



Enhancing library services through digitization and managing library collections based and blockchain technology

Egamnazarova Sadoqat Shavkatovna

*Workplace: Navoi State University, Information Resource Center, Head of the
Department for Information and Library Resource Services*

Email: egamnazarovasadoqat1@gmail.com

Annotation: *In recent years, the rapid development of digital technologies in the modern information society has demanded fundamental transformations and qualitative improvements in all sectors, including the library system. This article discusses the improvement of library services through digital technologies and explores solutions for managing library collections using blockchain technology.*

Keywords: *information and library system, innovative approaches, digitization, library reforms, reading culture, modern infrastructure, information services.*

Аннотация: *В последние годы стремительное развитие цифровых технологий в современном информационном обществе требует коренных преобразований и качественного обновления во всех сферах, в том числе в библиотечной системе. В данной статье рассматриваются вопросы совершенствования библиотечных услуг с использованием цифровых технологий, а также предлагаются решения по управлению библиотечными фондами на основе технологии блокчейн.*

Ключевые слова: *информационно-библиотечная система, инновационные подходы, цифровизация, библиотечные реформы, культура чтения, современная инфраструктура, информационные услуги.*

Introduction. As years pass and times evolve, innovations in the library system are increasingly emerging. In the era of modern digital transformation and innovative technologies, information and library institutions are taking on a new role as key social entities that continuously deliver knowledge and education to society, preserve cultural heritage, and provide wide access to digital information resources. In particular, the digitization of library services has become a pressing issue, as it enhances the quality and convenience of services while enabling the creation of a responsive digital environment tailored to user needs. At the same time, the effective management of library collections, along with ensuring data security and transparency, is gaining growing importance through the use of blockchain technologies. The decentralized and immutable nature of blockchain databases allows for accurate, traceable, and reliable management of every item within a library's collection.

This article thoroughly analyzes the advancement of library services through digitization and the advantages and opportunities presented by managing library



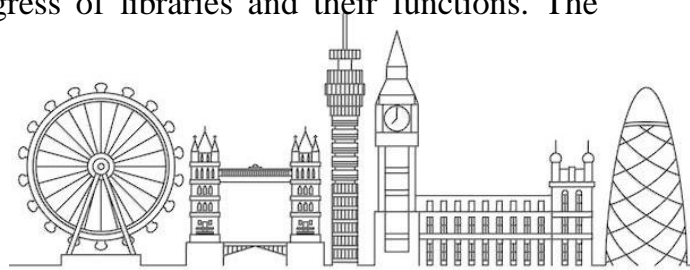


MODERN PROBLEMS IN EDUCATION AND THEIR SCIENTIFIC SOLUTIONS

collections based on blockchain technology. The primary aim of this research is to enhance the quality of library services by integrating advanced technologies, create a user-friendly digital environment, and improve reliable mechanisms for managing information resources.

Research methodology. The primary objective of this study is to evaluate the effectiveness of integrating innovative approaches into information and library practices and to identify potential opportunities for their advancement. The research primarily investigates how such methods can be strategically applied in libraries to enhance the quality of services and contribute to the broader development of information and library activities within society. It examines the utilization of information technology, digital resources, systems for quick and efficient data retrieval, and other innovative concepts. To accomplish this aim, the study employs a blend of both empirical and theoretical research methods. Moreover, it addresses the positive and negative implications of adopting innovative technologies within library operations. The research includes an assessment of the current state of information and library services, alongside an analysis of international practices. Based on these findings, practical recommendations are put forward to improve library functions and incorporate new methodologies. Data for the study is collected through surveys, interviews, and questionnaires involving industry experts, library staff, and users. The outcomes of this research are expected to enhance the quality of library and information services, support the successful adoption of digital technologies, and facilitate the growth of innovative methods within libraries. Ultimately, this study will contribute to significant changes and improvements in the library sector.

