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Librarians' Role in the Institutional Repositories: A Survey

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Abstract
The open-access movement in scholarly communication has surged, leading to a significant increase in the number of institutional repositories. To ensure effective institutional repository management, new professional roles and skills have been developed, which form the foundation of this article. Collection development expertise and metadata curation are considered strategic duties for repositories, making it natural for librarians to oversee these digital archives. Traditional librarian skills, however, are no longer sufficient to manage successful repositories. A broader skill set is required, including management, communication, technical knowledge, access rights, and digital content preservation. Against this backdrop, this study seeks to examine the role of librarians in populating institutional repositories.

Keywords: Institutional Repositories, Competence Skills, Information Repackaging, Digital Librarians, Scholarly Communication

Introduction

Universities and research organizations worldwide are increasingly focusing on the creation and use of digital documents, such as text, graphics, photographs, archival material, websites, blogs and vlogs, video and audio content, and television and radio broadcasts that are stored and/or transmitted electronically. Most scholarly outputs tend to bypass traditional libraries and publishers in favor of the internet. Over the years, institutions have been exploring ways to capture and reuse the intellectual output of teaching and research (Carpenter et al., 2011). The institutional repository (IR), which is the collective intellectual output of an institution recorded in a form that can be preserved and utilized, is one of these approaches.

An institutional repository is an online archive of an institution's intellectual output, maintained by faculty and researchers to improve visibility and promote free access to research through a single interface (Ahmad et al., 2012). Depending on the capability and interest of the institution, the repository may either contain all of an institution's study subjects or be subject-specific. Through unrestricted access, an IR enables faculty research to be shared as widely as possible. It is a tool for scholarly communication that collects, stores, and disseminates material.

The importance of libraries and librarians in the successful implementation of institutional repositories cannot be overstated. The conventional roles of custodian, access provider, and distributor are being replaced by a new function within the development and dissemination process. Many skills applied to print and other types of digital collections are transferrable to

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the institutional repository environment, and librarians can significantly enhance an institution's relevance and visibility by engaging in the construction of an IR (Saini, 2018).

As a result of the benefits of open access, librarians may provide direct access to scholarly publications via IRs instead of relying on publishers and vendors, as the concept of IRs appears to hold significant potential for making open access a reality. If librarians intend to create archives in their libraries that include informal scholarly communication, they must first gain a better understanding of how this content contributes to the research and scholarly communication processes.

Concept of Institutional Repositories

The institutional repository concept emerged from a debate over who would control the dissemination of an institution's intellectual output via the internet. Institutions initially viewed the pre-print archive movement as a competitor, as it was managed by various well-funded or subscription-based organizations, associations, and institutions across multiple fields (Miconi, 2010; Research Information Network, 2013). The primary points of contention involved technology, free access, and intellectual property control. Institutional repositories centralize, preserve, and provide access to an institution's intellectual capital, forming part of a global network of distributed, interoperable repositories that lay the groundwork for a new, disaggregated academic publication model.

Self-archiving practices within faculties are either non-existent or only partially supportive of repositories. According to Saini (2013), this lack of motivation stems from a lack of interest, fears of copyright violations and plagiarism among faculty members, and efforts by repository managers to engage faculty members. Chen (2010) highlights the importance of IRs in conserving and disseminating intellectual content and knowledge among researchers through an interactive user interface, benefiting the institution's research community through improved material access and discovery tools. Based on statistical data, Cothran (2011) demonstrates an increase in the use of research output facilitated by IRs.

An institutional repository is a service provided by a university or group of universities to manage and disseminate digital scholarly materials created by the institution and its members, including e-prints, technical reports, dissertations, data sets, and teaching materials. Some institutional repositories also serve as electronic presses, publishing e-journals and e-books (Markey, 2013). Institutional repositories are distinguished from subject-based repositories by their institutionally defined scope. They are digital research archives that represent an institution's intellectual capital, allowing institutions to manage and maximize access to digital scholarship, thereby increasing the visibility and academic prestige of both the institution and its authors (Ashworth, 2010).

