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LEADING CHANGE FOR DIGITAL TRANSFORMATION IN ACADEMIC LIBRARIES: STRATEGIES AND CHALLENGES

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ABSTRACT
Digital transformation in academic libraries is a complex organizational change that extends beyond technology deployment. Successful transformation depends on effective change management practices encompassing leadership, human capital development, culture, and stakeholder engagement. By adopting a strategic change management framework, academic libraries can sustainably navigate digital challenges and leverage emerging opportunities in higher education. Case studies from India and abroad reveal that libraries that manage change strategically emerge as central partners in higher education and research. Sustainable digital transformation requires continuous learning, adaptive leadership, and alignment with institutional goals.

Keywords: Digital Transformation, Academic Libraries,

Introduction

Academic libraries have traditionally served as repositories of printed knowledge, supporting teaching, learning, and research. They are undergoing a paradigm shift due to rapid advancements in digital technologies such as artificial intelligence, cloud computing, automation, and open-access platforms. Institutional repositories, mobile platforms, and data analytics has basically altered the nature of information access and scholarly communication. This transition from traditional library systems to digitally enabled knowledge ecosystems require not only technological adoption but also effective change management strategies. Digital transformation in academic libraries is fundamentally an organizational change process involving people, processes, culture, and leadership. Consequently, academic libraries are transforming into digital knowledge hubs that facilitate research, innovation, and lifelong learning. Despite widespread availability of digital tools, many libraries struggle with implementation due to resistance to change, skill gaps, budget constraints, and organizational inertia. This highlights that digital transformation is not a purely technological exercise, but a leadership-driven change management process. In India, initiatives such as Digital India, National Education Policy (NEP) 2020, and large-scale library consortia have accelerated digital adoption, making leadership and change management more critical than ever. This paper explores how academic libraries lead and manage change during digital transformation, using diverse case studies to demonstrate strategies, challenges, and outcomes.

Review of Literature

Digital transformation in academic libraries is a response to technological advancement, evolving user expectations, and changes in scholarly communication. Xu and Du (2024) define digital transformation in libraries as a holistic process involving technological innovation, organizational restructuring, and service redesign. Unlike earlier digitization efforts that focused on converting print resources into electronic formats, contemporary digital transformation emphasizes user-centered platforms, data-driven services, and integration with institutional research ecosystems.

Tenopir et al. (2023) highlight that academic libraries are increasingly supporting research data management, open science initiatives, and digital scholarship, positioning libraries as active partners in research rather than passive service providers.

Corrall, Kennan, and Afzal (2024) argue that digital transformation has expanded the strategic role of libraries, requiring alignment with institutional missions and long-term academic goals.

Studies in the Indian context reveal that national initiatives such as the National Digital Library of India (NDLI), Shodhganga, and e-Shodh Sindhu have significantly accelerated digital adoption in higher education libraries (INFLIBNET, 2023). However, scholars note that technological infrastructure alone does not guarantee effective transformation without organizational readiness and leadership support (Hooda & Gupta, 2024).

Change management literature provides a strong theoretical foundation for understanding digital transformation in libraries. Lewin's three-stage model (Unfreeze–Change–Refreeze) and Kotter's eight-step change framework remain widely applied in organizational transformation studies. Kotter (2022) emphasizes that successful change requires leadership-driven vision, employee engagement, and institutionalization of new practices.

Bryson (2023) argues that public and nonprofit organizations, including academic libraries, face unique challenges in managing change due to bureaucratic structures, resource constraints, and stakeholder diversity. This makes strategic planning and leadership intervention critical for sustainable transformation. In the context of libraries, Rowley and Hartley (2023) observe that resistance to change often arises from cultural rigidity, fear of role displacement, and skill gaps rather than opposition to technology itself. Studies consistently show that participative decision-making, transparent communication, and continuous training reduce resistance and foster acceptance of digital initiatives.

Leadership has emerged as a central theme in digital transformation research. Corrall et al. (2024) stress that library leaders must adopt transformational and adaptive leadership styles to navigate digital complexity. Transformational leadership encourages innovation, experimentation, and professional development, enabling staff to adapt to changing roles. IFLA (2023) underscores that leadership in digital libraries is no longer limited to administrative control but extends to advocacy, collaboration, and capacity building. Library leaders are expected to act as change agents who bridge technology, academic stakeholders, and policy frameworks. Indian studies reveal that institutional leadership plays a decisive role in translating national digital policies into actionable strategies at the local level (UGC, 2023). Where leadership commitment is weak, digital initiatives often remain underutilized.