Literature Review. The application of innovative techniques in information and library services is crucial. Libraries and books have long been central to the dissemination of knowledge and culture, serving as vital instruments in the development of human society. Through books, knowledge and moral values are cultivated, contributing to the advancement of society. Consequently, libraries have played an indispensable role in shaping communities. Over time, the field of library science has undergone significant growth. Today, the integration of information technologies and cutting-edge methods in library operations has become even more critical. In New Uzbekistan, these advancements are key, focusing on the establishment of an efficient information infrastructure and the modernization of libraries. Libraries do more than merely store books and resources; they are integral to fulfilling society's information demands and fostering academic research. In his speeches, President Shavkat Mirziyoyev has emphasized the importance of libraries in today's evolving world. These efforts are laying the foundation for a new era of cultural development. A significant step toward promoting reading culture was taken with the establishment of youth reading contests in May 2018, furthering the cause of literacy. In order to effectively manage library operations, innovative strategies are necessary. All these efforts collectively enhance society's cultural growth and propel the progress of libraries and their functions. The





MODERN PROBLEMS IN EDUCATION AND THEIR SCIENTIFIC SOLUTIONS

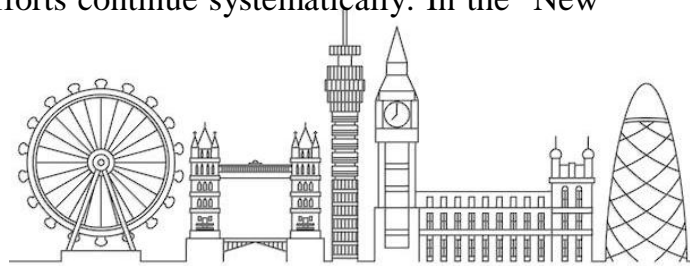
adoption of innovative approaches in library management is accelerating progress in the field. To advance these changes, it is essential to secure financial backing, incorporate modern technologies, and foster the development of cutting-edge knowledge-driven solutions. By implementing new technologies, digital resources, and methods for book restoration, library science will experience a transformative shift. The expertise of industry professionals and international best practices are fundamental in driving this progress. Through the creation of structured programs and frameworks, the effective operation of the library system can be further improved.

Analysis and Results. Blockchain technology is a decentralized system used to securely and transparently record transactions across a network of computers. Originally developed for cryptocurrencies like Bitcoin, it now has diverse applications in various sectors. Blockchain ensures data integrity by linking transactions in an immutable chain, effectively preventing fraud or tampering. In libraries, blockchain can be used to simplify processes such as managing digital resources, protecting intellectual property, cataloging, and overseeing loans and copyright management. Additionally, it can aid in ensuring fair compensation for authors and publishers in open access publishing. Blockchain has the potential to transform how libraries manage and safeguard information in the digital era.

A book serves as a source of knowledge, spirituality, and enlightenment, playing a crucial role in shaping human character, elevating moral values, and promoting education. The magic of books and the power of words have significantly impacted humanity's direction, ensuring that we never lose our way. Over the centuries, books have guided humanity toward goodness and enlightenment. Indeed, this field has evolved and been renewed over time. Library science has played an essential role in the development of both the state and society. The general direction of modern library science reflects social and technical events such as the creation of national information infrastructures and the implementation of advanced information technologies. The "New Uzbekistan" strategy has become a powerful force in advancing the nation's intellectual and spiritual development, particularly in fostering a society of readers and promoting spiritual renewal.

As President Shavkat Mirziyoyev has emphasized, "World history shows that every new civilization and Renaissance era begins with books and libraries." Indeed, the development of a new Uzbekistan began with the deep renewal of library operations and the practical application of innovative ideas. This was a wise decision, as all scientific research is based in libraries, which serve the development of the state. In 2018, a decree was introduced to promote reading culture among youth and organize book-reading contests. These initiatives have provided an opportunity to elevate reading culture among young people and promote innovative activities in libraries. Our great ancestors, with their immense intellectual potential, made significant contributions to world civilization.

