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DIGITALIZATION, INFORMATION AND COMMUNICATION SERVICES OF THE NETWORK OF LIBRARIES IN UKRAINE FOR YOUTH

The purpose of the article *is to study information and communication services and to provide services of libraries of Ukraine for youth, young people in the period of digitalization of social communications. The practical application of digitalization of resources of libraries of Ukraine for youth, young people, and provision of information and communication services to users, as well as defining communication channels between the librarian and the user are considered.* ***The methodology*** *of the research is to apply the theoretical principles of analytical and synthetic processing of information, which made it possible to characterize information and communication services of libraries of Ukraine for youth, young people, and library services in the age of digitalization.* ***The scientific novelty*** *is to identify the transitional directions for the preparation and provision of library service information and communication facilities of libraries of Ukraine for youth, young people through the formation of a single space of transformational and innovative changes in the library network for youth, young people in the digital age.* ***Conclusions.*** *The main goals of further digital modernization of libraries of Ukraine should be: introduction of the latest digital technologies, optimization of technological processes of library service in digitalization of social communications; prioritizing the provision of digital production services for libraries of Ukraine for young people; combining and using library and information activities in the digital dimension; developing and implementing a strategy for promoting libraries for youth, young people in the digital socio-communication space; updating the role of the library in new models of information and knowledge management in the digital media space; establishing a sustainable and effective partnership of library institutions in the digital area; development of competitive advantages of library projects in the digital socio-cultural space.*

Key words: *digitalization, information and communication services, a network of libraries of Ukraine for youth, social communication, library service.*

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ЦИФРОВІЗАЦІЯ ТА ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНІ ПОСЛУГИ МЕРЕЖІ БІБЛІОТЕК УКРАЇНИ ДЛЯ ЮНАЦТВА

Мета роботи *полягає у вивченні інформаційно-комунікаційних послуг та надання сервісних послуг бібліотек України для юнацтва, молоді в період цифровізації соціальних комунікацій. Розглянуто практичне застосування цифровізації ресурсів бібліотек України для юнацтва, молоді та надання інформаційно-комунікаційних послуг користувачам, а також визначені канали комунікації між бібліотекарем та користувачем.* ***Методологія дослідження*** *полягає в застосуванні аналітичного, системного, компаративного методів, що дало можливість охарактеризувати інформаційно-*

комунікаційні послуги бібліотек України для юнацтва, молоді та бібліотечні сервіси в епоху цифровізації. ***Наукова новизна*** *полягає у виокремленні напрямів перехідного періоду щодо підготовки та надання бібліотечного сервісу інформаційно-комунікаційними засобами бібліотек України для юнацтва, молоді шляхом формування єдиного простору трансформаційних та інноваційних змін у бібліотечній мережі для юнацтва, молоді в добу цифровізації.* ***Висновки.*** *Основними цілями подальшої цифрової модернізації бібліотек України мають стати: впровадження новітніх цифрових технологій, оптимізація технологічних процесів бібліотечного сервісу в цифровізації соціальних комунікацій; пріоритетність надання послуг щодо цифрового виробництва бібліотек України ля юнацтва, молоді; поєднання та використання бібліотечно-інформаційної діяльності в цифровому вимірі; розробка та реалізація стратегії промоції бібліотек для юнацтва, молоді у цифровому соціокомунікаційному просторі; актуалізація ролі бібліотеки в нових моделях управління інформацією та знаннями в цифровому медіапросторі; налагодження сталого й ефективного партнерства бібліотечних установ у цифровому просторі; розвиток конкурентних переваг бібліотечних проектів у цифровому соціокультурному просторі.*

Ключові слова: цифровізація, інформаційно-комунікаційні послуги, мережа бібліотек України для юнацтва (молоді), соціокомунікація, бібліотечний сервіс.

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ЦИФРОВИЗАЦИЯ И ИНФОРМАЦИОННО-КОММУНИКАЦИОННЫЕ УСЛУГИ СЕТИ БИБЛИОТЕК УКРАИНЫ ДЛЯ ЮНОШЕСТВА

