TOWARDS ESTABLISHMENT AND MANAGEMENT OF INSTITUTIONAL DIGITAL REPOSITORY

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Abstract

The paper revisit the essence of Institutional Digital Repository (IDR) and issues on its establishment, structure, content, infrastructure and facilities needed to manage and sustain its operations. It concludes that Public and Private Institutions should join the race for the establishment of IDR at local, national and international levels.

Introduction

It is customary that individuals, families, societies, etc keep and preserve in a safe place private and official date, records and documents on important issues found to be vital and necessary for access and use as the need arises. Similarly, it is also customary that individuals, institutions, organisations, societies, communities, families, governments and their agencies as well as nations endeavour to generate, acquire, preserve, and maintain a collection of data, records and documents on topical issues; activities; events; transactions; plans and strategies; bilateral and multilateral agreements; etc found to be related to the interests, goals, aspirations and needs of the proprietor/originator for easy access and use at

any time as the need arises. Such data and documents could be both generated by the originator/proprietor and/or acquired from elsewhere so long as they are conceived to be relevant, vital, and important to the course of the owner. The by-product of this endeavour is the establishment, development and maintenance of private, public or any type of repository to house or preserve these very important and active collections of records, documents and other sources of information for easy retrieval, access and use.

By and large, it could be said that a repository is a place, warehouse, system or device where important and strategic records, documents and other types of information resources and sources are housed, deposited, and preserved for immediate and future use, consultation and reference. Unlike the Library, information resources which contain varieties of information and sources especially for large customers, it is a collection of carefully selected records, documents and other information resources generated and or acquired by the originator/proprietor in pursuance of achieving desired goals and aspiration, and for consultation by specifically defined target audience. Similarly, unlike an archive which is mostly dedicated to housing or preserving inactive records, documents and other information resources and sources, depending upon the policy establishing it, a repository mostly contains active documents, records and other sources of

information or a combination of active and inactive records, documents and sources of information for preservation and consultation. In the contemporary scene, the content of a typical repository include printed and non-printed records, documents as well as manuscripts and electronic information resources (e-resources).

Institutional Digital Repository

Simply put, an Institutional Repository (IR) is a repository established, owned, developed and managed by public or private institution or organisation, and/or its Surogate. Whereas, an Institutional Digital Repository (IDR) is that institutional repository (IR) in which digital contents are deposited and preserved in digital format for use. Unlike the covential IR in which hard copied records, documents and other sources of information are mostly deposited and preserved, the IDR mostly contain digitalized information resources such as e-records, e-documents and other e-information resources. However, both the IRs and IDRs do contain in-house generated as well as acquired data, records, documents and other information resources typical of their respective domain. While Clifford (2003) sees IR as essential infrastructure for scholarship in the digital age, John (2005) sees IDR as a set of services for storing and making available digital research materials created by an institution and its community a digital collection of the

community's research outputs. It is also conceived as a collection of digital assets and/or metadada accessible via a network without prior knowledge of digital depository's structure (www.openarchives.org).

The emergence of IDR is a direct response to the dictates of globalization and the contemporary digital age where Information and Communication Technology (ICT) has broken barriers to access and use of information regardless of its location and time of access. Thus, an IDR linked to a network environment and especially hosted on the Internet could easily be accessed and utilized regardless of time of access and location of the user provided the permission and authority to do so is granted by the depositor, repository as the relevant authority.

The Essence of IDR

The essence of establishing, developing and managing IRs and particularly the IDRs is not only to generate, acquire, preserve and manage strategic information resources and records, but to also provide a wider access and use of them. IRs and IDRs serve more as both research and reference materials source to the needy esperially in academic environment. The unique nature of the contents of IRs and IDRs makes them veritable sources of information about the institutions that established them, and more particularly about

their activities and programmes. McCarmick (2006) is of the view that as soon as all research authors publicly self-archive their referenced and unreferenced papers publicly online, the research literature will be free for all.

