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Format for Submission
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Library Research Journal is an institution based journal from Festus Aghagbo Nwako Library of Nnamdi Azikiwe University, Awka. It is an online peer reviewed Google Scholar journal, published in the month of September. This edition is a compilation of research reports from various institutions of higher learning in Nigeria. The research reports cover a wide array of issues in Library and Information Science. This volume addresses topical issues in librarianship such as NgRen, Competency Appraisal of law cataloguers as well as law students' profile as a correlate of library use. Emerging concepts in librarianship such as MOOC's, parenting styles and readership were part of the compilation. Research reports from Festus Aghagbo Nwako Library focused on library practices in the Circulation Department, Information Literacy, Zik Research Centre and reprographic services in the library.

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CONTRIBUTING TOWARDS GLOBAL INFORMATION SERVICES BY UNIVERSITY LIBRARIES THROUGH INSTITUTIONAL REPOSITORY

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Abstract
Institutional repositories provide academic institutions with an opportunity to create a central location that collects and preserves their digital output. The opportunity to share and distribute this output is significant and serves to benefit the contributing authors and the institution itself. Since the purpose of an institutional repository is to make its contents freely available, then the global community also has something to gain. When an academic institution collects and shares its creative output, members of the institution not only benefit but also make the world academically richer by allowing scholarly communication to flow more freely. Academic libraries around the world are increasingly embracing institutional repositories to communicate effectively institutional scholarly output of all types. The collection, processing, preservation and integration of academic institution literature is critical to the mission of the institution, regardless of the format. Institutional repositories have enhanced wide dissemination of all types of research output globally. Institutional repository programs enhance global visibility of both the library, institution and the authors. As libraries move to support faculty digital publishing activities, the library's relevance to the faculty and, consequently, the institution will increase.

Keywords: *Institutional Repositories, Academic Libraries, Research Output, Open Access, Global Visibility.*

Introduction

A university library is a type of academic library. Academic libraries are libraries in institutions of higher learning such as the university, Colleges of Education, Polytechnic and so on. They exist to support the teaching, learning and research of the academic community. An Institutional Repository is simply an archive for collecting, preserving, and dissemination of digital copies of the intellectual output of an institution. According to SPARC (2002), institutional repositories are digital collections capturing and preserving the intellectual output of a single or multi-university community to provide a compelling response to two strategic issues facing academic institutions namely:

- as a natural extension of academic institutions' responsibility as generators of primary research seeking to preserve and leverage their constituents' intellectual assets; and
- as one potential major component in the evolving structure of scholarly communication. These two rationales are preeminent in capturing preserving and disseminating a university's intellectual capital. It is also a channel of indicating the institution's academic quality.

Etymologically, the word "repository" is derived from the verb "repose" meaning a state of rest, sleep, or feeling calm (Hornby, 2010). It also means a receptacle where a large volume of information is stored. It represents a place of location where potentially rich resources of information, data, images and other valuable research results are collected to access and use (Hornby 2010). An institutional repository (IR) is a digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end-users both within and outside of the institution with few if any barriers to access. It will also house experimental and observational data captured by members of the institution that support their scholarly activities (Lynch, 2003). Lynch further stated that an institutional repository is a very powerful idea that can serve as an engine of change for institutions of higher education. An institutional repository consists of formally organized and managed collections of digital content generated by faculty, staff, and students of an institution. Repositories are important for universities in helping to manage and capture intellectual assets as a part of their information strategy. Repositories have the capacity to provide

link to other repositories. It can also provide machine processing data to support academic institutions.

The content of the repository is accessible to everybody who is interested. In addition, it can be harvested selectively by subject-oriented service providers to cater for the needs of scientists on relevant subjects. Institutional repository forms an authentic management system of contents, given that, apart from the documents themselves, the repository offers to the academic community a set of services for the management of that output. Output such as articles, thesis, communications, teaching materials, administrative document as well as those documents, generated by the institutions, all in various formats like texts, presentations, audio-visual records and e-learning objects. Institutional repositories capture the original research and other intellectual property generated by an institution's constituent population active in many fields. The digital content generated by the faculties and scholars are now preserved to be accessed in public domain, through a mandate passed by the respective parliaments. (Saini, 2018).