Institutional repositories capture and preserve the intellectual output of university communities, addressing two strategic issues facing academic institutions: they provide a central role in reforming scholarly communication by fostering innovation in a disaggregated publishing structure and serve as indicators of institutional quality, thus enhancing visibility, prestige, and public value. Institutional repositories include any digital materials hosted,

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owned, or controlled by a college or university, regardless of purpose or origin. They also function as archives for collecting, preserving, and disseminating digital copies of an institution's intellectual output, particularly in research institutions (Wikipedia). Lynch (2003) described a university-based institutional repository as a set of services a university provides to manage and disseminate digital materials created by the institution and its community members. Academic institutions are currently grappling with the challenge of managing digital intellectual output, including journal articles, conference papers, reports, theses, dissertations, teaching materials, artwork, research notes, and research data. The rising cost of online journals has made it increasingly difficult for libraries to subscribe to all, or even most, online academic journals (Warren, 2013). Technology has simplified the creation, storage, and access of digital materials, and academic libraries have responded by using the DSpace project to build stable, sustainable, long-term digital repositories that address access control, rights management, retrieval, community feedback, and flexible publishing capabilities (DSpace project, 2012).

University-based institutional repositories manage, disseminate, and, where appropriate, preserve digital materials created by the institution and its community members, organizing and providing access to these materials (Lynch & Van Westrienen, 2010). The content of an institutional repository is institutionally defined, scholarly, cumulative and perpetual, open, and interoperable. It is a digital archive of the intellectual output created by an institution's faculty, research staff, and students, accessible to end-users both within and outside the institution with minimal access barriers. Some institutional repositories also function as electronic presses to publish e-journals and e-books.

An institutional repository is distinguished from a subject-based repository by its institutionally defined scope and is part of a growing effort to reform scholarly communication by reclaiming institutional control over research outputs, challenging the dominance of journal publishers. An institutional repository may also indicate the scope and scale of a university's research activities (Hitchens, 2010). The use of digital repositories is motivated by their permanence, compliance with grant agency and publisher policies, timeliness, and ability to register research outputs. Popular IR software platforms include DSpace, ePrints.org, and Fedora. According to Bansode (2011), the primary objectives of an institutional repository include providing open access to institutional research outputs through self-archiving, creating global visibility for an institution's scholarly research, collecting content in a single location, and preserving other digital assets, including unpublished or easily lost "grey" literature (e.g., theses and technical reports).

Needs and Relevance of Institutional Repositories

We live in the information age, where we can access information from anywhere in the world with a click of a mouse. Dlamini and Snyman (2017) suggested that institutional repositories can include theses, dissertations, projects, course notes, seminar papers, conference proceedings, administrative documents, learning materials, and other forms of grey literature. The following changes and challenges underscore the need for academic libraries to establish institutional repositories in today's digital world:

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- Information explosion
- Growing need for archiving and access to unpublished information
- Technological advancements
- Demand for access to knowledge resources from anywhere, at any time
- Increasing uncertainty over who will manage the preservation and archiving of digital scholarly research materials.

Components of Creating Institutional Repositories

The technology, software, and personnel requirements are crucial factors in the creation and development of institutional repositories (Giesecke, 2011).

- **Hardware**: The required hardware can range from a simple desktop computer workstation to a file server.
- **Software**: Various open-source software packages are available for running an institutional repository, such as DSpace, E-Prints, Fedora, Greenstone, and Archimede. Commercial software options include Berkeley Electronic Press and Simple DL.
- **Staff requirements**: Advances in ICTs have enabled skilled library professionals to take leadership roles in developing and managing institutional repositories, allowing them to fulfill their roles as specialists in collecting, describing, preserving, and providing access. Staffing needs, however, vary depending on the repository goals of the institution (Miconi, 2010). Key responsibilities include formulating content policies, implementing and customizing repository software, managing metadata fields and quality, generating usage reports, tracking preservation issues, advocating for software and hardware use, conducting user training, and coordinating with various institutional departments and external contacts.