Efforts to make the content of IRs and particularly the IDRs public is in line with the gospel preached under the Open Access Initiative (Budapest: 2001) which main mission is to facilitate easy availability, access, distribution and utilisation of scholarly communication freely as a viable option and solution to the problems associated with inaccessibility to vital research and other information resources especially by the developing economics due to their unprogressive economic stand and poor infrastructure. It is observed that the objective of Open Access is to ensure free access to knowledge at no cost to the user. The Berlin declaration on Open Access (2003) elucidate that access simply implies that authors and rights owners should allow all users free and irrevocable worldwide right of access and permission to copy, use, distribute, transmit and display a work publicly, make and distribute derivative works as well as any digital media for any objective purpose subject to proper attribution of authorship as well as the right to move a limited number of printed copies for their personal use. It is envisaged that IDRs will serve to transform scholarly works and communication for easy access by researchers, scholars and others so that they can easily identify, access and share

research reports/outputs as well as other intellectual works and discourse freely and unrestricted.

Essentially, it could be said that the availability of IDRs in public and private institutions and organisations as well as in government establishments will enhance the access and preservation of the vital information on their activities, programmes and achievements, popularize the relevant authors and contributors as well as increase their impact on their immediate and remote communities and environment. Also, it will further stimulates more research activities that would be beneficial to their host communities and beyond.

An IDR can stand the test of time when it is indeed institutionally base with a majority of its collections scholarly based; its content easy to access with less search constraints; the development and management of its content is perpetual without predetermined end, and its operating system interoperable and open with minimal or no access stress.

Establishment and Structure of IDR

It is important that at the on set, an institution should decide on what type of IDR it would establish. A decision could be made to establish a central IDR where all foreseeable relevant digitized data, records, documents and other information resources generated by its organs and or acquired

through outsourcing, purchase, etc are systematically organised, processed and preserved for use. A decision could also be taken on establishing Departmental or Divisional Repository (DDR) to reflect the electronic collections of the various divisions or departments of an institution or establishment.

In educational institutions such as University for instance, there could be departmental, faculty or administrative complex repositories for each of the University's academic/administrative complexes. On the other hand, there could be subject (SDR) or material (MDR) repository which content solely the electronic information resources on the respective core subject areas or disciplines to be served.

In Ahmadu Bello University, Zaria, for example, the Department of Library and Information Science, has established a departmental repository where it preserves records on theses and dissertations submitted by its students and also papers/publications of its staff including their curriculum vitae. On the other hand, the main library of the University, Kashim Ibrahim Library, has established a repository for the theses and dissertations submitted for higher degrees of the University. More than 2000 records have already been digitized and entered in the database. Arrangement has been concluded to expand the scope of its repository coverage to include papers

and publications from the University staff and the research outputs from the various organs of the University as well as outsourced vital documents and information resources found relevant and useful for teaching and research purposes. It is also planned that both the repositories in the two organs of the University will not only be linked to their respective LANs but also hosted on their respective web pages and the website of the University.

In the same vain, the Nigeria Institute of Management (NIM) has established its IDR which contains over 2 million digital records on its members, programmes, financial and administrative records. It is also planned that the IDR will be hosted on its website. However, in establishing a National Digital Repository (NDR) provision should be made for the establishment of branch or zonal digital repositories (BDR/ZDR) to enhance access and retrieval, better sectoral coverage, and impact deposition, as well as ease of management and sustenance.

The guiding principle in the establishment of any type of IDR is ease of access and retrieval, convenience of use, availability of required infrastructure, staff and staffing, financial and material provision, and the institution's areas of interest and needs well as its capacity and ability to support and sustain the system perpetually. An IDR project requires

adequate funds and capable staff as well as material support at all times in order to succeed and stand the test of time. Infact, it is time consuming and money goozling but very important and necessary venture.

