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Original Article

Digital Transformation in Libraries: Shift from Point of View Isolated System to Collaborative Ecosystem

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Abstract

Digital transformation has transformed radically the organisation, roles and strategic agenda of the libraries. Traditionally libraries have operated with separate systems of automation that have been designed to manage the internal collections and services of libraries. However, the modern digital world needs connected, user-centred and collaborative information ecosystems. The integration of the tools of cloud computing and open platforms and digital repositories, discovery tools and services being networked have helped libraries to move past the standalone system to the collaborative digital ecosystem.

This research paper deals with the conceptual underpinnings, drivers and implications of digital transformation in libraries and pays special attention to moves from stand-alone systems to collaborative ecosystem. It examines the role of library organisations through an analysis of the ways in which technological convergence, institutional collaboration and changing user expectations are redefining the roles of libraries, their form of governance and service delivery models. The paper also touches upon the challenges such as interoperability, digital divide, digital data governance and sustainability, and strategies to effectively implement digital transformation. The study concludes collaborative ecosystems are required for securing libraries relevance, tenacious and value in societal terms in the knowledge economy.

Keywords: *Digital Transformation- Library Automation-Collaborative Ecosystem -Digital Libraries - Networked information systems- Knowledge infrastructure*

Introduction

Historically, libraries have been autonomous institutions with responsibility for the care of the physical and digital collection within very well defined organisational boundaries. Initial stages of library automation concerned with the exploitation of internal work processes such as cataloguing, circulation, and acquisitions through the implementation of isolated computer systems. Although these systems increased the efficiency of operation they also reinforced institutional isolation and so restricted inter-bib library collaboration.

The rapid growth of digital technologies and the increased need to get seamless access to information resources have raised the limitations associated with the resource of information in the form of siloed systems. Contemporary users increasingly expect the discovery platform to be an integrated one, that is, with remote access to the digital assets and interinstitutional availability of scholarly content. Consequently, libraries are in the middle of their digital transformation with a tendency toward collaborative libraries integrating institutions, technologies and user communities in single knowledge networks.

Concept of Digital Transformation of Library

Digital transformation in libraries is a notion of a wholesale strategic change in the design, delivery and management of services mediated by digital technologies. It goes beyond digitising the collections and automating normal processes to include organisational change, cultural adaptation and redefining service models. The leading dimensions of the digital transformation are:

- Implementation of digital platform and services

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- Usage of infrastructures based on the cloud
- Creation of user-Centred digital interfaces
- Data driven decision making according to implementation
- Advocacy of Open Access and open knowledge

Through these mechanisms, digital transformation creates the situation for libraries as dynamic knowledge infrastructures with the potential to support digital scholarship and life-long learning and make information resources and knowledge accessible to all.

Going from Isolated Systems to the Collaborating Ecosystems

- **Isolated Systems Characteristics and limitations**
  Isolated library systems: One of the institutional automation system is a system that has its own isolated positioning with very little interoperability. As a result, such systems frequently tend to create silos of fragmented data, redundancy of existing resources, incomprehensibility of resources and inefficiency in resource sharing and hence undermine the possibility of integrated information services.
- **Collaborative Ecosystems: A New Paradigm.**
  Collaborative ecosystems are inter-connected digital environments, in which libraries are involved in joint sharing of infrastructures, resources, metadata and services. Such ecosystems support such application of the shared cataloguing apprehensions, shared repositories, shared discovery platforms, and digital preservation efforts between ecosystems. The adoption of collaborative ecosystems is the part of larger struggles away from institutional autonomy and towards networked governance and co-responsibility across the scholarly communications landscape.

Driving Factors of Digital Transformation

A number of factors result in the shift to collaborative digital ecosystems:

- Technological Convergence: The convergence of cloud computing, android application programmer interfaces as well as interoperable platforms.
- Economic Pressures: The rising costs of digital resources make sharing of infrastructures a necessity.
- User Expectations: demand for access to information anywhere and anytime 24*7.
- Open Knowledge Movement: expansion of initiatives of the kind based on open access to publishing of knowledge and open data.
- Policy and Funding Frameworks: the promotion of collaborative projects by funding agencies and government organisations

Institutional Implications

The coming of digital transformation with it comes a basic change in roles and responsibilities of academic institutions. Libraries are growing from being service units to being extensive collaboratives in huge areas of knowledge. Governance structures will need to change to enable shared decision - making, policy formulation and synchronised service delivery. As a result, institutional strategies include focus on partnership building, digital capacity building and long term sustainability planning.

Professional Transformation and Skills Development

The professional identity of the librarians is transforming on a deep level. Practitioners need to build skills that relate to managing the use of digital systems, curating data, facilitating digital scholarship and managing and engaging collaborative projects. The ever evolving professional development and inter-disciplinary collaboration has been an important element in professional praxis in collaborative ecosystems.

Challenges of Creating Collaborative Ecosystems

The viability that is transferred to collaborative digital ecosystems at hand is associated with a number of challenges:

- Interoperability Issues: The technical integration of heterogeneous systems and multiple standards of all kinds is a huge challenge.
- Data Governance: When it comes to ensuring privacy and security and ensuring data that is shared is used ethically is a crucial point to consider.
- Digital Divide: Isolated institutions are holding back Egov have is especially digital infrastructure that will lead to unequal access to Egoland's digital future.
- Change Management: Resistance to organisational and cultural change is a major factor against implementation.
- Sustainability: The delegation of what is shared over time demands a constant vigilance of the maintenance efforts.

Digital Transformation Strategy Framework

Imagine wearing white coats in the towers of a power station Effectively transforming digitally means a strategic framework with:

- Indicating Interoperable technical standards
- Setting up of collaborative governance structures

- Investment in the digital infrastructure and capacity
- Execution of user-centred service design
- On-going evaluation done, adaptive management

Future Directions

The prospective evolution of library ecosystems is observed to depending on the massive assimilation of the newborn technologies, such as the artificial intelligence, linked data and semantic web applications. Within these ecosystems of collaboration, the support of digital scholarship, research data stewardship and open science endeavours is projected to ramp up its intensity. Consequently, libraries are expected to play active roles in global knowledge infrastructures and as a result, are expected to contribute to the formulation of inclusive and sustainable digital futures.

Conclusion

The digital transformation of the library is a change in library strategy from isolated automation applications to integrated collaborative digital processes. This shift does increase institutional capacity and delivery of service as well as consolidate the role that libraries play in society during the digital age. While the process is full of challenges to be overcome, technologically, organizationally and ethically, collaborative ecosystems provide a sustainable pathway for libraries to establish and sustain their relevance and impact within the fluidity of the domain of knowledge.

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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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