Institutional Repositories have helped to enhance the capacity of academic libraries through digital migration of data for valued scholarly communication and represent an historical and tangible embodiment of the intellectual life and output of an institution.

The main goal of institutional repositories situated in universities is to store, manage, and preserve the institution's born-digital and digitized assets, making them freely available to both local and international users via the Internet and by extension, enhancing scholarly communication. This was supported by Richard, Theo and MacColl (2006) who affirmed that institutional repositories have a greater potential than other types of information resources for disseminating research. Heath (2009) rightly predicted that institutional repositories will be an integral part of future academic libraries. Chen (2010) rightly observed that dissemination of intellectual output is the prime objective of institutional repository thus adding value and significance to the scholarly communication through the academic libraries. Swan and Carr (2009) predicted that the repository maximizes access to intellectual output of an institution by offering open access. It is no doubt that institutional repositories have increased the global

access, visibility and preserves digital content for the research communities.

Benefits of Institutional Repository in Academic Libraries

For users, institutional repositories provide expansion of the range of knowledge that can be shared and opportunities to simplify and extend dissemination. For academic institutions, the institutional repository enable Intellectual Property Rights (IPR) to be exploited more effectively, leverage of existing investments in information and content management systems and highlighting of the quality of intellectual capital (Malekani and Kavishe, 2018). They make research output of the institution more readily available, to preserve and organise the institution's research output, and to enhance the reputation of the institution. For individual researchers, the primary reason for placing their research output in an institutional repository is to enhance their visibility by making their research and publications openly available on the web, not just in fee-based databases, scholarly journals, or books; their work is likely to be used and cited more. Other benefits that accrue to researchers as a result include stewardship and preservation of their publications in digital form, which frees them from the need to maintain the content on a personal computer or website (Lynch, 2003 cited in Cullen and Chawner, 2010).

Sivan (2013), in her paper on open access repositories, listed the following as benefits institutional repositories bring to institutions:

- Opening up outputs of the institution to a worldwide audience
- Maximizing the visibility and impact of these outputs via accessibility,
- Showcasing the institution to interested constituencies- prospective staff, prospective students and other stakeholders.
- Collecting and curating digital output,
- Managing and measuring research and teaching activities
- Providing a workplace for work-in progress, and for collaborative large-scale interdisciplinary approaches to research
- Facilitating the development and sharing of digital teaching materials and aids, and

- Supporting students endeavours, providing access to these and dissertations and a location for the development of e-portfolios.
- Enhancement of and achievement of scholarly communication
- Preservation of the intellectual output and memory of the institution
- Increment in the global visibility of the university and the profile of researchers
- It is a way of that institution being ranked webometrically in research and scholarship.

University Libraries and the Institutional Repository

Types of repositories include subject-based repositories, research repositories, national repositories and institutional repositories. Out of those four main types of repository, Institutional repositories contain the various outputs of the institution. While research results are important among these outputs, so are works of qualification, and teaching and learning materials. If the repository captures the whole output, it is both a library and a showcase. It is a library holding an institutional collection, and it is a showcase because the online open access display and availability of the collection may serve to impress and connect, for example, with alumni of the institution or the colleagues of researchers. A repository can also be an instrument of the institution by supporting, for example, internal and external assessment as well as strategic planning (Wei, 2012).

Universities and research institutions establish institutional repositories to collect, showcase, and disseminate their associated work. Libraries through this arrangement have opportunity to remain visible in this migration to digital communication by being involved in the establishment and maintenance of institutional repositories and their contents (Amaral, 2008). A university library's institutional repository represent a singular opportunity platform for the collection, storage and dissemination of all aspects of scholarly output which otherwise will remain obscure, un-used or disappear all together (Mohamed, 2014). The establishment of IRs still supports the traditional roles of libraries; that is to archive and disseminate the intellectual outputs created by faculties, staff and students of the university to be made accessible to end

users within and outside the institution with limited barriers to access and thereby increasing visibility. Institutional repositories, therefore, are considered to be valuable for research and development because they offer instant access to information and knowledge resources being generated on the continent (Schofel & Soukouya, 2013).

