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IT Implementation Processes in Libraries: Adopting Foreign Experience

Objective. The purpose of the article is to study the problems of implementing IT technologies in university libraries of Ukraine in the context of foreign experience. The article examines the retrospective of development of library information systems, their effectiveness and problematic issues related to the transition of library staff to work with them. **Methods.** When writing the article, the review, comparative, and historical methods were used to summarize the research on the development of library information systems and to choose a sufficiently effective and convenient system among ILS (Integrated Library System), LSP (Library Service Platform), LMS (Library Management System) or LIMS (Library Information Management System) for domestic university libraries. **Results**. The article provides a periodization of the development of library systems from 1931 till 2022. Problematic issues for Ukrainian university libraries related to the replacement of software tools with modern software products are identified. Specialists of higher education libraries are suggested to use the web-resource "Library Technology Guides" to select the latest innovative automated library systems with their subsequent configuration. **Conclusions.** As a result, the ILS Koha is proposed as more adapted system in terms of financial costs and possibility of its further maintenance by existing specialists.

Keywords: integrated library system (ILS); library service platform (LSP); library management system (LMS); library information management system (LIMS); cloud technologies; cloud computing

Introduction

Among the Sustainable Development Goals of the UN (Wikipedia, 2022) "There exist goals related to peace, justice and strong institutions (goal 16) and quality of education (goal 4) - this is very relevant for libraries", and therefore librarians play an important role in preservation of endangered culture. For example, in both Afghanistan and Ukraine [2] the librarians, academic and public ones, use their skills to preserve the digital cultural heritage of these countries as long as possible (Willems, 2022). One of the important Sustainable Development Goals noted in the report "OECD Toolkit for a Territorial Approach to the SDGs" from the "OECD Regional Development Papers" series (OECD iLibrary, 2022) is the information provision. That is why libraries need the latest technological and technical equipment for high-quality performance of activities in the specified direction. "Today, IT is used in each of the directions of the library's work: both for the organization of library processes, and for the provision of services and establishing effective communication with the users" Ukrainian Library Association, 2021b).

The assistance of international companies Clarivate (Clarivate, 2022), Elsevier (Ministry of Education and Science of Ukraine, 2022), Research4Life (Research4Life R4L, 2022) and projects, in particular SUES (OPERAS, 2022), in the access of domestic universities to international information resources is important in providing students, postgraduates, teachers, scientists with sources of information for continuing educational and scientific activities.

Among the open access electronic resources received by institutions of higher education, there are others as well (Elektronni resursy, 2022). Unfortunately, libraries, including university ones, will not be able to join some library platforms, for example, Ex Libris (Ex Libris Knowledge Center, 2022), which includes 29 resources, in particular, Alma (Ex Libris Alma, n.d.), WorldShare (OCLC, 2022) and others, because "there are big problems with the computerization and internetization of libraries in Ukraine". In the implementation of information systems, we lag behind foreign libraries by 20 years. The majority of Ukrainian libraries either did not automate their processes, or use outdated versions of Russian-made library systems, or work with Ukrainian

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software developments that do not support modern international standards" (Ukrainian Library Association, 2021b). This issue is relevant even now, because it is necessary to update software tools that were installed and used in the university libraries more than 10 years ago and do not meet modern requirements.

Methods

For this scientific publication, the comparative, review and historical methods were chosen. The chronological framework of the researched publications is 2017-2022. Individual articles indexed in the Scopus, WoS, Google Scholar databases, as well as publications on the ProQuest platform, from websites and blogs were analyzed. Publications were searched using the keywords "LSP ALMA", "ILS" and "Bibliovation". This made it possible to generalize the information obtained from the publications of foreign authors on the researched topic and draw the necessary conclusions that will be useful for solving the specified problem. A retrospective study of the use of automated library systems and their effectiveness in various countries will allow us to form an objective view of the development and formation of this field, and help Ukrainian libraries of higher education institutions to find the proper choice for replacing outdated software with more modern and innovative ones.

