Towards Content Development of Institutional Digital Repository

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Abstract

The growth in Information and Communication Technology has lead to the emergence of Institutional Digital Repository, a digital archive for the preservation and dissemination of institutional research outputs. Institutional Digital Repositories make possible global dissemination of research outputs through the use of the Internet. This paper discusses the concept of IDR, types, content, content development and highlighted the benefits of submitting electronic research work to IDR stakeholder to store, preserve and disseminate research work generated within an institution.

Keywords: Institutional digital repository, Dissemination, Preservation, digital asset and research works.

Introduction

Institutions research results and other scholarly or intellectual contents most especially, journals, conference papers, postgraduate seminar papers, projects, thesis and dissertations are relevant and important to the advancement of the academic community and the public in general. Proper attention need to be given to these intellectual assets for survival. As research reports and other academic works grow, the need for their maintenance and long-term viability also grows.

In an analogue (paper) environment, there are common problems that arise from limited copies of information resources such as deterioration and contention. Due to few copies of information resources which are in use by many users, the resources become liable to deterioration and contention.

One of the goals for researchers making available their output in analog form is to have a wider coverage and reach out to target people. Many factors including physical limitation to archives have these resources un-accessible and limiting the raise of institutions profile and prestige. Institutional Digital Repository (IDR) is a set of services for storing and making available digital research materials (Clifford: 2003). It helps institution to develop coherent and coordinated approaches to the capture, identification, storage and retrieval of their intellectual assets. This enhances opportunities for efficient use of existing research, increase opportunities for

improved learning experiences and encourage collaboration within and between different disciplines and groups.

IDR can also be refer to as digital system where digital contents and assets are stored and maintained for existing and future scholars and researchers to have access to the intellectual contents. The institutional digital repository gives a means of capturing reviewed books, journal articles, seminar papers, projects, thesis, technical reports, dissertations, etc. for access by the organisation, scholars, students and researchers globally through the use of Information Communication Technology (ICT) and other electronic methods of access.

Institutional Digital Repository

Institutional Digital Repository (IDR) is emerging technology for knowledge sharing and management in academic and research institutions which can help facilitate the improvement of the scholarly communication system. The IDR helps to collect, preserve, index and distribute knowledge research material and scholarly publications of faculties, researcher and students in any academic or research institute. A typical IDR contains articles, research papers, theses and dissertations, published and unpublished research materials, peer reviewed works, etc., depending upon the purpose for which the repository was created.

One of the main aims of digital technological strategy is to create a digital future to enhance all aspects of our live most especially in the institutions were research reports and academic works grow. In the mid-twentieth century, 'Repository' had been used to signify a collection of items including documents and other types of objects. Typically, these materials were primary resource materials such as original documents rather than copies or secondary research materials.

Institutional Digital Repository in different facet such as:

- ✓ *"A collection of digital assets and/or metadata accessible via a network without prior knowledge of the digital repository's structure....A repository is managed by a data provider to expose metadata to harvesters."* (www.openachives.com).
- ✓ "A university-based institutional repository as a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members" (Clifford: 2003).

From the above definitions, it is obvious that Digital Repository is a digital system where digital contents such as books, articles, seminar papers, projects, thesis, technical reports, dissertations and any other digital intellectual assets are stored and maintained for tomorrow's Scholars, Researchers and for any other

user that has conceptual thoughts behind the intellectual content. The location of the storage may not be physically visible to those accessing the content of the repository system and the storage may be in different location supported by different technologies. This means that there must be rules guiding the organisation and accessibility of the contents stored in the repository system. Tentatively, IDR can be located any where, on any medium and supported by information communication technology along with its overall rules.

On the other hand, the definition of Institutional Digital Repository highlighted an issue of an organisation's responsibility to maintain and give accessibility right to the digital repository system. The digital repository can be located and used anywhere. The essential control to ensure continuity of services, the rules and services for the repository system are the sole responsibility of the organisation that owns the repository system. Clifford A. Lynch (2003) remarked that an organizational commitment to the stewardship of these digital materials is a must that should include long-term preservation, organization and access or distribution. The operational responsibility for these services should be wisely distributed across organizational units at different universities; the institutional repository should represent collaboration among librarians, information technologists, archives and records mangers, faculty, and university administrators and policymakers.

The above definitions show that when an institutional repository is implemented, a new model of Scholar intellectual communication, Publication, preservation and access or distribution will be realised.

Types of Digital Repositories

Depending on the goals established by each institution, an institutional repository could contain any research work product generated by the institution's students, faculty, non-faculty researchers, and staff. This material might include student electronic portfolios, classroom teaching materials, the institution's annual reports, video recordings, computer programs, data sets, photographs, and art works—virtually any digital material that the institution wishes to preserve.

Institutional Digital Repository has been identified in five *different ways (Kylie et al: 2007)*:

1. **Institutional Repository** – A repository established by a particular university or other research institution is known as an institutional repository. Is to collect and preserve – in digital form – the intellectual output on an institution.