Benefits of Institutional Repositories

According to Cassella and Morando (2012), the benefits of repositories for institutions and individuals are numerous and can be grouped into the following categories:

- **Raises profile and status**: A high-profile institutional repository (IR) can support marketing efforts to attract top-tier employees, students, and funding.
- **Centralizes storage of institutional output**: IRs aid in the storage and centralization of all forms of institutional output, including unpublished works.
- **Supports learning and teaching**: IRs can provide links to virtual learning environments and library catalogs, enhancing access to educational resources.
- **Assists with institutional record standardization**: IRs enable the creation of individual online dossiers linked to the full text of articles, supporting the development of institutional CVs.
- **Facilitates research performance tracking**: IRs allow for tracking and analyzing research performance across the institution.
- **Reduces publisher costs and permissions**: IRs reduce reliance on publishers to preserve materials, often with no financial benefits to authors, thereby promoting greater communication and access to research outputs.

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Challenges of Institutional Repositories

Although an institutional repository (IR) is a relatively quick and cost-effective open-access solution, sufficient infrastructure—including software, hardware, properly trained personnel, and clear rules and guidelines—must be in place to maintain various policies and govern the system (Corral, 2010).

The following are some of the challenges and potential obstacles to its success:

- **Difficulties in Content Generation**: A successful IR depends on authors' willingness to voluntarily deposit their work, which may be hindered by local restrictions. Content generation can be particularly challenging in the initial stages.
- **Diminishing Institutional Commitment**: The organization's long-term commitment to the project may wane unless the benefits of an IR become evident early on.
- **Issues with Rights Management**: Researchers may fear infringing on publishers' copyrights and be uncertain of their intellectual property rights, which can make them hesitant to share work online before it is published by a traditional publisher.
- **Policy Issues**: Past experiences suggest that an IR functions most effectively with a mandate to populate it, but mandatory participation can provoke a negative response from researchers. Lynch (2003) noted that an IR should not serve as a tool for administrative control over academic work.
- **Lack of Incentives**: Without incentives, academics may be reluctant to provide even basic bibliographic information for their work, especially if incentives are available at other institutions.
- **Working Culture Issues**: Contributing to self-service or user-generated platforms requires effort, and academics often lack the time. They may be willing to share content but reluctant to prepare it, necessitating a mediated deposit service.
- **Cost**: While the initial financial outlay for open-source software used in many IRs is low, ongoing costs, especially for staff (time spent drafting policies, developing guidelines, publicizing, training, supporting users, creating metadata, and hiring specialized IT consultants), can be substantial.

Role of Librarians in Institutional Repositories

A number of studies have examined the role of digital librarians in the workplace and the skills needed to manage digital libraries. Digital librarians are information professionals specializing in the management and organization of digital libraries. Although librarians are often referenced in articles about institutional repositories (IRs), only a few studies have focused specifically on the expertise required to administer successful repositories. Librarians play a crucial role in managing IRs, engaging in collection development, metadata creation, preservation, outreach and education, advocacy, copyright and licensing, technical support, and more (Mali & Deshmukh, 2022). Miconi (2010) explored the essential competencies for repository staff and reported findings from a study conducted in the United Kingdom on the professional background of repository administrators, identifying three main roles in repository creation:

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- **Repository management**: Involves strategic and financial management, advocacy and communication, staff and project management, and providing expert advice to the institution.
- **Technical**: Requires knowledge and experience with software platforms and repository software, covering the entire lifecycle of deployment, testing, upgrading, and development.
- **Administrative**: Encompasses tasks such as adding records, checking metadata, and managing copyright (Wickham, 2010).