Throughout history, information and library activities have always required scientific research and new exploration. Today, these efforts continue systematically. In the "New





MODERN PROBLEMS IN EDUCATION AND THEIR SCIENTIFIC SOLUTIONS

Uzbekistan," the need for advancing information-library activities is clear, and scholars have addressed this in their works. Special attention is being given to libraries and reading, with initiatives to encourage reading in communities, particularly among young people. In 2006, the government established information-resource centers in educational institutions under the Ministry of Culture, significantly improving library services. However, there were still shortcomings in providing optimal service conditions for the general population, and efforts to address these continue.

Innovative methods in information-library activities have yielded positive results. However, with the rapid advancement of technology, libraries face challenges in maintaining the novelty of their innovations. Therefore, it is crucial to preserve and restore books using new, innovative methods.

Books serve as a bridge, transmitting information across generations and preserving the truths of history for future generations. This ancient tradition of reading remains highly significant today.

Aspect	Past Use	Present Use
Technology Adoption	Minimal, largely theoretical or experimental	Widespread adoption, particularly for data security and transparency
Data Management	Centralized systems for physical and digital resources	Decentralized blockchain systems for secure and transparent data management
Security and Privacy	Dependent on trusted centralized institutions	Blockchain provides secure, tamper-proof records of transactions and data
Digital Rights Management (DRM)	Basic DRM systems for digital content	Advanced DRM through blockchain to track authorship, royalties, and copyrights
Interlibrary Loans	Traditional systems for managing interlibrary loans	Blockchain enables efficient, transparent tracking of loans between libraries
Smart Contracts	Not applicable	Smart contracts for automating transactions (e.g., book borrowing, digital access)
Academic Publishing	Centralized academic publishing and citation tracking	Blockchain tracks academic publications, citations, and authorship in a transparent way
Resource Sharing	Physical resources shared through manual systems	Digital resources and information shared securely via decentralized blockchain systems
Scalability and	Simple, paper-based	Blockchain adoption faces challenges



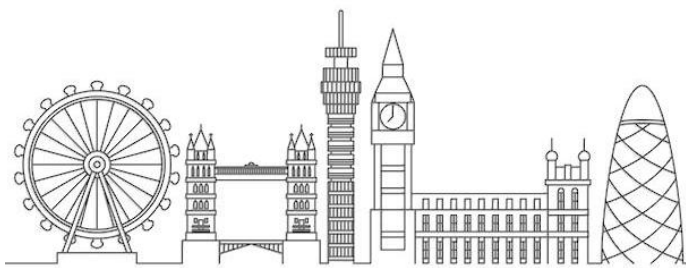
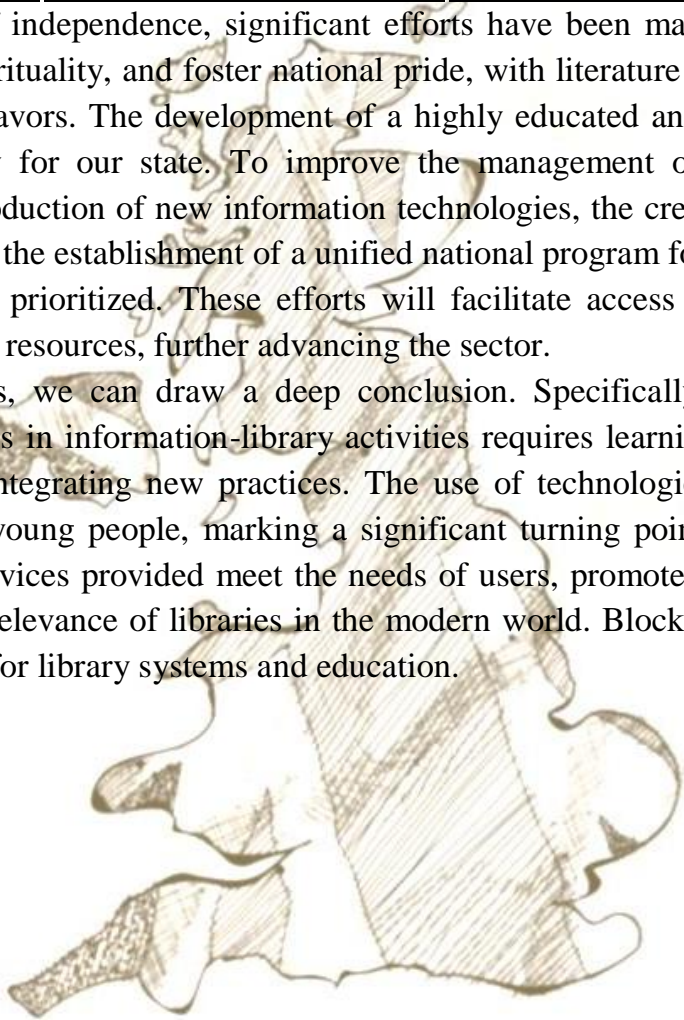