2. **Departmental Repository** - A repository established for the use of a particular academic department or laboratory. However, the term institutional repository is also used to refer to its.
3. **Subject Repository** – A repository established to collect and preserve materials in a particular subject area. It they can be organized by a government, a government department/agency or a research institution, or be autonomous.
4. **National Repository** – A repository for general use by scholars working in a particular country. However, such repositories can also be organized on a more local basis.
5. **Material Repository** – A repository can also be intended for a particular type of material, such as a these repository or a newspaper repository. The general idea is to store, manage, and preserve a university's born-digital and digitized assets, making them freely available via the internet.

The concepts of institutional digital repositories is a technological that support the goal of transforming scholarly communication by making it easier to preserve, make available for researcher to find and share the research works.

Repository Contents

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A mature and fully realized institutional repository should contain the intellectual works of faculty and students both research and teaching materials and also documentation of the activities of the institution itself in the form of records of events and performance and of the ongoing intellectual life of the institution (Rankin:2005). It should also house experimental and observational data captured by members of the institution that support their scholarly activities. It is observed that there is great variety in the types of materials being collected in Institutional repositories around the world, ranging from books, theses, articles, primary

data, audio-visual objects, course materials, or a variety of other types (Hixson: 2005).

Institutional digital repository provides a method for capturing and maintaining today's electronic detritus so that tomorrow's scholars can understand the thinking behind the published record. In addition, it provides a way for an institution to capture the more polished electronic works such as books, articles, dissertations, technical reports, etc. as well as guarantee access by the organization, researchers worldwide and the public to balance out the loss of this information to the private sector under restrictive licensing agreements (Nancy and Susan: 2005).

Institutional Digital Repository Services

There are many services that may be served by Institutional Repositories. Some are currently supported by available technologies, or are being developed in the near term, and still others that are merely in the 'identified needs' stage.

The basic services an institution might choose to offer in her Institutional Digital Repository are free or fee-Based Service. The services offered depend on how the IDR and the needs of the community are structured. Fees may be charged the communities that contract with the library to provide additional services (Mary et al: 2005).

Each institutional repository service organizes content in a way to suit its university's unique culture and academic organizations. Many universities organize their contents according to academic research centres or departments. However, a university may choose to organize its content using "hybrid communities" in the following ways:

- ✓ *Formal Community*: Consists of departments, research centers, and groups already existing. Established submission guidelines and workflow.
- ✓ *Subject Community*: where all academics can submit their articles/papers personally or by proxy. While the Library staff review the content before going online.
- ✓ *Community of Interest*: An ad hoc group that cuts cross depts., or a Scholar driven-membership not limited by academic choice.

Electronic delivery of digital content accessed from a digital repository system solves a number of problems such as contention for copies, circulation control, physical attendance at the archives and damage of materials (Wright: 2007).

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- ✓ *Contention for copies*: elimination of the 'somebody already has it' problem leading to the need to take steps to avoid that problem such as by making multiple viewing copies.

- ✓ Circulation *control*: checking out, delivering, and ensuring the return of physical media. However elimination of physical circulation could result in elimination of all knowledge of who has accessed material. Thus, a new sort of circulation control is a requirement for a digital repository.
- ✓ *Physical attendance at the archive*: electronic delivery can be anywhere (given adequate bandwidth) and people will no longer present themselves within the walls of collections to have access to materials. Electronic delivery removes *all* the physical, technical and logistical barriers to *unlimited* access to collections.
- ✓ *Damage of material*: Essentially, electronic delivery makes multiple viewing copies of collections to different people at the same time on demand yet living the original document unaffected.

Content Development for IDRs

In a university setting, an IDR may provide a place for faculty work, student theses and dissertations, e-journals, datasets and so on. Whatever is the focus of a university IDR, it must be filled with scholarly work of enduring value that is searched and cited. The IDR service appears to be quite attractive and compelling to institutions. IDRs provide an institution with a mechanism to showcase its scholarly output, centralize and introduce efficiencies to the stewardship of digital documents of value, and respond proactively to the escalating crisis in scholarly communication.

The Libraries in collaboration with faculties, departments and research centres, certainly have to be complacent in their endeavors to develop the content of their IDR. On the process of identifying and acquiring valuable digital repository content, Nancy John, proposed surveying departmental and faculty web sites; talking with academic and administrative departments about their output and publications; reading campus newsletters to learn about conferences, presentations, and lectures that might merit inclusion in the archive; and reviewing print publications and contacting editors to see if they are willing to archive the digital versions from which almost all print publications originate today (Nancy and Susan: 2005).

One of the primary services that Institutional Repository can provide is to acquire materials that would otherwise have been lost, have been inadequately archived and indexed, or were known only to a limited audience. Such materials include are student class papers, terminal projects, honors papers, as well as formal theses and dissertations. They often languished

in faculty offices (or now on departmental web sites) before being lost or discarded. Sometimes they are collected by university archives where they are seldom cataloged such may be difficult to discover and gain access to.

Benefits of submitting electronic research work to IDR stakeholders

The great advantage of repositories is that they help institutions to develop coherent and coordinated approaches to the capture, identification, storage and retrieval of their intellectual assets. These intellectual assets may go beyond normal publishing regimes to include audiovisual objects, datasets, presentations, learning materials and research works.