Results and Discussion

Among the problematic issues considered by researchers in the field of using library services platforms (LSP) and open source systems during the last five years of library technology development are: 1) how to choose provider of ILS (integrated library system) / LSP (library services platform) (Collins & Fink, 2018); 2) how to prepare an LSP migration project or implementation plan (Waterhouse, 2018); 3) balance of works related to informatics and library science; changing the nature of collections and services, taking into account the role of digital libraries (Richard E. Rubin, Rachel G. Rubin, & Alire, 2020); 4) the need to reduce the staff of libraries by creating cross-functional teams in scientific libraries (Cowan, 2021) and implementing a web-scale discovery service (WSDS) (Wong, 2020); 5) obtaining funding for the integration of the corresponding LSP (California Community Colleges, 2019): 6) problems arising when the library moves from one LSP to another (Nicholson & Tokoro, 2021); 7) annual maintenance of LSP (FedBizOpps, 2019); 8) issues of consolidation of library technology suppliers (Breeding, 2020), etc.

According to the conclusions of Chinese researchers Zhang Wanxia, Liu Bo, Sang-Bing Tsai (2022), after more than 30 years of development and application, the potential of traditional ILS has almost reached its limit, and the conflict between traditional ILS and the needs of library users has become more intense. Modern libraries have a wider range of capabilities than ever before, from improving outdated ILS to implementing next-generation ILS and participating in the development of next-generation service platforms (Wanxia, Bo &Sang-Bing Tsai, 2022).

The term “library service platform” (LSP) was introduced in 2011 by Marshall Breeding to describe a new set of products designed to take a different approach to library resource management. According to Breeding, such products address the “fundamental shift that libraries have undergone over the past decade or so toward greater engagement with electronic and digital content” (2011). Some LSP options include Alma and WorldShare Management Services (WMS), which are used by more than 1,000 libraries (Breeding, 2017), and many other libraries are preparing to migrate from their 1990s ILS to a newer platform architecture (Waterhouse, 2018).

Researchers who studied the development of library technologies, in particular Enis M. (2017) noted that among the operating system (OS) for library management, it is proposed to

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consider the OS called Future of Libraries is Open (FOLIO), developed by the library technology company Index Data and sponsored by EBSCO. They also discuss topics from the Open Library Environment (OLE) community supported by university libraries, other systems including Alma LSP, Sierra Service Platform, and BLUEcloud, and comments from Sebastian Hammer, founder of Index Data (Enis, 2017).

Information researchers focused on the concept of the library service platform (LSP), its features, functions and characteristics in detail. In particular, Pradhan Pallab (2019) noted that the use of information and communication technologies (ICT) in libraries has gradually changed the day-to-day functions and services of libraries. Libraries have changed dramatically over the years, from "library automation" in the 1930s to the current evolving genres of next-generation integrated library systems or library service platforms (LSPs) in more than half-decade. LSPs can be defined as the next generation of library management systems that have, in addition to all the built-in functions of ILS, built on a multi-user SaaS platform, taking advantage of cloud computing, web technologies and discovery service to provide capabilities to manage physical, digital and electronic materials and other services in a single unified system. Various LSP products are available in the market such as OCLC WorldShare Management Services, Ex Libris Alma, Sierra from Innovative Interfaces, ProQuest Intota, Kuali OLE, SirsiDynix BLUEcloud Suite and FOLIO (Pradhan, 2019).

Marshall Breeding (2018) in the 2018 Library Systems Report noted that technologies that focus on supporting traditional library services no longer meet the needs of libraries that want to increase their involvement in new service areas. Academic libraries are looking for more than the efficiency of collection management or the improvement of library-provided search services. Instead, they address broader educational needs by embedding relevant resources into platforms that support the curriculum and enhance the research activities of their institutions. The author also stressed that Library Services Platforms (LSPs) have been in use for over half-decade and are the proven solutions with products that continue to improve and evolve. The transition from the obsolete products to LSP can provide new efficiencies to internal library operations, but current models extend deeper into the academic enterprise. The researcher pointed out that libraries look for fully web-based products without sacrificing the rich functionality and efficiency embodied in the outdated platforms. It is unfortunate that at this late phase of the cloud computing cycle, development efforts are wasted on side-tracking new interfaces at the expense of innovation (Breeding, 2018a, p. 22-35).