In reality, institutional repositories contribute to the university's commitment to the furtherance of the world of knowledge. In the long-term, organizing and maintaining digital content—as well as supporting faculty as information contributors and end users—should remain the responsibility of the library. Institutional repositories also preserve and disseminate the intellectual information and knowledge among scholars through its interactive user-interface (Chen, 2010) that is dissemination of intellectual output is the prime objective of institutional repository that adds value and significance to the scholarly communication through the academic libraries. The research communities of an institution can benefit through its content and online discovery tools. Cothran (2011) on the basis of statistics reveals the improvement in the usage of research output.

The potential impact of institutional repositories on academic libraries occurs on both the strategic and tactical levels. Establishing an institutional repository program indicates that a library seeks to move beyond a custodial role to contribute actively to the evolution of scholarly communication. It becomes apparent, then, that an institution would benefit in several ways by creating an institutional repository. Items that have been added to an institutional repository are not only captured and stored, but they are also catalogued and become searchable to both the institution and to the larger world communities - depending on the user restrictions an institution may choose to establish.

Federated searching of multiple institutional repositories is an emerging development being powered by metadata standard (Amaral, 2008). The metadata assigned to items within institutional repositories is imperative to each item's findability, yet each institution has the freedom to decide how their metadata is produced and what standards it will meet. For example, the Open Archives Initiative

(OAI) has developed the OAI-PMH(OAI Protocol for Metadata Harvesting), which is a repository metadata standard. The standard is based on Dublin Core, and most open source digital repository software such as DSpace, Fedora, and Eprints all support the OAI-PMH. The standard enables the metadata of digital repositories to be harvested by search engines such as Google and OAIster (Amaral, 2008).

John (2005) stated that by establishing an institutional repository, "the library is responding to a variety of concerns: long term access, open access, and improved re-use of intellectual property."

These are activities that already correlate with the mission and goals of libraries. Additionally, librarians would make excellent managers of institutional repositories by nature. The organizational architecture of the repository, the creation and/or management of metadata, and the understanding and communicating of various licensing policies coincide with what is already traditional library work. Gibbons (2004) pointed out that the core features of institutional repositories – material collection, preservation, distribution, and metadata application – are tasks that only librarians can claim expertise in across the board. Libraries are best-suited to provide much of the document preparation expertise (document format control, archival standards) to help authors contribute their research to the institution's repository. Similarly, libraries can most effectively provide much of the expertise in terms of metadata tagging, authority controls, and the other content management requirements that increase access to, and the usability of, the data itself. University libraries and research institutions all over the world contribute to the development of scientific communication by launching Open Access repositories to promote widely visibility and accessibility of intellectual output of the institution to the world (Rychlick, 2015).

Institutional digital repository management will also provide libraries with an opportunity to remain at the forefront of their institution's scholarly communication ventures. "Libraries taking part in the process will undergo a metamorphosis: from paper-based thinking to the digital paradigm, from importers of global knowledge to exporters of local knowledge, from suppliers of visible collection to invisible partners in academic processes" (Waaijers, 2005). Institutional repository management would place libraries in a highly visible role that serves to facilitate the central hub of the institution's scholarly communication. It is therefore important that libraries take advantage of this opportunity while institutional repositories are increasing in popularity and thus secure their place in this new way of collecting and organizing an institution's digital output.

Characteristics of Institutional Repository
The essential characteristics of IR is that it is scholarly in scope, cumulative and perpetual, open and interoperable (Crow, 2002).

Major Objectives IR in Academics Institutions are:
- To maximize the global visibility, use and impact of the scientific and academic output in the international community
- To generate feedback on research
- To produce or provide storage for electronic publication for an academic institution.
- To facilitate access to the academic and scientific information.