The organizational structure of IDR may vary from institution to institution. It could be structured to reflect the different types or categories of users, nature of collection, type of services provided, type of activities/ programmes engaged by the institution, and type of inter-institutional relations in order to contain and reflect the digital information resources. Essentially, which ever style of organizational structure is adopted for an IDR, it should be premised on convenience of use and access; technical support; geographical proximity of database; availability of staff and staff ICT knowledge, skill, capacity and competence; availability of requisite infrastructure and facilities; interoperability of the systems; systems security; systems management plans and support; access and use policy; the metadata adopted to describe the information resources and sources deposited and preserved in the repository; as well as the type and nature of IDR infrastructure and facilities available.

The Content of IDR

There is no fast rule as to the nature, size and constituent of the content of IDR. More often than not, it is dictated by the objectives establishing the IDR; the mission, activities and programmes of the parent institution; and the type and category of users expected to utilise the system and for what purposes. By and large, the content of IDR should include both the internally generated information, digital records, documents and other information sources and resources (local content), and the acquired information resources and sources (outsourced content), through purchase, donation, gift and other sources.

For instance, the IDR in an academic institution should have its content to also include all digitized intellectual papers and publications such as seminar, symposium, conference and workshop papers; lecture notes; research reports submitted for academic certificates such as projects, theses and dissertations; independent or grouped research reports; commissioned and non-commissioned research reports; news bulletin; intellectual communications; publications/papers on special lectures, speeches and events such as convocation, inaugural lectures, commissioned events, and public lectures; papers/publications on other intellectual activities in the

institution; documents on strategic plans and academic briefs; examination results; minutes of meetings, etc. Peer reviewed journal articles, conference proceedings; etc.

On the other hand, the content of the IDR in business establishments may include digitized papers and publications on its programmes of activities and accomplishments; financial/business transactions; staff and customers records; audited account records; business agreements; calendar of events; strategic plans; financial policies; important correspondences; minutes of meetings; manuals; customer relations; community services; inventories; technical reports; money market/stock exchange; financial records; advertisements; annual reports; receipts; vouchers; financial/company directories; etc.

Similarly, the content of the IDR in government establishments and agencies may include digitised documents/publications on important correspondences; policies; laws; staff records, hanzards; budgets; minutes of meetings; Committee reports; economic affairs; manuals; technical reports; development plans; programmes and events; treaties, bilateral and multilateral agreements; research reports; conflicts and conflict resolution; cultural affairs; security reports; agencies/sectoral reports; annual reviews; receipts; vouchers, directories, etc. Thus, what is worth noting is the fact

that an IDR should contain both local (internally generated) and external (acquired/outsourced) information resources and sources conceived to be vital, crucial and relevant and valuable.

From the above exposition it could be said that the nature, characteristics and coverage of the content of a typical IDR may be limited only by its capacity to accommodate, preserve, manage and make available all relevant data records, documents and other information resources generated as a reflection of its local content and/or acquired information resources and records as outsourced content complementary to the institution's local content in digital format. It has been observed by Caroll (2005) that there is great variety in the types of materials being collected in IRs around the world, ranging from books, theses, articles, primary data, Audio Visual (A/V) objects, course materials, or a variety of other types.

Ideally, the coverage of the content of IDRs should include both internally generated data, records, documents and other information resources (local content) and acquired publications (outsourced content) in digital format so that they can properly and effectively provide all types of e-services and e-publications within their reach and capacity. Such e-publications may include e-journals, e-reports, e-bulletins, e-

monographs, CDs and DVDs, etc. However, a typical IDR services may include print-on-demand publications; print run of CD and DVD based documents; on-demand document scan; document screen view/show; multimedia services provision; screen shot on-demand; document uploading and downloading; electronic document search; e-database search; etc.