Digital transformation necessitates continuous upskilling of library professionals. Tenopir et al. (2023) identify competencies such as data literacy, digital curation, cybersecurity awareness, and research analytics as critical for modern librarianship. Similarly, DeLone and McLean (2023) emphasize the need to align human capabilities with information system success. Hooda and Gupta (2024) highlight that inadequate training is a major barrier in Indian academic libraries, particularly in rural and government institutions. Professional development programs, peer learning, and collaboration with IT departments have been shown to enhance staff confidence and reduce resistance to digital change.

Government policies have played a pivotal role in shaping digital transformation in Indian academic libraries. The National Education Policy (NEP) 2020 emphasizes technology-enabled education, open access, and digital repositories as key drivers of academic excellence (Ministry of Education, 2020).

Initiatives such as ONOS aim to democratize access to scholarly resources by reducing cost disparities across institutions. Studies note that consortium-based models improve efficiency and equity but require strong coordination and institutional adaptation (INFLIBNET, 2023).

UGC (2023) guidelines on digital repositories and open access further institutionalize digital practices, making compliance mandatory. However, mandated change often encounters initial resistance unless accompanied by training and awareness programs. The COVID-19 pandemic has been recognized as a catalyst for rapid digital transformation. OECD (2023) reports that academic libraries globally transitioned to virtual services, remote access platforms, and online user engagement within a short period. Research indicates that crisis-induced change bypasses prolonged resistance due to urgency but creates sustainability challenges once normalcy returns (Xu & Du, 2024). Libraries that institutionalized emergency practices through policy revisions and staff training achieved more durable outcomes.

Objectives of the Study
The objectives of the study are:

- To examine digital transformation in academic libraries from a change management perspective.
- To analyse leadership strategies adopted during digital transitions.
- To identify challenges faced by academic libraries in managing digital change.
- To study national, institutional, case examples of digital transformation.
- To suggest strategic measures for sustainable digital transformation in academic libraries.

Research Methodology
The study adopts a qualitative and descriptive research approach based on secondary data. Data were collected from scholarly journals, policy documents, institutional reports, conference proceedings, and official portals of national and international library organizations. A case study method is used to analyses leadership-driven digital transformation across different contexts. The analysis is conceptual and interpretative, supported by illustrative case studies to provide practical insights.

Digital Transformation in Academic Libraries as an Organizational Change Process

Digital transformation in academic libraries should be understood as a structured organizational change process rather than a standalone technological intervention. Change management theories such as Lewin's Unfreeze–Change–Refreeze model and Kotter's leadership-oriented framework provide valuable insights into how libraries transition from traditional to digital environments.

In the "unfreezing" stage, libraries challenge existing practices such as print-based workflows and restricted access. The "change" stage involves implementing digital systems, redefining roles, and developing new competencies. Finally, the "refreezing" stage institutionalizes digital practices through policies, training, and cultural adaptation. Viewing digital transformation through this lens highlights the centrality of leadership, communication, and human resource development.

Change management involves preparing, supporting, and enabling individuals and institutions to transition from existing practices to new systems. Models such as Lewin's Change Model and Kotter's Change Leadership Framework emphasize leadership vision, communication, participation, and institutionalization of change. In libraries, change management addresses cultural resistance, role redefinition, and skill development.

Libraries face resistance due to fear of job displacement, lack of digital skills, budget constraints, and cultural rigidity. Therefore, managing change becomes critical to ensure smooth digital transition and long-term sustainability.

Digital transformation in academic libraries includes automation, digital repositories, remote access services, research data management, and user-centric digital platforms. Effective transformation requires alignment between technology, people, and processes.

Drivers of Digital Transformation in Academic Libraries

- Growth of digital learning and research ecosystems
- Increasing demand for remote and 24/7 access to information
- Expansion of open access resources and institutional repositories
- Integration of AI-based discovery tools and automation
- Government initiatives such as Digital India and National Education Policy (NEP) 2020
- Rising expectations for user-centered and data-driven services

Strategic Dimensions of Change Management

Leadership and Vision

Leadership plays a pivotal role in guiding academic libraries through digital change. Effective leaders articulate a clear digital vision, align transformation initiatives with institutional goals, and motivate staff to adopt new roles. Transformational and participative leadership styles are particularly effective in fostering innovation and reducing resistance. Across the analyzed cases, leadership strategies included continuous capacity building, participative decision-making, strategic technology adoption, and sustained stakeholder engagement. Library leaders acted not only as administrators but also as change agents, facilitators, and advocates for digital innovation.

Human Resource Development

Digital transformation demands new competencies such as data literacy, digital curation, cybersecurity awareness, and technology management. Continuous training, reskilling, and professional development programs are essential to overcome skill gaps among library professionals.