Examples of Institutional Repository Software used in Academic Libraries
DSpace: DSpace is an open-source digital asset management system which was originally developed by Massachusetts Institute of Technology (MIT) Libraries and Hewlett-Packard (HP) Labs. Since open source initial release in 2002, the platform has been guided by a global community of committers, developers, repository managers and other stakeholders who contribute to project governance (Lumbwe, 2020). DSpace is an open source software platform that enables capture and submission of works, distribution of those works, and long-term preservation of assets. DSpace' endeavors to create a federated collection of intellectual resources from the world's leading research institutions. It supports a wide variety of data, including books, theses, 3Ddigtal scans of objects, photographs, film, video, research data sets and other forms of content. The DSpace installation process follows a "turn-key" approach and, as such, is relatively straightforward, at least in comparison to a framework like Fedora. Advanced customization of the software, however,

can be difficult and might require external consultation, in addition to introducing the possibility of unexpected complications during upgrade (Castagne, 2013).

DSpace added a new feature for using a controlled vocabulary with vocabulary look-up possible in submission forms. According to the DSpace Futures (2013) report however, some institutions are concerned that the software lacks sufficient support for geospatial and journal article metadata. DSpace has proven to be a solid repository platform since its launch in 2002. With the recent release of 3.1—and 4.0 on the horizon for November/December 2013—DSpace remains promising and competitive amidst new developments on the landscape, such as the increasing need for more robust support for research data and more extensible back-ends. As an open source project of the not-for-profit DuraSpace, DSpace is oriented towards open standards and protocols. DSpace supports all file types, but importing large research datasets can be challenging (Tripathi, 2019). The user interface is functional but somewhat dated, and lacks responsiveness to device size variation. The search engine is based on Lucene, a popular and powerful open-source engine. It can be challenging to configure the search engine and problems can be difficult to solve without programmers on hand who are well-versed in the software (Castagné, 2013).

EPrints: This is another open source software used in institutional repository. EPrints is a free and open-source software package originally and developed by researchers at the University of Southampton School of Electronics and Computer Science in 2000 (making it the oldest of the platforms in this report). It was designed specifically for archiving research papers, theses and teaching materials, though it can accept any content (Gasmelseid, 2016). EPrints initiative is designed to manage disciplinary or institutional print collections, rather than digital collections. Eprints software is Open Archives Initiative (OAI) compliant and freely available under a GNU license (General Public License) and is in use at California Institute of Technology, the University of Queensland, and other institutions. EPrints follows a "turn-key" approach and some institutions have reported that the installation process is fairly straightforward (Beazley,

2010). The administrative back-end provides access to configuration options. EPrints is capable of using a controlled vocabulary and authority lists, which can help ensure high metadata quality (http://demoprints.eprints.org/) EPrints considers its key preservations actions to be: "recording changes to a repository object by updating its 'preservation metadata'"; "enabling the service provider to download all the files and metadata comprising an object (METS and DIDL export plugins)"; and "notifying the service provider of any rights it has to copy and act on the content of an object". The default, built-in search engine can search all metadata fields; sort results by issue date, author name and title; and supports Boolean operators. Full-text indexing is available for some formats (PDF, Word and HTML) when the appropriate tools are installed. Searches are executed through the plug-ins layer and EPrints has support for the Xapian engine, which allows sorting results by relevance (Singh, 2009). The main attractions of EPrints seem to be its user-friendly interface and ease-of-implementation. However, these features might not be enough of an advantage to warrant a migration from another system (Verma and Kumar, 2018).

