



Original Article

Open Source and Shared Platforms in Library Automation: Redefining Institutional Roles and Responsibilities

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Abstract

The exponential digital change in the library service is significantly transforming traditional paradigms of library automation. The methods of automated systems planned, implemented, and administered by libraries has been redefined by the advent of open source software and collaborative type of digital platforms. Historically library automation was so dependent on proprietary software solutions that required large capital expenditures, encouraged vendor dependencies and limited flexibility of operation. In contradistinction, open-source - for instance Koha, DSpace and Greenstone - systems along with shared platforms and consortia - based infrastructures, have democratized access to sophisticated library technologies. This is a scholarly exploration into the function of open-source software and shared platforms in library automation and how these have impacted on institutional role, professional responsibilities, governance structures and service delivery models. The paper examines the shift from the isolated use of technology to collaborative digital ecosystems, with the related benefits, issues, ethics, and sustainability aspects. It goes further by analysing how librarians' roles change from being the guards of physical collections to becoming the administrators of digital information and system administrators, and the facilitators of open knowledge. The study concludes that open-source and shared platforms are not just a technological tool but strategic tools for institutional transformation in order to create a more inclusive, transparent, cost-effective and innovative library automation.

Keywords: Library Automation, Open-Source Software, Shared platforms, Institutional Roles, Digital Libraries, Koha, DSpace, collaboration, information management

Introduction

The advent of library automation is generally considered to be one of the most significant developments in the field of library and information science. Conventional libraries, whose operations have largely been dependent upon manual operations for library cataloguing, circulation, acquisitions, and reference services, have gradually adopted automated information systems that have been designed to increase operational efficiency, analytical precision, and patron satisfaction.

In the most early stages the implementation of automation was very much proprietary, vendor-controlled software applications that required large capital expenditures and the development of an addiction to external technical support teams.

The swift evolution of digital technologies has brought with it open source software and platform ecosystem sharing as powerful alternatives to the traditional use of proprietary software solutions. Open - source platforms give libraries the freedom of access, adaptation and customization of software to their specific institutional needs, thus effectively removing the liability of onerous licencing costs. Concurrently, there are shared platforms that enable cooperative resource-sharing, synchronised cataloguing and centralisation of resources and inter-institutional collaboration.

Within this dynamic technological environment, the older perception of libraries as isolated information centres has been replaced. Libraries are being cross-identified with the middle of vast, connected, interconnected digital knowledge systems. This paradigm shift has led to major reconfigurations in institutional responsibilities, governance paradigms, professional skill sets and strategies of patron engagement.

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The current study aims at exploring such transformative development and, at the same time, analysing critically the way in which paradigms of open source and shared platforms are changing institutional roles and responsibilities in the sphere of library automation.

Library Automation: Concept

Library automation refers to the systematic use of information and communication technologies in standardised library functions, i.e. acquisition, cataloguing, circulation, serials control and information retrieval. In particular, its main goals are to increase the efficiency of operations, reduce human error, broaden access to scholarly resources and increase the speed of services.

Historically, library automation took a cohort-centric approach in which the institutions were buying packaged library solutions from commercial vendors. These proprietary systems limited the ability to customise, added ever-increasing maintenance charges, and encouraged technology lock inn. For this reason, libraries have slowly realised the limitations of such closed ecosystems and have started to seek flexible, scalable and economically sustainable ways.

Contemporary library automation goes beyond digitisation of manual functions; the new model implies the full integration of digital services, web-based user interfaces, institutional repositories, discovery tools, and interconnected information systems. The development of open source and sharing platforms marks a new development stage, which is characterised by transparency, co-operative development and community driven innovation.

Open-Source Software in Librarian Automation

1. What Open Source Software is and its Characteristics

Open-source software is known as OSS or Open Source Software that refers to a category of software that has its source code available for use, modification, and sharing. The base principles of OSS, transparency, reciprocal development, freedom to alter, and community-effectuating building make it an attractive proposition for modern day libraries especially when one considers that it is cost-effective and already flexible.

2. Major Open Source Tools that are Used in Libraries

In actual practice, a number of open source platforms have been a fixture in the library automation:

- Koha - Integrated Library Management system (ILms)
- DSpace - Repository Software for institutions
- Greenstone - Digital Library Software
- EPrints - open access repository platform
- VuFind - Discovery Interface

The ability offered by these systems includes giving the library the opportunity to administer catalogues, digital collections, and institutional repositories, as well as patron services, under a highly customizable environment.