Organizational Culture

A culture that supports adaptability, innovation, and learning is crucial. Change management strategies should focus on reducing resistance by involving staff in decision-making, fostering teamwork, and promoting a positive attitude toward technology adoption.

Technology and Process Reengineering

Introducing digital systems such as cloud-based library management systems, RFID, AI-driven cataloging, and virtual reference services requires reengineering existing workflows. Strategic planning ensures that technology adoption aligns with user needs and institutional priorities.

Communication and Stakeholder Engagement

Transparent communication with faculty, students, administrators, and policymakers is vital. Regular feedback mechanisms help libraries refine digital services and increase user acceptance.

Challenges in Managing Digital Change

Despite significant progress, academic libraries face multiple challenges in managing digital transformation. These challenges include resistance to change among staff, inadequate funding and infrastructure, digital skill gaps, cybersecurity and data privacy concerns, copyright and licensing complexities, and persistent digital divides among users. Importantly, resistance is often cultural and psychological rather than technical, rooted in fear of role displacement and increased accountability. The study finds that these challenges can be effectively mitigated through transparent communication, continuous training, and inclusive leadership practices.

Opportunities and Outcomes

Effective change management enables academic libraries to:

- Enhance service quality and accessibility
- Improve research support and knowledge dissemination
- Strengthen institutional reputation
- Support interdisciplinary learning and innovation
- Transform libraries into **knowledge innovation hubs**

Conceptual Framework for Case Study Analysis

Digital transformation in academic libraries cannot be understood purely as a technological upgrade. It is a multi-dimensional organizational change process involving structural, cultural, and behavioural transformation. The Study applies a change management lens, drawing implicitly on Lewin's Change Model (Unfreeze–Change–Refreeze) and Kotter's leadership-oriented change principles, to analyze real-world digital transformation initiatives.

The selected case studies represent four distinct change pathways:

- Policy-led systemic change (ONOS)
- Vision-driven inclusive change (NDLI)
- Mandated compliance-based change (Shodhganga)
- Crisis-induced rapid change (COVID-19 digital transition)

Together, they provide a comprehensive understanding of how leadership strategies shape digital transformation outcomes in academic libraries.

Case Study 1: One Nation One Subscription (ONOS)
(A Model of Policy-Led Digital Transformation)

ONOS represents a policy-led national digital transformation initiative aimed at providing equitable access to international scholarly journals across Indian HEIs. Leadership at the national level centralized subscription negotiations through INFLIBNET, while institutional leaders facilitated local adoption. Before ONOS, access to international scholarly journals in India was highly uneven. Elite institutions could afford expensive subscriptions, while many government and rural colleges lacked access entirely. This created knowledge inequality and constrained research productivity. ONOS was conceptualized as a national-level intervention to address this structural imbalance through collective negotiation and centralized access.

ONOS exemplifies top-down strategic leadership, where policy direction originates at the national level but implementation occurs locally.

Key leadership actions included:

- **Vision articulation**: Positioning ONOS as a national research equity mission
- **Stakeholder alignment**: Coordinating UGC, INFLIBNET, publishers, and institutions
- **Role redefinition**: Librarians transitioned from procurement managers to research access facilitators
- **Infrastructure enablement**: Integration with institutional authentication systems

From a change management perspective, ONOS effectively "unfroze" traditional acquisition practices by questioning cost inefficiencies and inequitable access. ONOS demonstrates that policy-led change can be sustainable only when institutions internalize ownership of the reform.

Case Study 2: National Digital Library of India (NDLI)
(A Vision-Driven and Inclusive Change Model)

NDLI was conceived to democratize access to learning resources across disciplines, languages, and learner categories. Unlike ONOS, NDLI focuses not only on higher education but also on lifelong learning and inclusivity.

NDLI exemplifies a vision-driven and inclusive digital change model.

NDLI's leadership model is collaborative and participative:

- A clear national vision aligned with *Digital India*
- Distributed content creation involving libraries and institutions
- Librarians empowered as digital curators and user educators

Leadership focused heavily on cultural change, encouraging libraries to see themselves as contributors to a shared national knowledge ecosystem. NDLI proves that vision-driven change supported by collaboration fosters deeper cultural acceptance. NDLI leadership adopted a capacity-building approach, offering tools, training, and technical support.

Case Study 3: Shodhganga – Institutional Repository Initiative
(Mandated Change with Cultural Resistance)

Shodhganga mandated electronic submission of theses, challenging long-standing academic traditions centered on print submission and restricted access.