Цель работы *заключается в изучении информационно-коммуникационных услуг и предоставлении сервисных услуг библиотек Украины для юношества, молодежи в период цифровизации социальных коммуникаций. Рассмотрены практическое применение цифровизации ресурсов библиотек Украины для юношества, молодежи и предоставления информационно-коммуникационных услуг пользователям, а также определении каналов коммуникации между библиотекарем и пользователем.* ***Методология исследования*** *заключается в применении аналитического, системного, компаративного методов, что позволило охарактеризовать информационно-коммуникационные услуги библиотек Украины для юношества, молодежи и библиотечные сервисы в эпоху цифровизации.* ***Научная новизна*** *заключается в выделении направлений переходного периода на подготовку и предоставление библиотечного сервиса информационно-коммуникационными средствами библиотек Украины для юношества, молодежи через формирование единого пространства трансформационных и инновационных изменений в библиотечной сети для юношества, молодежи в эпоху цифровизации.* ***Выводы.*** *Основными целями дальнейшей цифровой модернизации библиотек Украины должны стать: внедрение новейших цифровых технологий, оптимизация технологических процессов библиотечного сервиса в цифровизации социальных коммуникаций; приоритетность предоставления услуг по цифровому производству библиотек Украины для юношества, молодежи; сочетание и использование библиотечно-информационной деятельности в цифровом измерении; разработка и реализация стратегии продвижения библиотек для юношества, молодежи в цифровом социокоммуникационном пространстве; актуализация роли библиотеки в новых моделях управления информацией и знаниями в цифровом медиа-пространстве; налаживание устойчивого и эффективного партнерства библиотечных учреждений в цифровом пространстве; развитие конкурентных преимуществ библиотечных проектов в цифровом социокультурном пространстве.*

Ключевые слова: цифровизация, информационно-коммуникационные услуги, сеть библиотек Украины для юношества (молодежи), социокоммуникация, библиотечный сервис.

Relevance of the research topic. The development of digital technologies, which is the basis for creating virtual services of libraries in Ukraine for youth, young people, is based on a combination of the text search keywords and documents, which depend on the structure of Weblinks. Semantic search on the Internet, which is called intellectual, is currently a topical topic for research and scientific projections on the digitization of society.

Analysis of the scientific research. The issue of the introduction of Web 1.0 - Web 3.0 libraries is devoted to the work of domestic and foreign researchers; in particular, researcher K. V. Lobuzina notes that Web 3.0 should focus interest on library technologies, which have extensive experience in organizing knowledge. The ideas of this model are entirely in line with the primary function of the library - to mediate between information and the user [1]. The scientist O.Yu. Marina believes that the main idea of Web 3.0 is to define the structure of data and consolidate it to more effectively identify, automate the process of their processing, integration and reuse in various applications. The concept of Web 4.0, which does not yet have a clear definition in scientific circulation, is justified in the direction of intelligent Web. Thus, its main difference is the use of artificial intelligence technologies in the processing of digital arrays and the organization of user interaction with them. [2].

O. Yasynska and M. Sliusar are considering the transition to new forms of virtual services, and their mastery allows creating further communication with users. Effective software and technology solutions will enable the services to be implemented on a single platform, allowing users to receive information from all information resources. [3]

The article by S. Nazarovetz and E. Kulyk introduces the concept and components of the next generation library model - Library 4.0., which discusses advanced Internet technologies that can be used to implement innovative library services and services aimed at meeting the needs of users by taking into account the features of information interaction into society. It is argued that the Library 4.0 model will not be able to rely solely on technologies since their implementation will change the structure of the information needs of users, transform the

physical space of libraries, rethink organizational models, and finance the information industry as a whole. For a comprehensive consideration of the perspectives of building a holistic concept of Library 4.0, we used separate trends of the American Center for the Future of Libraries, which allows distinguishing the components of the next generation library model - Library 4.0, to outline the prospects of further development of the latest Internet technologies, to summarize the best practices of their introduction within the library information activity [4].

The purpose of the article is to analyze the practical application of digitization of library resources for the youth in Ukraine and the provision of information and communication services to users as well as to identify communication channels between librarian and user.

Representation of the main material. The Japanese sociologist and futurist Y. Masuda, who authored the concept of the information society, made a significant contribution to the development of theoretical issues in the development of global information networks. He introduced the Plan for the Information Society - a National Goal for 2000 (*Masuda Y. The Information Society as Post-industrial Society, 1980*) in 1972. Y. Masuda noted that the information age generated by computer and communication technology would demonstrate the power of social change so powerful that it can transform society into a whole new type - the information society and, as a consequence, the digital one.

Digitalization is the saturation of electronic-digital devices, facilities, systems, and the establishment of information and communication exchange.

The primary purpose of digitalization is to create digital transformation in all spheres of human life. Such changes are only possible when the ideas, actions, initiatives, and programs related to digitalization are integrated, in particular, into national, regional, sectoral strategies, programs, and the national concept of social development.