Fedora: Fedora is an acronym that stands for Flexible Extensible Digital Object Repository Architecture. It is a modular architecture built on the principle that interoperability and extensibility is best achieved by the integration of data, interfaces and mechanisms (Executable programs) as clearly defined modules (Yakkaldevi, 2014). Fedora is the underlying architecture for a digital repository, and is not a complete management, indexing, discovery and delivery application. It is a java-based so potentially applicable to any platform (eifl.nrt/resources/open). Fedora is a robust, modular, open source repository system for the management and dissemination of digital content. It is especially suited for digital libraries and archives both for access and preservation. It is also used to provide specialized access to very large and complex digital collections of historic and cultural materials as well as scientific data. It seeks to provide leadership and innovation for open source technology projects and solutions that focus on durable, persistent access to digital data.

Greenstone: Greenstone is a suite of software for building and distributing digital library collections

(Witten and Bainbridge, 2003). It is not a digital library but a tool for building digital libraries. It provides a flexible way of organizing information and publishing it on the Internet in the form of a fully-searchable, metadata-driven digital library. Using it, a rich set of different types of collections can be formed that reflect the nature of the source document and metadata available. In extending Greenstone for institutional repository use it aims to develop a software solution that transcends the limitations imposed by current solutions specifically targeted towards institutional repositories, without triggering the high startup costs of shifting to a highly generalized framework.

Digital Commons: Digital Commons is a hosted IR platform licensed by Berkeley Electronic Press (or Bepress) officially launched in 2004 (Castagne, 2013). The setting up of the repository is fully handled by Bepress. Upgrades are performed on a quarterly basis with no downtime. Institutions have access to an administrative back-end that allows configuration of workflow 0settings and user privileges. Workflows are flexible, robust and customizable. Digital Commons supports Qualified Dublin Core, METS, MARC, PREMIS are not supported, though non-DC elements are supported in the interface. Digital Commons is a registered OAI Data Provider ("exposes metadata to the world using the OAI-PMH protocol"), but not Service Provider ("uses the metadata harvested via the OAI-PMH as a basis for building value-added services") (Van de Sompel, Nelson, Lagoze and Warner, 2002). In case of a need for migration, content and metadata can be exported via OAI harvesting, but this requires advanced programming skills and at least one institution has encountered difficulty (Castagne, 2013).

Digital Commons supports Unicode metadata, so non-Western language submissions are possible. Digital Commons will import any file format. Large datasets are problematic as the software is fully Web-based. The user interface is clean and user-friendly, but not as easily customizable as Fedora-based frameworks or EPrints (University at Albany, 2012). It is straightforward for users to submit and manage files, receive email alerts and RSS feeds, as well as monthly email reports of activity/downloads of submissions. Digital Commons uses a built-in Lucene-based search engine, which supports full-text indexing. It is possible to search any field, along with the usual sorting and Boolean support. Cross-institutional searching is a unique feature that provides a single discovery portal for content from all institutions that use Digital Commons. With an attractive and user-friendly interface, reduced technical responsibilities and comprehensive support, Digital Commons is an attractive choice. The built-in peer-reviewed journal publishing system can also create further value (Castagné, 2013).

Reasons Why Academic Libraries should develop Institutional Repository
- To promote the principles of open access by providing opportunities for faculty self-archiving.
- It helps the universities fulfill obligations to make publicly funded or non-profit-funded research available on an open access basis.
- It allows universities to capture digital e-learning courseware so they can expand on existing programs.
- It encourages access and sharing among disciplines and institutions.
- To preserve and disseminates a wide variety of content beyond traditional scholarly articles, including datasets, learning objects, electronic theses and dissertations, audio-visual content and presentations.
- To provide access to unpublished but valuable research of faculty, research staff and students (Velmurugan, 2010).

Barriers to the success of Institutional Repository in Academic Libraries
Many problems make the work of institutional repository managers difficult and frustrating. These include intermittent electricity supplies (Nigeria being a particular offender in this regard), poor Internet connectivity and inadequate broadband capacity, lack of on-line storage capacity as repositories grow in size, lack of training and specialist IT expertise among librarians, and paucity of funds to finance the digitization of earlier materials in print format.