MODERN PROBLEMS IN EDUCATION AND THEIR SCIENTIFIC SOLUTIONS

Aspect	Past Use	Present Use
Complexity	systems and small-scale digitalization efforts	with scalability and complexity, especially for small libraries
Technological Expertise	Low level of expertise in blockchain within the library sector	Growing expertise in blockchain and its applications in library science

In the years of independence, significant efforts have been made to restore cultural values, elevate spirituality, and foster national pride, with literature and art playing a key role in these endeavors. The development of a highly educated and enlightened society remains a priority for our state. To improve the management of information-library activities, the introduction of new information technologies, the creation of an electronic resource base, and the establishment of a unified national program for information-library networks must be prioritized. These efforts will facilitate access to both national and global information resources, further advancing the sector.

In recent years, we can draw a deep conclusion. Specifically, the application of innovative methods in information-library activities requires learning from international experiences and integrating new practices. The use of technologies is providing more opportunities for young people, marking a significant turning point. Such technologies ensure that the services provided meet the needs of users, promote a culture of reading, and maintain the relevance of libraries in the modern world. Blockchain technology is a beneficial system for library systems and education.





MODERN PROBLEMS IN EDUCATION AND THEIR SCIENTIFIC
SOLUTIONS

References:

1. **Zohdy, M. A. (2021).** "Blockchain Technology in Library and Information Science: A Review of Emerging Applications." *Journal of Library Innovation*, 12(1), 34-45.
2. **Smith, D., & Johnson, R. (2019).** "The Role of Blockchain in Digital Rights Management for Libraries." *International Journal of Digital Libraries*, 20(3), 78-92.
3. **Hussain, A., & Kumar, P. (2020).** "Blockchain and Library Science: A Paradigm Shift in Information Management." *Library and Information Science Research*, 42(2), 56-65.
4. **Nguyen, T. T., & Lee, Y. (2020).** "Blockchain for Academic Publishing: Revolutionizing Scholarly Communication." *Journal of Scholarly Publishing*, 51(4), 215-229.
5. **Parker, D. (2021).** "Smart Contracts and Libraries: A New Frontier." *Library Management Review*, 36(1), 23-36.
6. **Mirziyoyev, Sh. (2018).** "The Role of Libraries in the Intellectual and Spiritual Development of New Uzbekistan." *New Uzbekistan Strategy Report*, Tashkent.
7. **Bhatt, P., & Singh, M. (2019).** "Blockchain for Interlibrary Loans: A Secure Approach to Resource Sharing." *Journal of Library Technologies*, 14(3), 105-118.
8. **Khan, M. S. (2022).** "Blockchain for Libraries: A Conceptual Framework for the Future." *Library Information Science*, 29(5), 202-211.