How to choose a supplier. At the 2018 ALA Annual Conference and Exhibition in New Orleans, the most advanced library information systems, including PROQUEST and EBSCO were highlighted (Breeding, 2018b, p. 22-27).

A study of the innovative features of LSPs that distinguish them from LMSs, as well as an assessment of their importance, using the 2-round Delphi questionnaire method was conducted by Greek authors in 2020. The results show that experts most value an all-in-one system that includes all modules rather than different collaboration software. Interaction between systems, implementation of new metadata standards, SaaS architecture and multi-client model are also highly valued. On the contrary, the use of mobile library applications has a low rating (Kouis & Agiorgitis, 2020).

Among the latest cloud software products to help university libraries of Ukraine, attention should be paid to library service platforms: Libero, which understands the importance of the educational sector, which makes it an ideal LMS for educational institutions (Libero, 2022); LibraryIQ, which is the easiest way to see and understand your library's data in the key areas of work on one dashboard (IQ Platform – libraryIQ, 2022). The list of the library platforms used by

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libraries around the world is presented on the portal "Main Library Technology Products (ILS / LSP)" (Library Technology Guides, 2022b).

Cloud technologies now help to work in all spheres of activity in the economy and education. Cloud computing is a model where computing resources (processors, storage, software) are offered as a utility from fuzzy locations and boundaries to the user. The adoption of cloud computing in recent years has gained momentum in various directions around the world due to features such as elasticity, virtualization and pay-as-you-go pricing. According to the trend, various companies offering web applications have evolved. These companies provide the system needed to host user application on a rental basis, eliminating the need to purchase (Mayank, 2020).

Mayank Yuvaraj (2020) in the book "Cloud Computing in Libraries: Concepts, Tools and Practical Approaches" described in detail various companies that provide cloud computing solutions and infrastructure for library and information centers. OCLC initiatives and best practices adopted by other libraries around the world were discussed at length. This research identified many ways to implement cloud computing. Various initiatives by library professionals to move their websites, their integrated library system for cataloging and acquisition, cloud-based library applications, cloud card Stack Map, and their repository and interlibrary loan systems to the cloud are mentioned (Yuvaraj, 2020).

The problem of the effectiveness of the functioning of modern library systems is relevant not only for university libraries in Europe, North America, but also in Asia. The authors in the article "Evaluation of Cloud-Based Library Services Platforms: Case Study of the National Chengchi University Libraries" stated that recently, many libraries review effectiveness of the automation tools they use and decide to implement a new Library Sender Platform (LSP) for service delivery, choosing for Chengchi University Library one of the more efficient and user-friendly LSPs among Ex Libris Alma and OCLC WMS (蔡明月, 黃淑蘭, 陳靜宜 & 張琇婷, 2018). In recognition of the performance of the Ex Libris LSP, ProQuest is pleased to announce that the Ex Libris Alma library services platform has been selected by the National Institute of Informatics (NII) in Japan, an inter-university institute that promotes research in information fields. Also, the introduction of the Alma platform is part of an effort to create a new library system and network that includes support for digitized academic materials (such as e-journals and e-books) and existing library systems in the Japanese universities. With the Ex Libris Alma platform, NII will support the Japan Alliance of University Libraries Consortium for Electronic Resources (JUSTICE) with an electronic management service. As a result, JUSTICE will be able to provide access to the lists of publishers and scholarly societies and electronic resource license terms to the member libraries of the Consortium (Ex Libris, 2021).