In July 2000, in Okinawa, the G8 adopted the Charter of the Global Information Society, which sets out the basic principles for the entry of states into a specific society. The Eight proclaimed the key provisions that countries will apply in developing information society policies:

1) harnessing digital capabilities (potential IT benefits that stimulate competition, promote production, create and sustain economic growth, and increase employment open up considerable prospects); 2) bridging the electronic-digital divide (everyone should be able to access information and telecommunication systems); 3) facilitating shared participation (countries that have succeeded in harnessing the potential of IT can look forward to overcoming the obstacles that arise naturally in the development of infrastructure and moving towards a more effective implementation of their goals); 4) further development (in the creation of framework conditions for IT development will continue to play a significant role) [5].

Digitalization is based on information and communication and digital technologies, the rapid growth and spread of which affect the development of traditional forms of information consumption today, the creation, and dissemination of resources. Besides, information is a resource for the digital economy; it generates and provides information and communication interaction through the operation of electronic-digital devices, tools, and systems.

Digital technologies are market and industry, as well as a platform for efficiency and competitiveness of all other markets and industries. High-tech production and modernization of any sphere of human activity with the help of information-communication and digital technologies, scale, and pace of digital transformation of society should become a priority of the development of our state.

The digitalization of Ukraine is to create market incentives, motivations, demand and demand for the use of digital technologies, products and services among the Ukrainian industrial sectors, sectors of life, business and society for their efficiency, competitiveness, and national development, increased production of high-tech products and the well-being of the population.

The concept of ICT implementation envisages the implementation of appropriate incentives for digitization not only of the economy but also of the social and social spheres, awareness of the challenges and tools of digital infrastructure development, acquisition of digital competencies by citizens. It identifies critical areas and projects for digitization, use, and consumption of digital technologies.

Today the spontaneity of the informatization process since the end of the XX century started to become organized due to the shared work of the international organizations and different countries in the field of coordinated process management of information society creation. The most important in this process was a concerted effort to develop common approaches and principles, including at international forums and meetings, the dissemination of agreed documents: the G8 Leaders' meeting in Okinawa and the creation of the *Charter on Global Information Society, July 22, 2000*; *World Summit on the Information Society (WSIS), Geneva, December 10-12, 2003, Tunisia, November 16-18, 2005*; the UNESCO conferences and the publication of the UNESCO World Report on knowledge societies in 2005.

The central thesis of the Okinawa Charter was the statement that «information and communication technologies are one of the most important factors influencing the formation of a society of the XXI century».

Information and communication technologies influence and relate to the lifestyles of society as well as each individual, in particular, ICTs become vital and necessary for the development of community and the state, enabling all sections of the population, including adolescents, to provide information and library resources to meet their needs.

The situation with the creation of digital assets: sites, portals, digital libraries, open archives, interactive projects, etc., also needs urgent solutions. It is hugely controversial. The priority, of course, belongs to libraries of national and state levels, libraries of institutes of higher education, and some regional library institutions, which have developed network resources, sometimes promoted in social content, and create local and corporate digital projects. For example, according to the published of the Web metric Rating of Libraries of Ukraine for 2018 by NTB TNTU I. Puliui, the head positions were taken by the leading libraries of Ukraine. Among them, there was the State Library of Ukraine for Youth. The leadership of the web resources of these libraries is conditioned by system development, effective content management, use of modern web-based tools that make it possible to control the indicators of its optimization and to establish interaction with users. At the same time, the

network practice of the vast majority of domestic library institutions is representative of sites with a limited list of virtual products and services. The situation with libraries that do not have web offices on the Internet at all is more critical, and the percentage of them is quite high today.

Web search is a crucial technology of the Internet as it is the leading way to access content on the Internet. The official standard web search is primarily based on a combination of text search keywords with a vital document ranking, depending on the structure of the web links. For the mentioned reason, it has numerous limitations, and there are various research activities aimed at more intelligent forms of internet search, called semantic web search or semantic web search.

In practice, the implementation of most Ukrainian libraries in the digital media space begins with individual technology initiatives, a small range of services, that is, local optimization of library production. Technologization is mostly spontaneous, irregular, inconsistent, and differentiated, given the lack of resources and the spontaneity of digitization of library institutions, digital modernization processes are not organized, fragmented, and discrete. Such «flirting» with technologies, failure to complete the full cycle of implementation of organizational and technological innovations, their unconscious separation from the overall strategy of development of the library and information sphere does not allow the library system of Ukraine to meet the requirements of digital media space sufficiently, focusing on the acquisition of individual technological media. The library and information sphere continue to evolve in line with the old fragmented spatial and temporal patterns of the pre-electronic era [6].

