

# **INSTITUTIONAL POLICY AND MANAGEMENT OF INSTITUTIONAL REPOSITORIES IN NIGERIAN UNIVERSITIES**

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## **Abstract**

The development of institutional repositories in libraries has come as a blessing to universities in Africa. It is envisaged that it will solve problems of low visibility of African content on the World Wide Web (Internet), greater speed of dissemination of knowledge from Africa, increased citation for authors whose works are published in the repository and improved ranking for the universities amongst others. However, evidence from past studies has revealed some doubts about the effectiveness of institutional policies in facilitating the growth and development of academic projects in African universities. The study which is a conceptual one is designed to review the development of IR in Africa with emphasis on Nigerian environment, determine what should constitute an institutional policy, and situate this within the framework of conditions for registration of IR by DOAR and ROAR. The study noted that between June 2011 and December 2014 Africa has dropped from 4% to 3% of world registered IRs. In Nigeria the study pointed out that 106 of 129 registered universities have websites but only eight have registered IR and out of this number only one has policy in some aspects of the operation. It was recommended that government interventions are crucial in this regard as this would serve as watch dog in monitoring/ensuring strict adherence to the implementation of the projects.

## **Introduction**

One major objective of World Summit on the Information Society (WSIS) is the commitment to building a global society that is people centred, inclusive and development oriented, a society where everyone can create, access, utilize and share information and knowledge. This is aimed at enabling individuals and communities achieve their full potential in promoting sustainable development. In a similar resolution UNESCO had noted that information, the communicable form of knowledge has come to be recognized as one of the main prerequisite of economic and social development. It could therefore be seen from the foregoing that the precursor for a balanced and sustainable development in a globalized world is knowledge and its surrogate, information. Development has been defined as changes in social advancement which meets the needs of the present without compromising the ability

of the future generations to survive and flourish (Imo & Igbo: 2009). This implies that development using elementary physics principle is not a vector quantity, which has both size and direction. It is rather a scalar quantity which has size but no direction. The direction is given by the problem a society sets out its knowledge and resources to resolve.

Universities and learned societies are the epicentre of knowledge generation and dissemination which are usually acquired through a complex social and cultural networks hard for the competitor to understand, imitate or internalize (Alfa Network Babel Library: 2007). However this knowledge is tailored at solving problems based on community needs and aspirations. The ability of the university libraries and these learned societies to sieve these community knowledge facets and integrate them into international fora determines the contribution of these institutions to global societal development. The North-South divide which is caused by clear imbalance in development between the Northern and Southern hemisphere arises from the fact that the North has contributed more to world knowledge. This has made the south to always copy (import) or depend on the North for its own progress. The basic question that should agitate the minds of professionals in the south is, why has not the countries of the south made much impact with their contributions to world development in spite of the fact that they have operated in the same university (knowledge and research) environment that propelled these countries (North) for onwads of hundred years? Why are African Scientist recognized and counted as having contributed to global knowledge mostly when they operate within the knowledge environment of the North? The simplistic answer to these questions is visibility and funding.

Scholarly communication is a complex process involving a six part model (Hills: 1983). These parts include the scholar, learned society, the publisher, the product, the librarian and the influence of the new communication technologies. The publisher is the agent of dissemination and visibility and in most instances controls the activities of the gate keepers (i.e. learned societies). Between the publishers and the gatekeeper lies the power to determine what should be exposed or released for public consumption. Ezema (2011) pointed out that much of the research publications generated in Africa are highly underutilized in the global scholarly community. This is apparently because scholarly publications from the continent lack global visibility. Ezema went on to argue that most journals published in Africa are neither indexed nor abstracted in international abstracting and indexing agencies. Many scholars have similarly noted that research outputs in form of theses and dissertations are completed and buried in individual university libraries to the extent that it is only very few researchers in the university community that are aware of their existence.