Among library service platforms, Bibliovation (LSP) (PTFS, 2022) is a unified software system – Software as a Service (SaaS) solution. The entire platform is 100% web-based, providing mobile access from all devices. Bibliovation uses relational databases that store all data, including metadata records covering bibliographic, patron, transactional, authoritative, and acquired ones. By design, Bibliovation is highly customizable to support many different library workflows. Users can choose individual system components (for example, a data collection and discovery layer to be used only to complement an existing integrated library system (ILS)) or the entire set of services to create a complete platform. Machine-readable cataloging (MARC) records, as well as other flexible metadata formats, are created as part of the process of importing digital objects. The mobile library application, created by Solus, fully integrates with Bibliovation library services platform (LSP). This includes a content management system (CMS), unique consortium support, user self-service with barcode and RFID tag collections, and more (Solus, 2021). US libraries use Bibliovation LSPs in many cities across states (LibLime, 2021a, 2021b, 2021c; PTFS, 2021).

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The international report on library systems in 2022 summarizes the achievements of library technologies for 2021, namely: a) the acquisition of ProQuest by Clarivate, which means the joining of ProQuest, Ex Libris and Innovative Interfaces enterprises to Clarivate; b) increased consolidation of mid-sized competitors, with more acquisitions than any previous year; c) the way these competing dynamics are performed has important implications for libraries; d) library management systems based on open source software show steady growth. The library system Koha, especially with support from ByWater Solutions, continues to make inroads into US public and academic libraries; e) the major changes in academic libraries are in stark contrast to the technological sector of public libraries, where the products only marginally differ. The integrated library system (ILS) products that serve public libraries tend to evolve rather than transform, with institutions layering on additional products to modernize customer interfaces and create channels for enhanced patron engagement (Breeding, 2022).

Breeding Marshall (2017) noted that Koha was one of the first ILSs developed as open source software. Although there were some earlier projects that never became popular, Koha has been continuously developed by a growing community of developers around the world. It is currently among the most widely used ILS in the world, used in all types of libraries (Breeding, 2017).

Khan, S. A. and Ayesha, G. (2021), advocates of ILS Koha, have demonstrated its effective use in university libraries in Pakistan. Free and open source software is widely used in university libraries to manage the bibliographic information of library materials. Koha is the most used library automation software in university libraries of Pakistan. Key characteristics of a library information management system (IMS) include software reliability and security, user-friendly interface, advanced search capabilities, use of library standards (MARC, Uni MARC, RDA), online updates, developer company technical support, shared cataloging, multilingual features software etc. The study recommends that university librarians consider the above features when choosing software for library automation. The results showed that apart from the use of Koha software, there are also some other software used for library automation in university libraries of Pakistan. These systems include: Virtua, Library Management System (LMS) and Library Information Management System (LIMS) (Khan, S.A. and Ayesha, G., 2021).

Authors Robert Wilson & James Mitchell (2021) in their manual "Open Source Library Systems: A Guide" also emphasize that knowledge of an alternative to an integrated open source library system and the ability to make accurate comparisons can save a library tens of thousands up to hundreds of thousands of dollars per year, while more exactly meeting the functional needs of a library (Wilson & Mitchell, 2021).

Library Technology Guides provide comprehensive and objective information on the many different types of technology products and services used by libraries. It covers organizations that develop and maintain library-oriented software and systems. The site offers extensive databases and document repositories to help libraries consider new systems, and is an essential resource for professionals in the field to keep abreast of new developments and trends (Library Technology Guides, 2022a).

Conclusions

The development of automated library systems in the world, covering more than 80 years (1931–2022), can be classified into the following periods:

- "Automation of libraries" 1930–1991;
- Development and use of the ILS integrated library system – 1991–2010;

https://doi.org/10.15802/unilib/2022_270925

- Development and use of the library services platform LSP (Library Services Platform) – 2011–2021;
- Development and introduction of new generation LMS cloud library technologies – from 2022.

The experience of using automated library systems in Ukraine has not yet reached the required level. In particular, this is due to certain difficulties caused by:

- Insufficient funding of the university libraries for these needs;
- There are no state programs and grants for the provision of funds that can be used for technical and technological re-equipment of scientific libraries of higher education institutions;
- Part of the libraries of higher education institutions used software products for the automation of reader service and fund accounting, developed by Russian programmers, in particular, the library automation system (SAB) "Irbis64". Therefore, its use can be a certain problem and requires the transfer of the information developed in it to more modern library platforms and automated library systems used in foreign university libraries.