Libraries that not only actively use the latest digital technologies but also successfully implement the strategy of digital modernization and optimization of library and information production, have a wide range of innovative products and services, use digital transformations to gain competitive advantages, as well as the ability to respond to the challenges of digital time quickly. They are distinguished by a good sense of the geometry of the electronic technology space, "digital accessibility," the use of communication between users, digital assets, products, services

and partners to increase the adaptability and efficiency of the library and information sphere, forecasting and developing innovations in product creation and principles of activity. Interacting on a corporate basis with various participants in the information society, they implement global digital projects at the national level, participate in or initiate international initiatives to preserve and promote cultural, scientific and digital heritage. In the professional sphere, such libraries have significant influence that is not limited to the territory of the country. In the national library and information sphere of activity, this level is occupied by the Vernadsky National Library of Ukraine, the National Parliamentary Library of Ukraine [7].

Thus, the vast majority of libraries in Ukraine are at the stage of research and testing of digital technology, which precedes the active digital modernization.

An extremely problematic situation for library institutions in Ukraine is the situation with updating the range of online products. Within the present times, the products and services offered by the libraries do not meet the actual needs of the users, almost do not fulfill the social order for full-text databases, comfortable user environment, access from mobile devices, related services, etc. In the digital age, when libraries need to emphasize their uniqueness in the area of user interest, and to provide services that meet modern requirements, to create a service component that will make the library resources available to the user just when and where they need it by embodying digital innovation in action, libraries rarely deviate from the linear development of one idea to create new information products and services. At the same time, most national libraries of different types and models are symptomatic with an emphasis only on mastering and implementing digital technologies, without taking into account the risks, features and dynamic nature of the digital transformation of library and information activities. In the professional field, awareness of the fact that "innovations related to the digital communications environment are growing "fractally" through a non-linear process in which social networks, ideas, technologies, tools, know-how interact" is not widespread. The digital dimension of product implementation requires the social and technical interaction of

manufacturers and consumers, a combination of recent and early innovations, critical analysis of additional resources and knowledge. Therefore, with the development of the digital space and the need to involve library institutions, the problem of updating the spectrum of online information products and services must be addressed at the level of understanding of the nature and dynamics of digital innovation, through empirical assessment of the transformative potential of digital technologies, based on the study of types and forms of network interaction of libraries, by identifying features of influence on digital structures of activities of network structures and processes mediated by digital technology.

Particular attention is paid to the range of library products and services for users with special needs in the context of digital realities. The analysis of the activity for their realization shows that specialized centers were established in the leading regional scientific libraries of Ukraine, in particular, the Ternopil Regional Library for Youth. Besides, most of their services are focused primarily on users with visual impairments and immobile library services. Users are offered digital devices for enlarging images of texts, photos, automated workplaces, with special software, such as Braille script, a printer capable of printing Braille, specialized software, and hardware for Internet use. Library holdings are extremely scantily replenished with periodicals in Braille (for example, "The Call" ("Zaklyk"), "Literature Readings" ("Literaturni Chytania")), and audiobooks. The most promising area of multimedia technology in libraries is to play 3D animated object models. Three-dimensional graphics gives the ability to reproduce dynamic phenomena that cannot be demonstrated by other formats. The main obstacles to the widespread use of such a tool are the need to use sophisticated software and considerable time to create a high-quality 3D multimedia product.

To sum up, it is difficult to disagree with I.O. Davydova's conclusion that at the stage of technical and technological changes in its functioning in the information society, the library social institute faces various fundamental problems that urgently need quality, validation, and timing solution. Indeed, with the addition of libraries to the digital space, the problematic situation is exacerbated, in which the national regulatory framework:

- contains many legislative holes, ambiguous provisions that adversely affect the legal, economic, organizational relationships of all participants in the digital space (from creators to users);

- does not adequately provide sufficient protection for digital assets, information products, and services;

- prevents finding a proper compromise between preserving the interests of owners and users of information products and services, and establishing the autonomy of their rights.

Despite the fact that many approaches and systems to semantic search on the Internet already exist, research in this field remains at the very beginning, and multiple open search tasks are still preserved. Some of the most current research questions may automatically translate natural language queries on formal ontological queries, as well as automatically add semantic annotations to web content, or automatically extract knowledge from web content.

Arranging Internet searches in the form of returning simple answers to simple natural language questions is still science fiction, not to mention doing web searches in the way of queries that answer a specific domain or even a general answer. However, with the ongoing activities of semantic web search, we are one step closer to making science fiction a true one that ultimately focuses on the human interface to the knowledge, information, services, and other resources available on the Web.

Semantic markup refers to the communication gap between website users and computer applications. One of the most significant organizational problems with submitting information on the Internet was that web applications were unable to provide a context for the data and, therefore, the relevance of the data was not understood. While the mentioned issues have been still evolving, the notion of data formatting, which should be followed by software agents, leads to the "execution" of part of our defini-tion and provides a way to discuss the web service.

