

Developing Institutional Repositories in Academic Libraries: Best Practices and Challenges

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Abstract

Institutional Repositories (IRs) have emerged as essential components of academic libraries, enabling open access to scholarly output, preserving institutional memory, and enhancing research visibility. This article explores the development and implementation of institutional repositories in academic libraries, with a focus on best practices, technological frameworks, and the challenges faced in different institutional contexts. Through a review of global literature and real-world case studies from India, South Africa, the United States, and Latin America, the study analyzes common success factors and barriers such as policy development, faculty engagement, metadata standards, and sustainability. The paper concludes with practical recommendations for building and managing successful IRs and reflections on their evolving role in digital scholarship.

Keywords: Institutional Repositories, Academic Libraries, Open Access , Scholarly Communication , Digital Preservation ,Metadata Standards, Faculty Engagement, Repository Software , Knowledge Dissemination , Library Innovation

Introduction

In the digital era, academic libraries are evolving beyond traditional roles, assuming new responsibilities in knowledge curation and scholarly communication. One of the most transformative innovations in this domain is the Institutional Repository (IR)—a digital archive where an institution's intellectual output is collected, preserved, and disseminated. These repositories provide open access to faculty research, theses, dissertations, datasets, and other academic materials, contributing to increased visibility, citation, and impact of research.

Globally, universities and research institutions are investing in IRs to promote transparency, share publicly funded research, and comply with mandates by funding bodies. However, despite their potential, the implementation and management of IRs present significant challenges. Issues range from lack of institutional support and low faculty participation to technical hurdles in metadata quality, software integration, and long-term preservation.

In this article, we examine the growth of institutional repositories in academic libraries, highlight best practices adopted by leading institutions, and identify persistent challenges. Drawing on global and regional case studies—including from India, the U.S., and South Africa—we explore how libraries navigate complex ecosystems involving technology, policy, people, and institutional culture. The goal is to offer librarians, policymakers, and academic stakeholders practical insights into building sustainable, impactful IRs that serve the broader goals of open access and digital scholarship.

Review of Literature

1. The Role and Purpose of Institutional Repositories

Institutional repositories (IRs) are digital collections that capture and preserve the intellectual output of academic institutions. According to Lynch (2003), IRs are essential for the reform of scholarly communication, allowing unrestricted access to research and ensuring long-term preservation. The Berlin Declaration on Open Access (2003) and the Budapest Open Access Initiative (2002) emphasized the importance of open repositories in democratizing knowledge and enabling global collaboration.

IRs provide institutions with visibility, demonstrate research productivity, and allow faculty and students to archive various forms of academic work. Suber (2012) noted that repositories serve not only as publication archives but as strategic tools for improving institutional rankings and fulfilling public accountability obligations.

2. Technological Frameworks and Software Platforms

Various open-source and proprietary software platforms support IR development, including DSpace, EPrints, Fedora, and Digital Commons. DSpace is the most widely adopted, known for its flexibility and active user community. A study by Chandrakar (2017) found that over 60% of academic libraries in India that had IRs used DSpace due to its multilingual support, customizability, and robust documentation.

However, selecting appropriate software is just the beginning. Implementation must also consider interoperability, metadata quality, and long-term scalability. The use of standardized metadata schemes such as Dublin Core or MARC 21 ensures discoverability and integration with international aggregators like OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting).

3. Policy and Governance Challenges

Successful IRs require clear institutional policies regarding content submission, copyright, licensing, and retention. Jain and Bentley (2021) highlight that the absence of mandates or unclear deposit policies often results in poor faculty participation and inconsistent collection development. Institutional policies must align with national open access mandates (e.g., India's National Digital Library of India or UGC's guidelines on Shodhganga).

Governance models vary: some institutions centralize repository management in the library, while others collaborate across IT, academic departments, and research offices. Without governance clarity, repositories risk becoming underutilized digital silos.

4. Faculty Participation and Cultural Barriers

Despite infrastructure readiness, many IRs suffer from low deposit rates. Researchers often lack awareness of repository benefits or fear copyright conflicts. A study by Mphahlele and Fourie (2018) in South Africa revealed that faculty engagement was the most significant barrier to IR growth. Libraries must invest in outreach, training, and faculty incentives to encourage participation.