The Ukrainian Library Association offered the opportunity to use the full-featured ILS Koha, which is an open access product for library automation (Ukrainian Library Association, 2021a). Used worldwide by libraries of all sizes, Koha is a true enterprise-class ILS with full functionality, including basic and advanced options. Koha includes modules for acquisition, replication, cataloguing, series management, authorization, flexible reporting, label printing, multi-format notifications, offline replication when Internet access is not available, and much more. Koha will work with consortia of any size, multi-branch and single-branch libraries (Koha, 2022). Among Ukrainian libraries, full-featured ILS Koha has been successfully adapted in a small number of libraries of various types, in particular in Yaroslav Mudryi National Library of Ukraine.

REFERENCES

Breeding, M. (2017). Koha: The Original Open Source ILS. *Library Technology Reports*, *53*(6), 9-17. Retrieved from https://www.proquest.com/docview/1932310551/30787A94E3FC45A8PQ/24 (in English)

Breeding, M. (2018a). Library Systems Report 2018. *American Libraries*, *49*(5), 22-35. Retrieved from https://www.proquest.com/docview/2026328302/CDDC47C3282C47DBPQ/190 (in English)

Breeding, M. (2018b). Tech in the Exhibit Hall: Convergence, partnerships, and niche players. *American Libraries*, *49*(7/8), 22-27. Retrieved from https://www.proquest.com/docview/2120617259/30787A94E3FC45A8PQ/25 (in English)

Breeding, M. (2020). 2020 Library Systems Report. *American Libraries*, *51*(5), 30-41. Retrieved from https://www.proquest.com/docview/2407571042/CDDC47C3282C47DBPQ/195 (in English)

Breeding, M. (2022). 2022 Library Systems Report: An industry disrupted. *American Libraries*, *53*(5), 24-35. Retrieved from https://www.proquest.com/docview/2659724550/30787A94E3FC45A8PQ/6 (in English)

California Community Colleges. (2019, February 5). 110 California Community College libraries begin move to Ex Libris Alma and Primo for a new CCC library services platform. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2253923418/CDDC47C3282C47DBPQ/194 (in English)

Clarivate. (2022). *Clarivate Ukraine statement and resources*. Retrieved from https://bit.ly/3AyniUW (in English)

https://doi.org/10.15802/unilib/2022_270925

Collins, C. M., & Fink, E. (2018). How to select a new ILS/LSP vendor. *Computers in Libraries, 38*(3), 4-9. Retrieved from https://www.proquest.com/docview/2028833507/CDDC47C3282C47DBPQ/189 (in English)

Cowan, S. (2021). *Survey of use of cross-functional teams in academic libraries*. Retrieved from https://www.proquest.com/docview/2596169636/CDDC47C3282C47DBPQ/101 (in English)

Elektronni resursy vidkrytoho dostupu. (2022). Retrieved from https://sites.google.com/nlu.edu.ua/resource (in Ukrainian)

Enis, M. (2017). Open Future | Library Systems Landscape 2017. *Library Journal*, *142*(6). Retrieved from https://www.libraryjournal.com/story/open-future-library-systems-landscape-2017 (in English)

Ex Libris Alma. (n.d.). *Alma Cloud-Based Library Services Platform*. Retrieved from http://exlibrisgroup.com/products/alma-library-services-platform/ (in English)

Ex Libris Knowledge Center. (2022). Retrieved from https://bit.ly/3e46Fcf (in English)

Ex Libris. (2021, June 17). Japan's National Institute of Informatics paves the way for Japanese libraries of the future with Ex Libris Alma services. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2541684457/C59D002D669E48EFPQ/50 (in English)

FedBizOpps. (2019). *Annual Maintenance for ExLibris LSP.* Retrieved from https://www.proquest.com/docview/2246288245/CDDC47C3282C47DBPQ/192 (in English)