Leadership relied on:

- Regulatory authority through UGC mandates
- Librarian training in repository management
- Faculty and scholar orientation programs

Shodhganga representing a compliance-based change model, effective but initially resistant. Mandated change becomes effective only when accompanied by trust-building and skill development. Mandated change requires trust-building, policy clarity, and skill development to overcome resistance. e-Shodh Sindhu functioned as a collaborative digital resource-sharing model, laying the foundation for ONOS. Consortium-based leadership enables scalable and cost-effective digital transformation.

Case Study 4: COVID-19–Induced Digital Transformation
(Crisis as a Catalyst for Change)

The pandemic forced immediate closure of physical libraries, leaving no alternative but digital service delivery.

Library leaders adopted:

- Rapid decision-making
- Temporary suspension of traditional workflows
- Emergency training for staff
- Experimentation with virtual services

This phase bypassed prolonged resistance due to urgency. Despite these challenges, leadership focused on learning-by-doing, accelerating digital maturity. Crisis-induced change can result in long-term transformation when leaders institutionalize learning.

Comparative Analysis of Case Studies

Dimension	ONOS	NDLI	Shodhganga	COVID-Induced Change
Nature of Change	Policy-led	Vision-led	Mandated	Crisis-driven
Leadership Level	National + Institutional	National	Institutional	Institutional
Resistance Level	Moderate	Low	High initially	High initially
Sustainability	High	High	High	Medium–High
Role of Librarians	Access facilitators	Digital curators	Research partners	Digital service enablers

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Case Study 5: KOHA Implementation in Indian Academic Libraries
(Technology-Driven Change at Institutional Level)

Many Indian universities and autonomous colleges transitioned from manual or proprietary library systems to KOHA (open-source Library Management System) to improve efficiency, reduce costs, and enhance digital services. Decision were taken by institutional leadership to adopt open-source technology. KOHA adoption shows that incremental, participative change reduces resistance and builds staff confidence. It Demonstrates how leadership decisions and staff training determine success of digital tools.

Case Study 6: RFID and Smart Library Initiatives in Central Universities
(Process Reengineering and Cultural Change)

Universities such as Delhi University, JNU, and IITs implemented RFID-based circulation and security systems to modernize library operations. Its Strategic vision to create self-service libraries Digital transformation succeeds when leadership redefines roles rather than eliminates them.

Case-Based Analysis of Digital Transformation Initiatives
To ground the analysis in real-world practice, the study examines diverse case studies representing different change pathways:

- Leadership clarity reduced resistance
- Training and communication were decisive factors
- Technology acted as an enabler, not the driver
- Libraries shifted from operational units to strategic academic partners
- Digital transformation must be strategically led, not technically managed
- Librarians need continuous upskilling and role redefinition
- Change management frameworks should guide digital initiatives
- Policy support must translate into institutional culture change

This detailed case analysis confirms that digital transformation in academic libraries is fundamentally a leadership-centric change process. Whether driven by policy, vision, mandate, or crisis, successful transformation depends on leaders' ability to manage people, align strategy, and institutionalize innovation. Academic libraries that adopt structured change management approaches will remain central to teaching, learning, and research in the digital age.

Findings of the Study
- Digital transformation is fundamentally a leadership-driven change process.
- Technology adoption alone does not ensure success.
- Capacity building and staff involvement reduce resistance and enhance acceptance.
- Policy support must be translated into institutional culture change.
- Libraries are evolving into knowledge innovation hubs.
- Change management frameworks improve the effectiveness and sustainability of digital initiatives.
- Librarians' roles are expanding from custodial functions to strategic academic partnership.
- Beyond flagship national initiatives, institutional and international case studies further demonstrate that leadership, rather than technology, is the decisive factor in managing digital transformation in academic libraries.

Strategic Measures for Sustainable Digital Transformation
- Based on the findings, the study suggests the following strategic measures:
- Formal adoption of change management frameworks in digital initiatives
- Continuous professional development and reskilling of library staff
- Participative leadership and inclusive governance structures
- Strategic use of open-source and cost-effective technologies
- Development of evaluation metrics to measure long-term impact
- Continuous communication and stakeholder engagement

These measures ensure that digital transformation is not episodic but institutionalized and sustainable.

Conclusion

Digital transformation in academic libraries is a complex organizational change that extends beyond technology deployment. Successful transformation depends on effective change management practices encompassing leadership, human capital development, culture, and stakeholder engagement. By adopting a strategic change management framework, academic libraries can sustainably navigate digital challenges and leverage emerging opportunities in higher education. Case studies from India and abroad reveal that libraries that manage change strategically emerge as central partners in higher education and research. Sustainable digital transformation requires continuous learning, adaptive leadership, and alignment with institutional goals.

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