Institutional culture also plays a role. In traditional academic environments where print publishing or commercial journal metrics dominate, IRs are seen as secondary or optional.

Embedding repositories into academic workflows—such as linking to performance appraisals or research assessments—can enhance compliance.

5. Sustainability and Long-Term Preservation

Long-term success of IRs depends on sustainable funding, technical maintenance, and institutional commitment. Digital preservation strategies such as bit-level preservation, format migration, and periodic audits are essential to avoid data loss. According to a UNESCO report (2019), very few repositories in developing countries have robust digital preservation plans.

Sustainability also includes staffing, regular software updates, and adapting to evolving user needs. Repositories must be responsive, interoperable with research information systems, and capable of storing diverse digital objects (e.g., datasets, multimedia).

Case Studies: Institutional Repositories in Practice

1. India – Shodhganga and University-Level Repositories

India's national initiative **Shodhganga**, hosted by INFLIBNET, is one of the most prominent institutional repository platforms in the country. It mandates all Indian universities to upload approved theses and dissertations. As of 2025, over 7,000 institutions contribute to the platform. Shodhganga demonstrates how a centralized policy can improve open access and prevent duplication of research.

However, at the university level, adoption remains uneven. For instance, the **University of Delhi** has its own IR managed by the central library, built using DSpace. While the infrastructure is in place, user engagement remains a challenge due to limited awareness and faculty reluctance to deposit work. Library staff regularly conduct workshops to bridge this gap and encourage self-archiving.

2. South Africa – University of Pretoria: UPSpace

The **University of Pretoria** launched its institutional repository, **UPSpace**, in 2006 using DSpace. It has grown to house thousands of research papers, theses, and conference proceedings. The library's active collaboration with academic departments ensures a steady inflow of content.

A key factor in UPSpace's success is the **institutional mandate** requiring faculty to deposit peer-reviewed articles. Combined with librarian-mediated deposit workflows and ORCID integration, this approach has resulted in high compliance and excellent visibility for the university's research output.

3. United States – Harvard DASH Repository

Harvard University's **Digital Access to Scholarship at Harvard (DASH)** is a model of institutional open access. DASH operates under a **faculty-led open access policy**—the first of its kind—where scholars grant the university nonexclusive rights to disseminate their work.

The repository is managed by the Harvard Library Office for Scholarly Communication and is fully integrated with ORCID, funder mandates, and Harvard's internal research systems. With a dedicated budget and support team, DASH has become a highly cited and widely used IR, proving the value of aligning repository management with institutional mission.

4. Latin America – Universidad de Los Andes, Colombia

In Colombia, the **Universidad de Los Andes** developed its IR in partnership with **La Referencia**, a Latin American open access network. The repository offers multilingual metadata, supports a wide range of research formats, and participates in national and international indexing systems.

What sets this repository apart is its **focus on regional inclusivity**—preserving not just peer-reviewed research but also working papers, community-based research, and student-led projects. It reflects a culturally sensitive approach to knowledge sharing that aligns with Latin American priorities around equity and access.

5. Nigeria – University of Nigeria, Nsukka

The **University of Nigeria** launched its IR to support open access goals and reduce reliance on external publishing platforms. Using EPrints, the library has digitized hundreds of theses and made them available online.

Challenges include inconsistent internet connectivity, limited funding, and staffing constraints. Despite this, the IR team has created low-bandwidth upload systems and trained faculty in basic repository use. Their experience highlights how even resource-constrained institutions can implement IRs through innovative, context-specific solutions.

Suggestions and Recommendations

To ensure institutional repositories (IRs) thrive and achieve their intended goals, academic libraries must adopt strategic, inclusive, and sustainable approaches. Based on literature, case studies, and practitioner insights, the following recommendations are proposed:

1. Develop Clear Institutional Policies and Mandates

A written policy that outlines the purpose, scope, rights, and responsibilities regarding repository use is critical. Mandatory deposit policies, as seen at Harvard and the University of Pretoria, lead to higher faculty participation and ensure consistent content acquisition.