IQ Platform – libraryIQ: Meet your new operations platform. (2022). Retrieved from https://www.libraryiq.com/iqplatform (in English)

Khan, S. A., & Ayesha, G. (2021, February 17). Key features of information management systems (IMSs) for automation in university libraries: a view point of information professionals in Pakistan. *Library Hi Tech.* doi: https://doi.org/10.1108/LHT-04-2020-0087/FULL/XML (in English)

Koha. (2022). *About – Official Website of Koha Library Software*. Retrieved from https://koha-community.org/about/ (in English)

Kouis, D., & Agiorgitis, G. (2020). Library service platforms (LSPs) characteristics classification and importance ranking through DELPHI method application. *International Information & Library Review, 53*(4), 291-305. doi: https://doi.org/10.1080/10572317.2020.1840001 (in English)

Libero. (2022). *LMS for Educational Institutions.* Retrieved from https://libero.com.au/sectors/lms-academic-libraries/ (in English)

LibLime. (2021a, July 20). Three U.S. Government Libraries Go Live Using Bibliovation 7.0. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2553329275/30787A94E3FC45A8PQ/11 (in English)

LibLime. (2021b, September 29). LibLime Wins Multi-Million Dollar Five Year Bibliovation Contract. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2577382722/30787A94E3FC45A8PQ/8 (in English)

LibLime. (2021c, October 22). Three libraries begin using Bibliovation 7.2 in production. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2584390072/30787A94E3FC45A8PQ/10 (in English)

Library Technology Guides: Documents, Databases, News, and Commentary. (2022a). Retrieved from https://librarytechnology.org/ (in English)

Library Technology Guides: Library Technology Product Directory. (2022b). Retrieved from https://librarytechnology.org/products/ (in English)

Mayank Yuvaraj. (2020). *Cloud Computing in Libraries: Concepts, Tools and Practical Approaches.* Retrieved from https://www.proquest.com/docview/2447479911/A1CE3C508C5E4092PQ/1/thumbnail (in English)

https://doi.org/10.15802/unilib/2022_270925

Ministry of Education and Science of Ukraine. (2022). *Stvoreno resursnyi tsentr «Elsevier» dlia pidtrymky naukovykh doslidzhen ukrainskykh uchenykh*. Retrieved from https://bit.ly/3AVawRS (in Ukrainian)

Nicholson, J., & Tokoro, S. (2021). Cloud Hopping: One Library's Experience Migrating from One LSP to Another. *Technical Services Quarterly, 38*(4), 377-394. doi: https://doi.org/10.1080/07317131.2021.1973796 (in English)

OCLC. (2022). *WorldShare: Enable shared efficiencies and innovation*. Retrieved from https://www.oclc.org/en/worldshare.html (in English)

OECD iLibrary. (2022). *OECD toolkit for a territorial approach to the SDGs.* Retrieved from https://bit.ly/3e3V7Wy (in English)

OPERAS. (2022). *SUES – Supporting Ukrainian Editorial Staff.* Retrieved from https://bit.ly/3PYUYAW (in English)

Pradhan, P. (2019). *Library Services Platform (LSP): An Overview*. Retrieved from https://bit.ly/3wF16Yh (in English)

PTFS. (2021, August 26). Three public libraries begin using Bibliovation 7.0 in production. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2564488197/30787A94E3FC45A8PQ/9 (in English)

PTFS. (2022). *Bibliovation Library Services Platform for modern libraries*. Retrieved from https://ptfs.com/products/bibliovation-library-services-platform/ (in English)

Research4Life R4L. (2022). Retrieved from https://bit.ly/3ctEJ0Q (in English)

Rubin, Richard E., Rubin, Rachel G., & Alire, C. (2020). *Foundations of library and information science*. Retrieved from https://www.proquest.com/docview/2471321513/CDDC47C3282C47DBPQ/79 (in English)

Solus. (2021, June 18). Solus mobile Library App now integrated with the Bibliovation Library Services Platform. *Library Technology Guides [BLOG]*. Retrieved from https://www.proquest.com/docview/2542370915/30787A94E3FC45A8PQ/12 (in English)