IDR Infrastructure and Facilities

The IDR, like the digital library and archives, provides a better opportunity to access its content far and wide without limitation to the time of access location of users and the number of users accessing it on real time regime. The versatility of the system made it possible to eliminate or reduce drastically problems associated with speed of access, information delivery and response to queries; tracking of usage and levels of patronage; physical appearance of the users at site, adoption/ simulation of conventional circulation controls; inadequacy of copies of records and documents needed for consultation by variety of users especially on real time schedule; and possibility of easy threats to the security and survival of the collection.

The infrastructure and facilities needed to ensure proper preservation; operations, management, sustenance and use of IDR include availability of:

- Robust computer server: and external hard disk.
- Network environments such as LAN, WAN and Intranet;
- Internet connectivity;
- IDR website or webpage and URL;
- Network printer and Scanner;
- ICT Skilled, experienced and competent staff;
- Computer consumables;
- Dedicated computer software platforms such as: DS pace, (http://www.dispace.org) , E-prints (http://www.eprints.org), Flexible Extensible Digital Object and Repository Architecture (FEDORA) (http://www.fedora.org), Greenstone (http://www.greenstone.org) and Lots of Copies Keeps Stuff Safe (LOCKSS) (Crow: 2004);
- Policy on IDR access; use; items deposition and preservation; system maintenance and sustenance; content development and management; systems operations; staffing; services provision; and standards. An example of a typical IDR ISO standard is the Open Archival information system (OAIS) described by Peter (2007).
- Document on IDR software platform, and support agreement/arrangement such as by local/internal support; centralized/consortium support; vendor support (for a fee), etc.

- Certified bibliographic description/details or Certified Dublin Core Metadata for identification and location of the digitized materials such as: Title of article/material; Creator(s)/Author(s); Subject matter; Description of content of material; Publisher; Contributor to the content of material; Date of material creation, modification and availability; Type, nature or structure and size of material's appearance; format of material appearance; Identifier such as the ISBN or ISSN; Rights of use, access, intellectual property and copyright; Statement on peer review, full text and abstract; and status of materials such being in press, published or unpublished;
- IDR management Committee which should also function as Open Archives Initiative (OAI) Committee to ensure the promotion of systems interoperability between digital repositories and application of the OAI Metadata Harvesting Protocol for metadata fields employed or contained in unqualified Dublin Core Metadata Initiative (DCMI) to encourage wide spread adoption of interoperable metadata standards.
- System capacity for interoperability with multiple search engines and discovery tools for end users to search different dabases and still locate materials in the repository.

- User support Administrator/Manager and support staff for systematic monitoring and evaluation of end users' needs, system update and upgrade, tracking of system workflow; systems; control, security, operations and use; service delivery, collaboration among authors or contributors and dissemination of their works; organization and harmonization of IDR content as well as IDR content development, management and policies implementation;
- Electricity supply and alterative source of energy supply, etc.
- National Information Infrastructure (NII) which include Telecommunication, web technology skills, web server, ICT skilled staff, high-speed broadband technologies, etc.

Concluding Remarks

It is an established fact that libraries and information centres alone may not easily contain some vital data, documents, records and other information resources as well as information needed for use especially by the policy makers of institutions and organization for use by specialized set of patrons and purposes. This is even more pertinent when the use of internally generated vital information and documents (local content) and strategic information on such institution or

organization is needed preserve inactive records, documents and other information resources and sources, may not satisfy the urge for active current information. The need for the establishment, development, management and sustenance of IR and more particularly on the IDR which serve to support and complement libraries and achieves in the provision of active and strategic information on institutions or organizations for use far and wide in defined manner and more especially on real time basis need no emphasis. The available option left for progressive contemporary institutions, organizations, governments, society's communities, and association is to join the race in the establishment of IDR. Such challenges are already being picked up by some institutions in Nigeria which include the Nigerian Institute of Management (NIM), Kashim Ibrahim Library, ABU Zaria and the Department of Library and Information Science ABU, Zaria. Effort should also be made to join the race for inclusion in the International Digital Repository project in the non distant future.

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