The rationale for universities and colleges implementing institutional repositories rests on two interrelated propositions: one that supports a broad, pan-institutional effort and another that offers direct and immediate benefits to each institution that implements a repository (Crow: 2002).

Stephen Pinfield (2006), highlighted the benefits of IDR to such beneficiaries as researcher, the institution, and the research community.

- ✓ For the researcher, the benefits come in wide dissemination, rapid dissemination, ease of access, cross-searchable and valued added service.
- ✓ *For the institution:* it comes in raising profile and prestige of institution, managing institutional information assets, accreditation/performance management and long-term cost savings. It also helps institution to develop coherent and coordinated approaches to the capture, identification, storage and retrieval of their intellectual assets. This enhances opportunities for efficient use of existing research, increase opportunities for improved learning experiences and encourage collaboration within and between different disciplines and groups.
- ✓ *For the faculty and students*: the advantages of free sharing of information, encouraging collaboration and the widespread communication of institutional education and research activity. It emphasized not only the benefits to universities, but also the opportunity to change the publishing system.

These observations showed that IDRs offer a means by which institutions can break the cycle of individual silos of

digital content by establishing a common store with access for all. Repositories can ensure the availability of content to improve the quality of the learning experience and cater for different learning styles.

Digital repositories of an institution's research output are also important for two complementary reasons, as noted by Scholarly Publishing and Academic Resources Coalition (SPARC). These are:

1. As a natural extension of the academic institution's responsibility as a generator of primary research seeking to preserve and leverage its constituents' intellectual assets.
2. As one major component in the evolving structure of scholarly communication (*JISC*: 2005).

It is becoming increasingly important for institutions to capture research funded by public or charitable organisations that require open publication as part of the funding agreement. The need to capture digital e-learning courseware is essential to ensure that the institution continues to maintain the right to use and build on educational programmes produced for local courses.

The benefits of submitting electronic research work to IDR stakeholders are as follows:

1. *Increase research impact*

Placing copies of research outputs in Institutional digital repository lowers the barriers to access research works, and cost of access by:

i. Making it easier for scholars to disseminate their work, both in traditional forms such as electronic journal articles and new forms such as virtual scholarly monographs
ii. Encouraging exploration of new forms of scholarly communication that take advantage of the new capabilities offered by the digital medium for the exposure, discovery and re-use of distributed digital collections, especially across disciplines
iii. Relieving researchers of the time-consuming burdens of exercising stewardship over digital research content maintaining personal webs sites to distribute that content, and ensuring the long term preservation of content held only in digital form.

2. *Preserve digital research outputs*

For universities, IDRs "help institutions to develop coherent and coordinated approaches to the capture, identification, storage and retrieval of their intellectual assets. It also provide a window on research knowledge and a key part of the content strategy to preserve, share and manage digital objects.

3. Harness institutional efficiency

The New Zealand report stated that "Institutions have recognised the potential to link the acquisition of research outputs and their descriptive metadata with existing research management processes, enabling the institutions to capture research output data once and re-use these for multiple purposes" (Rankin: 2007). This indicated the need to make their work available and visible to others within and outside the institution, while managing their digital rights and maintaining the integrity of their work.

4. Authors gain visibility

Communicating research results to their peers is the main reason scholars publish their work. That is, the goal of publishing research is to make an impact on the field.

SPARC observed that under the current system of scholarly communication, much of the intellectual output and value of an institution's intellectual property is diffused through thousands of scholarly journals. While faculty publication in these journals reflects positively on the host university, an institutional repository concentrates the intellectual product created by a university's researchers, making it easier to demonstrate its scientific, social and financial value (JISC: 2005). Authors expect an institutional research repository to allow them broadcast the results of their research more widely and quickly. Once an author deposits a research output in an institutional research repository, it becomes possible to deliver usage information at minimal cost. This increased visibility reflects a high quality of scholarship.

5. Information seekers find research more easily

One of the benefits of institutional repositories is that they enable the free sharing of information, encourage collaboration and the widespread communication of institutional education and research activity. As the volume of published research grows, so the amounts of effort information seekers are willing to expend to locate relevant publications diminishes. Placing properly-described copies of research outputs in an institutional repository creates new

discovery pathways, including search engines, resource discovery services, and discipline portals.

6. *Institutions raise their research profile*

Linking the acquisition of research outputs with existing research management processes, enable them to capture research output data once and re-use these for multiple purposes. One of the measures used in international research rankings is a publication and citation rating—using citation as a convenient surrogate for research impact and quality. A number of converging trends are leading to the institution's research repository as an increasingly important way of raising research profile.

Conclusion

It has been observed that research outputs are solutions to identified issues and these outputs are to be given wide circulation for the purpose of addressing such similar issues. Unfortunately, these research outputs are kept in departmental offices and institutional libraries. The implementation of an Institutional Digital Repository is to provide viable alternative system for making information easily available for use globally. The paper pinpoints the benefit of submitting research work to IDR stakeholder to store, curate, disseminate and preserve these research works.

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