Difficulties in Generating Content: The refusal or unwillingness of some intellectuals found in the academia to share their contents coupled with copyright issues make it difficult for repositories to

achieve their aim. Some members of the academia have different perception of the institutional repository and as such do not want to have anything to do with it. This makes the purpose of knowledge sharing through institutional repository an uphill task. Issues of copyright on the other hand make it difficult for institutional repositories to host and share works or contents of such status (Armstrong, 2014).

Unstable Power Supply and Internet Connectivity:
These two issues earlier mentioned are part of the major hindrances that result in the unavailability of contents when one visits a particular repository website. These play a role in making lost or hidden cultures inaccessible at times (Ezeama, 2013).

Cost: Although there is soft ware that is open source and one that is proprietary. It is also well understood that majority of the institutions go for the open source which is entirely free so that they can customize or scheme it to suit their own specifications. Whether the software is open source or proprietary, there is always a cost to take care of. This cost mostly come in the form of maintenance, and skilled IT person to man it and ensure contents are always available for retrieval. These and other related cost issues such as time spent drafting policies, developing guidelines, publicizing, training, supporting users and creating metadata, specialist IT consultancy are major constraints. These challenges sometimes defeat the main purpose for the establishment of the IR by some institutions (Li & Banach, 2011).

Sustaining Support and Commitment and Lack of Incentives
Most often, it is difficult to sustain continuous support and commitment from the management and academic staff. There is the possibility of academics feeling reluctant to provide even bibliographic details of their scholarly output when there is absence of any incentive.

Rights Management Issues and Policy Issues:
Sometimes researchers are skeptical about infringing publishers' copyright and have little knowledge about their own intellectual property rights. This could make them to resist requests to upload their works online (Pickton & Barwick, 2006)). It is believed that

an IR will only function to its capacity when a mandate is in place to populate it.
Despite the numerous benefits of an IR, there are implications and potential barriers to its success. Bjork (2004) identified the barriers to include legal framework, IT Infrastructure, indexing services and standards, academic reward system and, copyright issues.

Conclusion
Libraries are ideal candidates for initiating and managing an institution's migration to an institutional repository system, and thus fulfill their duty to the institution as stewards of local information. Academic libraries worldwide have embraced the setting up of institutional repositories to capture, preserve and provide access to their research output emanating from their Institutions. Institutional repositories exist to serve the institution and the public at large. They serve that purpose by providing a platform for members of the parent institution both academic and non-academic staff, postgraduate students, researchers and the general public in populating institutional repositories with content. Many academic libraries now have great potential for the establishment of institutional repositories which can preserve, increase the visibility and widen access to research outputs of the universities. The use of institutional repository in academic libraries in recent times have enhanced the availability and accessibility of information resources that support teaching, research and learning in universities.
Institutional repositories are increasingly deployed in academic institutions to manage variety of digital content including educational, research, and archival materials. The place of institutional repository as a relevant tool to enhance scholarly communication can no longer be over-emphasized. This paper has tried to establish the role of academic libraries in providing institutional repositories for not only the institutions but for global information dissemination/retrieval. It has also revealed different software used in setting up institutional repositories.

Recommendations
1. Since academic libraries have started to embrace institutional repositories, they should develop clear and explicit policies on IR

development, management and operational procedures.

2. The library management should expose members of staff in-charge of content upload to trainings in the area of copyright law as this will equip them with knowledge of the type and the aspects of the materials that need to be uploaded, thus, saving the institution from copyright infringement issues.

3. Provision of funds could be improved through internally-generated funds such as payment of fees and government subvention as well as involving other interested stakeholders. A viable institutional repository enhances access to knowledge, knowledge sharing and global visibility.

4. Institutional repository policy is needed for any meaning engagement of the academic community both for building content and maintenance of institutional repository. Such a policy specifies both the modalities for submission of content as well as management of the institutional repository.

5. The institution should establish a reward system for academic staff who show serious commitment in the submission of their works to the institutional repositories. This could be carried out by celebrating and awarding research grant to members of staff whose list of publications during appraisal time tallies with the contents available for such staff on the institutional repositories.

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