business. *Library Work*, 1, 21-23.
[16] Kunanets, N. (2012). Methodological Principles of Library Research from the Standpoint of Socio-Communication Approach. *Library Science. Documentary Studies. Informology*, 25-28.
[17] Kunanets, N., Lipak, G., & Pasichnyk, V. (2017). Socio-communication engineering: A systematic response to the challenges of the information society. *Library Science. Documentation. Informology*, 11-20.
[18] Kunanets, N.E. (2014). Socio-communication approach in library science: Innovation or restoration of traditions. *Information, Communication, Society*, 3, 11-18.
[19] Lapo, P., & Davletyarova, N. (2020). Internationalization of library and information science education in Central Asia: The case of Kazakhstan and Kyrgyzstan. In *Internationalization of Library and Information Science Education in the Asia-Pacific Region. IGI Global*, 207-224.
[20] Likhovyd, V.I. (2016). Role of innovations in shaping the competitiveness of the library. *Library Studies. Documentary Studies. Informatics: Current Problems and Development*, 41-47.
[21] Lobanovska, I.G. (2012). Linguistic support of the electronic catalogue: A comprehensive approach. *Role of Educational Libraries in the Formation of Information Space of Ukraine*, 81-92.
[22] Lobuzina, K. (2012). Modern approaches to integration of electronic information resources of libraries. *Bulletin of the Book Chamber*, 12, 24-28.
[23] Lobuzina, K., Halytska, S., & Oreshyna, N. (2016). Improvement of rubricator of the scientific library as the linguistic basis of search information and communication system. *Scientific Papers of the Vernadsky National Library of Ukraine*, 44, 448-459.
[24] Matviichuk, N.I. (2014). Innovative processes in library work in conditions of information society. In *Proceedings of Ivan Ohienko Kamianets-Podilskyi National University. Library Studies*, 23, 145-151.

[25] Mphidi, H. (2014). Digital divide or digital exclusion? The role of libraries in bridging the digital divide. *Scientific Research*.
[26] Onyshchenko, A.S., & Dubrovyna, L.A. (2011). Electronic information resources of libraries in raising intellectual and spiritual potential of Ukrainian society. *National Academy of Sciences of Ukraine. Vernadsky National Library of Ukraine*.
[27] Pavlenko, T. (2010). Modern trends in the development of libraries of higher educational institutions. *Ukrainian Library Forum*, 4, 24-29.
[28] Perez, D. (2020). Libraries, archives, and museums in guam: Examining the impact of information and communication technology. In *Internationalization of Library and Information Science Education in the Asia-Pacific Region*. *IGI Global*, 247-268.
[29] Programme for Digitisation of Cultural Goods and Collection, Storage, and Sharing of Digital Objects in Poland 2009-2020. Retrieved from www.nck.pl/badania/raporty/program-digitalizacji-dobr-kultury-orazgromadzenia-przechowywania-i-udostepniania-#.
[30] Rizun, V.V. (2016). Social communication approach in science and the field of social engineering. URL: http://journlib.univ.kiev.ua/Socialniy_pidhid.pdf.
[31] Shemaieva, H. V. (2016). Integration directions of library activity in the system of social communications. *Library. Science. Communication: Formation of the National Information Space*, 67-69.
[32] Skliarov, R.A., Shanaida, V.V., Redko, R.G., & Chetverzhuk, T.I. (2023). Comparative legal analysis of legislation in the field of software product protection in France, Germany, and Ukraine. *Proceedings*. *Series: Law*, 14, 27-39.
[33] Sprinsian, V.H. (2019). Innovative activity as a factor in raising the level of training of information, archival, and library specialists. *Information and Society*, 35-37.
[34] Stephens, M. (2012). Innovation in libraries: A review of the literature. *The Reference Librarian*, 53(4), 329-339.
[35] Veretennikova, N.V. (2016). Electronic library and information support for scientific activities of higher educational institutions. (Candidate's thesis, Vernadsky National Library of Ukraine, Kyiv, Ukraine).
[36] Yaroshenko, T. (2009). Open access to scientific information: Philosophy, policy and practice. In *Open Access Projects in Ukraine. Libraries and Information Resources in Modern World of Science, Culture, Education, and Business*.