

MODERN DEVELOPMENT TRENDS OF SCIENTIFIC LIBRARIES IN THE SYSTEM OF THE ACADEMY OF SCIENCES OF UZBEKISTAN

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Ruzieva Nilufar Pardayevna

*Affiliation: Senior Lecturer,
Department of "Library and Information Activities",
Uzbekistan State Institute of Arts and Culture
nilufarroziyeva2020@gmail.com*

Abstract

This article analyzes the modern development trends of scientific libraries within the system of the Academy of Sciences of Uzbekistan, their integration with innovative technologies and electronic resources, as well as the challenges and future prospects of library development. The research results can be useful for the scientific community and specialists in the library sector.

Keywords

Scientific library, digital technologies, electronic resources, innovation, scientific research

Introduction: Scientific libraries are essential for fostering the intellectual potential of a country. They provide strategic resources to support research and knowledge dissemination [1,3]. Libraries within the Academy of Sciences of Uzbekistan act as central hubs for scientific information management, offering both traditional collections and modern digital services. In addition, libraries aim to adopt international best practices to enhance research efficiency and accessibility [2]. Recent trends show a growing emphasis on digitization, the expansion of electronic resources, and the provision of innovative services. This transformation ensures that scientific information reaches a wider audience and that research quality improves consistently [6].

Development Directions of Libraries. The main development directions include digitization, integration of electronic resources, innovative services, user interactivity, and staff training. Libraries have increasingly focused on: Digitization: Converting print collections into digital formats to enhance accessibility [11,14]. Electronic Resources: Offering e-books, online journals, databases, and multimedia materials. Innovative Services: Introducing AI-based search systems, virtual reference services, and interactive tools [5]. User Interactivity: Improving user engagement via online platforms, mobile applications, and social media. Staff

Training: Continuously upgrading professional skills to manage digital collections effectively.

Figure 1. Development Directions of Libraries: Main Development Directions of Library Activities

Direction	Percentage (%)
Digitization	35
Electronic Resources	25
Innovative Services	15
User Interactivity	15
Staff Training	10

This illustrates the main development directions in library activities. Digitization and electronic resources are considered primary directions.

Figure 2. Annual Growth of Users Accessing Electronic Resources (2019–2025)

Year	Users (thousands)	Growth Rate (%)
2019	25	—
2020	40	60.0
2021	55	37.5
2022	70	27.3
2023	85	21.4
2024	100	17.6
2025	115	15.0

The data shows steady growth, reflecting the increasing importance of digital library services and the broader adoption of technology by researchers [6,9].

Challenges and Solutions

Scientific libraries face high financial costs during digitization. Converting books, journals, and scientific articles into electronic format requires modern technologies, servers, and specialized software. This challenge can be mitigated through state budgets, grants, and international cooperation [10]. Additionally, libraries can optimize costs by implementing digitization gradually, prioritizing the most critical resources. Insufficient technological infrastructure is another major issue[13]. Addressing this requires introducing modern equipment, updating library networks, and ensuring regular technical maintenance. Additionally, online platforms and mobile applications can broaden access to resources.

Technological Infrastructure: Some libraries have outdated servers, slow internet, and limited equipment, restricting access to electronic materials. Upgrading hardware, maintaining networks, and deploying mobile platforms can address these issues. **Staff Skills:** Managing digital libraries requires trained personnel. Continuous professional development and international cooperation programs enhance staff capability [8]. **User Awareness:** Some researchers are not fully aware of available digital services. Training workshops and promotional activities can improve usage.

Future Prospects

Scientific libraries are expected to evolve as integrated centers of knowledge, aligning with global trends. Future prospects include: **Smart Libraries:** Using AI, data analytics, and virtual reality to enhance research. **Open Access Resources:** Providing free scientific materials for broader collaboration. **Collaborative Networks:** Strengthening partnerships with international research institutions [7]. **User-Centered Services:** Developing interactive platforms and personalized services for modern users [12]. These trends ensure that libraries remain relevant, effective, and fully integrated into the scientific community.

Conclusion

Scientific libraries within the Academy of Sciences of Uzbekistan are developing through modern technologies and electronic resources, which enhances the quality of research. Libraries can become more effective by addressing challenges, expanding digital infrastructure, and providing equal opportunities for users[15]. In the future, scientific libraries will evolve as centers integrated with the scientific community, aligned with global experience, and offering innovative services.

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