Web service is a software system designed to support computer-to-computer communica-tion over the Internet [1]. There are thousands of web services available today. However, in the context of Web 3.0, they are central. A com-bining semantic markup and web services, Web

3.0 promises the potential for applications that can address each other directly, as well as for broader information retrieval through simpler interfaces.

The next step is not the new version, but an alternative variant of what we already have. The Web had to adapt to the mobile environment. Web 4.0 connects all devices in the real and virtual world in real-time.

Conclusions. The main goals of further digital modernization of libraries in Ukraine should be introduction of the latest digital technologies, optimization of technological processes of library service in digitalization of social communications; the priority of providing services for digital production of libraries in Ukraine for youth, young people; combining and using library and information activities in the digital dimension; developing and implementing a strategy for promoting libraries for youth, young people in the digital socio-communication space; updating the role of the library in new models of information and knowledge management in the digital media space; establishing a sustainable and effective partnership of library institutions in the digital area; development of competitive advantages of library projects in the digital socio-cultural space.

Список використаних джерел

1. Лобузіна К. Технології організації знаннєвих ресурсів у бібліотечно-інформаційній діяльності: монографія; відп. ред. О. С. Онищенко ; НАН України, Нац. б-ка України ім. В. І. Вернадського. Київ, 2012. 252 с

2. Мар'їна О. Ю. Бібліотека в епоху розвитку технологій Web 3.0. *Вісник Книжкової палати.* 2015. № 7. С. 18-20.

3. Ясинська О., Слюсар М. Віртуалізація бібліотечних сервісів у сучасному суспільстві. *Бібліотека. Наука. Комунікація: 100-річчя Національної бібліотеки України імені В. І. Вернадського*: матеріали Міжнар. наук. конф. (Київ, 6-8 лист. 2018р.) / НАН України, Нац. б-ка України ім. В. І. Вернадського, Асоц. б-к України, Рада дир. б-к та інформ. центрів- членів МААН; редкол.: Л. А. Дубровіна, В. І. Попик, В. М. Горовий [та ін.]. Київ, 2018. С. 465-469.

4. Назаровець С. Кулик Є. Бібліотека 4.0: технології та сервіси майбутнього. *Бібліотечний вісник.* 2017. № 5. С. 3-14.

5. Кісілевич-Чорнойван О. М. Міжнародне інформаційне право. Київ : ДП «Вид. дім «Персонал», 2011. С. 39 – 46 URL: http://www.nas.gov.ua/siaz/Ways_of_development_of_Ukrainian_science/article/12016.1.1.033.pdf

6. Давидова І.О. Когнітивно-комунікаційна парадигма в бібліотекознавстві. *Вісн. Харків. держ. акад. культури*: зб. наук. пр. 2013. № 40. С. 60-69.

7. Мар'їної О. Ю. Бібліотека в цифровому просторі». Харків: ХДАК, 2017. 326 с.

References

1. Lobuzina K. (2012). Technologies of the organization of knowledge resources in library and information activities: monograph; resp. ed. OS Onishchenko; NAS of Ukraine, Nat. b-ka of Ukraine them. V.I .Vernadsky. Kyiv [in Ukrainian].

2. Mar'yina O. Yu. (2015). Library in the era of Web 3.0 .Visnyk Knyzhkovoyi palaty, 7, 18-20 [in Ukrainian].

3. Yasyns'ka O., Slyusar M. (2018). Virtualization of library services in modern society. Library. Science. Communication: 100th Anniversary of the V. I .Vernadsky National Library of Ukraine: Materials Intern. Sciences. Conf. (Kyiv, Nov 6-8, 2018), (pp. 465-469). Kyiv[in Ukrainian].

4. Nazarovets′ S., Kulyk Ye. (2017). Library 4.0: technologies and services of the future. Library Bulletin, 5, 3-14 [in Ukrainian].

5. Kisilevych-Chornoyvan O. M. (2011). International Information Law. Kyiv: DP «Vyd. dim «Personal». URL: http://www.nas.gov.ua/siaz/Ways_of_development_of_Ukrainian_science/article/12016.1.1.033.pdf [in Ukrainian].

6. Davydova I. O. (2013). The cognitive-communication paradigm in Library science. Visn. Kharkiv. derzh. akad. kul′tury: zb. nauk. pr., 40, 60-69 [in Ukrainian].

7. Marina A. Yu. (2017). Library in the Digital Space. Monograph Review. Kharkiv : KhDAC [in Ukrainian].