Action Points:

- Establish a university-wide open access policy.
- Make article deposit a requirement for research grants or academic promotions.
- Clarify copyright, licensing, and embargo procedures for authors.

2. Invest in Staff Training and Faculty Engagement

Technology alone does not ensure repository success—people do. Faculty often hesitate to deposit works due to lack of awareness, technical discomfort, or concerns about copyright. Continuous training and strong library-faculty relationships are vital.

Action Points:

- Conduct regular workshops, one-on-one consultations, and departmental outreach.

- Recognize top contributors through institutional awards or incentives.
- Assign “IR champions” in each department to promote awareness and support.

3. Ensure Technical Robustness and Interoperability

IR platforms should support metadata standards, persistent identifiers (like DOIs and ORCIDs), and integration with global indexing systems such as Google Scholar, BASE, and OpenAIRE. The repository must also be user-friendly and secure.

Action Points:

- Choose reliable, scalable software (e.g., DSpace, EPrints, or Invenio).
- Implement OAI-PMH protocols for metadata harvesting.
- Regularly back up content and monitor system performance.

4. Focus on Metadata Quality and Standardization

High-quality metadata is the key to discoverability. Poorly labeled or inconsistent records hinder visibility in search engines and aggregators. Repositories should use internationally recognized metadata schemas like Dublin Core or MODS.

Action Points:

- Standardize author names and subject headings.
- Include full abstracts, language fields, and keywords.
- Provide multilingual metadata where relevant, especially in global south contexts.

5. Secure Sustainable Funding and Institutional Support

Repositories require ongoing investment for server maintenance, staff salaries, outreach, and software upgrades. Without long-term planning, repositories risk becoming inactive or obsolete.

Action Points:

- Advocate for IR funding in library and university budgets.
- Seek external grants from bodies like UNESCO, IFLA, or national research councils.
- Collaborate with consortia (e.g., INFLIBNET, La Referencia) for shared infrastructure and training.

6. Expand the Scope of Repository Content

Limiting IRs to theses or articles misses the broader opportunity to preserve diverse intellectual output. Including datasets, presentations, policy papers, and grey literature increases value for both the institution and the research community.

Action Points:

- Encourage deposit of conference papers, syllabi, multimedia, and student work.
- Create collections for community engagement projects or institutional history.
- Integrate the repository with research data management initiatives.

7. Monitor and Evaluate Impact

Tracking repository usage, downloads, and citations can demonstrate impact and justify continued investment. Analytics also help identify gaps and inform improvement strategies.

Action Points:

- Use tools like Google Analytics, IRStats, or Altmetrics.
- Generate annual repository performance reports.
- Share success stories with stakeholders to reinforce institutional buy-in.

Conclusion

Institutional repositories have become indispensable tools for academic libraries in the digital era, enabling open access to knowledge, preserving scholarly output, and enhancing institutional visibility. As demonstrated by the diverse case studies from India, South Africa, the United States, Colombia, and Nigeria, IRs serve as more than just digital archives—they are strategic assets that support academic missions, foster knowledge equity, and contribute to the global open science movement.

However, developing and sustaining a successful IR requires more than technology. It involves building institutional policies, engaging faculty and researchers, maintaining metadata standards, ensuring technical interoperability, and most importantly, securing long-term support. Cultural resistance, copyright confusion, funding challenges, and uneven participation continue to hinder many IR initiatives, especially in developing countries.

By adopting best practices such as mandatory deposit policies, targeted outreach, robust metadata frameworks, and collaborative governance models, academic libraries can overcome these barriers. Furthermore, aligning repository development with national and global open access goals—as seen in Shodhganga, UPSpace, and DASH—enhances institutional alignment and impact.

Looking ahead, IRs will continue to evolve with the demands of digital scholarship. Integrating research data, enabling linked open data, and supporting multilingual and multimedia content will be essential. Academic libraries must remain agile and committed to building repositories that are not only technically sound but also inclusive, accessible, and sustainable.

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