The traditional roles of custodian, access provider, and distributor are evolving into a function that supports the development and dissemination process. Many skills used in print and other digital collections are transferable to IRs, allowing librarians to significantly enhance an institution's visibility and relevance by engaging in IR development (Cassella & Morando, 2012). The concept of IRs offers notable potential for advancing open access, allowing libraries to facilitate direct access to scholarly work rather than relying on publishers and suppliers.

Most repositories rely on a self-archiving system, where the author is responsible for adding items to repositories and creating metadata (Ahmad et al., 2012). Institutions are unlikely to mandate self-archiving; instead, libraries will need to convince researchers of the benefits of archiving their work. Providing adequate staffing support poses a particular challenge for libraries as they take the lead in establishing IRs and standardizing them within collection management programs (Carpenter et al., 2011). Libraries will require librarians skilled in digital collection and OAIS management to fulfill these responsibilities. New roles will include training faculty and students in OAIS usage, assisting in the preparation of digital resources, engaging them in institution-wide policy-making, and setting repository goals.

Project management tasks include leading the planning, development, and oversight of the repository, as well as providing services such as policy and procedure creation, user support and training, user-centered assessments, and ongoing program and policy evaluation (Bansode, 2011). Liaison and outreach duties involve promoting and advocating for the IR, identifying contributors, and serving as a spokesperson for the repository's benefits. Content management responsibilities include defining and managing digital collections, collaborating with IITS on system and academic technology matters, and consulting with library staff on metadata schemes appropriate for digital information. The library seeks an energetic and creative librarian capable of making significant contributions to our institution, campus, and the profession.

Expected Qualifications for IRs Librarians are:

- Experience in developing and/or managing an institutional repository system.
- Familiarity with emergence of institutional repositories, including issues, policies, service models, and strategies securing appropriate content.
- Demonstrated competencies and skills in project management and problem solving
- Excellent oral, written, and interpersonal communication skills

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- Ability to work well both independently and collaboratively to inspire a shared vision with colleagues, faculty, staff, and students in a rapidly changing and diverse campus environment.
- Outreach experience and knowledge of marketing techniques
- Capability and commitment to engage in research, service, and continued professional development for promotion
- Relevant library experience, preferably in an academic setting
- Experience with current digital collection architectures and platforms such as DSpace, Content, ePrints.org, Fedora, Digital Commons and/or other repository tools
- Knowledge of digitization standards and techniques
- Knowledge of data management requirements for federal grants and publishers
- Knowledge of scholarly communication issues, Open Access initiatives, intellectual property and copyright issues, and new forms of publication and research/creative activities
- Knowledge of web interface design and usability

Way Forward

Libraries should seek dynamic and imaginative librarians who can make meaningful contributions to their library, university, and the profession. In preparation, librarians should conduct thorough background research, including consultations with individuals who have already completed the process. Agreement in principle should be reached with colleagues and departmental management (Giesecke, 2011). A team of experts should be assembled, particularly in areas such as technology, intellectual property, metadata, policy, and advocacy. Key principles guiding the IR should be established, along with an understanding of the resource implications, especially regarding staff time. Securing top-level institutional support and commitment is essential, as is identifying both short- and long-term funding sources, with sustainability being paramount. After selecting, purchasing, and installing software (Sawant, 2011), a trial project should be conducted, during which IR policies and procedures can be evaluated and refined. Proactive invitations for content should be extended across the institution, and the IR should be promoted with enthusiasm and dedication.

Conclusion

In academia, online journal publishing is growing increasingly popular. Faculty and academics interested in submitting and publishing research articles are turning to open-access approaches to facilitate online journal publishing. In this context, IRs can be an essential tool for enhancing the visibility of an institution's intellectual output to the public through open-access publishing. Institutional repositories stand out as tangible indicators of research quality and support within academic institutions. Prioritizing IRs in universities and other institutions of higher learning will not only enrich research output but also promote scholarly publication productivity among researchers in Nigeria and other developing countries.

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