3. Benefits of Open Source to Library Automation

The benefits which accrue from use of open sources are manifold:

- Cost Efficiency: The elimination of expensive licencing fees.
- Customization: The adaptability to tailor the systems to the local institutional requirements.
- Community Support: Ongoing improvement through global developer communities.
- Technological Independence: Automating vendor lock-in.
- Transparency and Security: Open source code allows stringent security checks and helps build trust.

4. Challenges in Adoption

Notwithstanding its advantages, the acceptance of OSS is faced with obstacles: a need for technically proficient staff, the initial complexity of the set-up, a lack of formal support from vendors, a resistance to change by library staff.

Shared Systems and Collaborative Library Systems

Shared platforms make up digital infrastructures jointly conceived, administered and used by multiple scholarly institutions. Canonical examples include shared catalogues, consortia based digital libraries and cloud hosted library management systems. These infrastructures make available the resources sharing, cooperative cataloguing and collective preservation of digital resources and help extend the scholarly reach of participating entities.

Shared platforms foster institutional cooperation through eliminating redundant work and leveraging economies of scale. Empirical studies reflect that libraries involve in such as collaborative frameworks can combine digital and technical resources with human resources to create information services that are united and strong to be maintained in a stand-alone setting.

Redefining the Institutional Roles

In the present information science, open-sourcing and shared platforms have completely changed the traditional roles of libraries in institutional contexts.

From Consumers to Co-creators Librarian is no longer a passive participant in the use of software supplied by vendors - they are now active contributors to the software development and its ongoing refinement.

From Isolation to Collaboration: Institutions are no longer working in hermetic isolation, they are working in consortia, information repositories that are shared and information networks that are interconnected, creating a collaborative ethos.

From Administrative Units to Knowledge Hubs Modern libraries are now changing from administrative hubs to complex digital knowledge centers that support scholarly research, foster open access publishing, and help to manage a complex data ecosystem.

Redefining the Responsibilities of the Profession

The roles of librarians as professionals have changed dramatically with the digital era. In addition to the traditional roles of librarians, librarians also now work as:

- Digital content managers
- System administrators
- Data curators
- Trainers of information literacy
- Advocates of open access and open knowledge

This transition requires persistent professional development, technical skills to be competent and interdisciplinary work.

Governance, Policies and Ethical Dimensions

Open-source and shared platforms inevitably bring up important governance and ethical questions, the most important of which will be the issues of data privacy, intellectual property rights, long-term sustainability, and digital inclusivity. Institutions, therefore, need to develop clear policies around the use of software so that digital preservation is robust and collaborative responsibilities for this are established and help provide responsible and ethically sound practises of automating.

Impact of Users and Academic Community

The development of library automation has significantly expanded the availability of the information resources to the user, enabled remote access to library resources, improved the discovery capability of resources, and enabled open scholarship. Shared platforms provide persistent access to multi-institutional collections, which contributes to a relatively richer academic ecosystem.

Prospects and Problems of Sustainability

Sustainability is a mandatory challenge. While open-source systems reduce financial expenditures, they require ongoing institutional commitment, progressive technical skills and properly structured collaborative control. The success of shared platforms depends on mutual trust, mutual vision and effectiveness of coordination among involved institutions.

Future Prospects of Open and Shared Libraries

The next path of library automation will revolve around integrated digital ecosystems, which utilise open source redistribution engines, cloud setting, instructional artificial intelligence, and data-driven services. Libraries are set to play an important strategic role for open science, digital scholarship and for the democratization of knowledge.

Conclusion

The development of open source and shared platforms in the library automation arena is a significant paradigmatic shift in the operational, collaborative and service oriented practises of today's libraries. By reconfirming institutional identities away from solitary service providers and towards joining knowledge partners in collaboration, these technologies force an intellectual interrogation of role-based relationships. The successful implementation of open and shared systems requires, in addition to the technical adoption of open systems, concerted efforts towards organisational change, capacity building, and the creation of adequate policy systems. Ultimately, the strategic implementation of open - source and shared platforms could enable libraries to transform towards inclusive and sustainable libraries and future - ready institutions in the whole digital knowledge ecosystem.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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