Ukrainian Library Association. (2021a, April 14). *Onlainova prezentatsiia «ABIS Koha - Biblio.Center»*. Retrieved from https://bit.ly/3TBppAj (in Ukrainian)

Ukrainian Library Association. (2021b). *Vprovadzhennia ta zastosuvannia informatsiinykh system u bibliotekakh.* Retrieved from https://ula.org.ua/images/documents/4731/LibraryIT0 (in Ukranian)

Waterhouse, J. (2018). Mapping the LSP Migration Project: An Implementation Blueprint. *Computers in Libraries, 38*(2), 4-8. Retrieved from https://www.proquest.com/docview/2030761081/CDDC47C3282C47DBPQ/188 (in English)

Wikipedia. (2022). *Sustainable Development Goals*. Retrieved from https://en.wikipedia.org/wiki/Sustainable_Development_Goals (in English)

Willems, L. (2022). *Achieving the UN SDGs – is there a role for libraries?* Retrieved from https://www.elsevier.com/connect/library-connect/achieving-the-un-sdgs-is-there-a-role-for-libraries (in English)

Wilson, R., & Mitchell, J. (2021). *Open source library systems*. Retrieved from https://www.proquest.com/docview/2561093982/CE3E27A18F7B4FA0PQ/52 (in English)

Wong, S. (2020). Web-scale Discovery Service Adoption in Canadian Academic Libraries. *Partnership: The Canadian Journal of Library and Information Practice and Research*, *15*(2), 1-24. doi: https://doi.org/10.21083/PARTNERSHIP.V15I2.6124 (in English)

https://doi.org/10.15802/unilib/2022_270925

Zhang, W., Liu, B., & Tsai, S. B. (2022). Analysis and Research on Digital Reading Platform of Multimedia Library by Big Data Computing in Internet Era. *Wireless Communications and Mobile Computing, 2022*. doi: https://doi.org/10.1155/2022/5939138 (in English)

蔡明月, 黃淑蘭, 陳靜宜, & 張琇婷. (2018). 雲端圖書館服務平台之系統評估：以國立政治大學圖書館為例 [Evaluation of Cloud-Based Library Services Platforms: Case Study of the National Chengchi University Libraries]. *Journal of Educational Media & Library Sciences*, *56*(1), 1-34. Retrieved from https://bit.ly/3PVX6JB (in Chinese)

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Процеси впровадження IT у бібліотеках: переймаємо іноземний досвід

Мета. Метою статті є дослідження проблематики впровадження IT-технологій в університетських бібліотеках України у контексті іноземного досвіду. У статті розглядається ретроспектива розвитку бібліотечних інформаційних систем, їх ефективність й проблемні питання, пов'язані з переходом на роботу з ними персоналу бібліотек. **Методика.** Для написання статті використано методи оглядовий, порівняльний та історичний для узагальнення досліджень, присвячених розвитку бібліотечних інформаційних систем та для обрання вітчизняними університетськими бібліотеками достатньо ефективної та зручної серед ILS (Integrated Library System), LSP (Library Service Platform), LMS (Library Management System) або LIMS (Library Information Management System). **Результати.** В статті надано періодизацію розвитку бібліотечних систем, що охоплює 1931 – 2022 рр. Визначено проблемні питання для українських університетських бібліотек, пов'язані із заміною програмних засобів на сучасні програмні продукти. Запропоновано фахівцям бібліотек вишів використовувати web-ресурс «Library Technology Guides» для обрання новітніх інноваційних автоматизованих бібліотечних систем з подальшим їх налаштуванням. **Висновки.** В підсумках запропоновано використання ILS Koha як більше адаптованої з огляду фінансових витрат та можливості її подальшого обслуговування наявними фахівцями.

Ключові слова: інтегрована бібліотечна система (ILS); платформа бібліотечних послуг (LSP); система управління бібліотекою (LMS); система управління бібліотечною інформацією (LIMS); хмарні технології; хмарні обчислення

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