African institutions and learned societies have been given opportunity with the development of internet under the information society era to redeem itself and contribute as equals to global scholarly development. Wong (n.d.) noted that the

internet first gained popularity in universities as a tool for research and education. This invention has leveraged the visibility given to learning and research in universities bringing them to global attention through their websites (WWW). This is made possible through the development of virtual libraries, digitization and institutional repositories. With the establishment of African Virtual Library and Information Network (AVLIN) in the opening decade of the 21<sup>st</sup> century, Economic Commission for Africa (ECA) planned to facilitate the development of digital libraries in African Universities and research institutions. The broad objective of AVLIN was to help bridge the digital divide between Africa and the developed world as well as to bring about effective information and knowledge networking among African knowledge-based institutions, especially universities and research centers (ECA: 2003).

As early as 2004 there was a pilot workshop on virtual libraries for Nigerian Universities Sponsored by AVLIN. The proceedings of the workshop centred on issues concerned with digitization, virtual library and Greenstone software for running the project. Institutional repositories are offshoots of the virtual library and digitization projects in the affected institutions. Virtual library, digital library and institutional repository could contextually be assumed to be tailored towards the same goal. They are means of managing and making accessible electronic information resources. Virtual library is the neural invisible lines of communication connecting the libraries on a network; the digital library is bits of data and information which make up the information content of the library while the IR is the structured information content which are contained in the individual libraries that are connected in the same virtual library network. We may be looking at a tripod of information service, the conduit, the content and content player. It is the versatility and dexterity of the content player that provides the access to the content user to navigate the highly standardized conduit network which in this case is epitomized by the internet. Bossaller & Atiso (2015) noted this fact in their work “Sharing science: The state of institutional repositories in Ghana.

Library Automation which is the bedrock of these processes started in Nigeria over three decades ago. With consistency in planning and management, Nigerian Universities will have gone very far in issues of virtual library, digitization and IR building. However the contrary is the case. This is caused by lack of consistent management decisions to stir the course of these projects. This consistent management decisions is what dovetails into institutional policy. Broadly Definitions.net (n.d.) defined policy as a course or method of action selected, usually by an organization, institution, university, society etc., from among alternatives to guide and determine, present and future decisions and positions on public matters. The problem of institutional repository development in Africa is aptly described by Ubogu & Pickover (2011) thus:

Throughout Africa projects are also under way to create virtual libraries and archives and to build a digital heritage continuum in Africa.... However current digitization efforts within most regions of Africa are fragmented, with little national or regional co-ordination... There are no national or regional initiatives to develop strategies and policies or coherent national digital libraries and archives that would provide integrated access to the digitized collections of libraries...

We believe that until the issue of institutional policy guiding these projects are resolved and given serious attention IR development will continue to have epileptic development. This is the backdrop upon which this work is anchored.

### **The problem**

Information and Communication Technologies (ICT) has necessitated a new regime in knowledge generation and distribution. This regime is anchored on virtual library, digitization and institutional repository (IR) which makes available electronic information resources for the management of libraries. In managing electronic information resources (EIR) libraries no longer think of self sustenance, rather collaborative relationships are emphasized. Collaborative activities among libraries include shared resources, improved flow of activities; divided responsibilities, co-planning, co-implementation and co-evaluation. The importance of this is heightened by the fact that global knowledge is now the aggregate knowledge produced within a social environment which could easily be instantaneously communicated across the globe using ICT infrastructures (Imo & Igbo: 2011).

This working situation for libraries requires careful and painstaking planning complemented with consistent management decisions and project implementation. Sutton (1999) sees policy making as a problem solving process which is rational, balanced and analytical, pointing out that within a policy framework decisions are made in a series of sequential phases, starting with the identification of a problem or issue and ending with a set of activities to solve or deal with it. Research on IR in African institutions has shown lack of policy as one of the detrimental factors {Ubogu & Pickover (2011), Diso (2009) and Kujenga & DeVries (2011)}. The Nigerian situation is not different. This study which is aimed at examining the effect of institutional policy on the management of IR in Nigerian university Libraries is necessary. The study is designed to review the development of IR in African with emphasis on Nigerian environment, determine what should constitute an institutional policy, and situate this within the framework of conditions for registration of IR by DOAR and ROAR. The study will attempt to proffer the way forward.

### **Institutional Repository (IR) and Registration Requirement**

Sally (2006) defined IR as an open access searchable digital archives of materials emanating from an institution, usually (but not always) available in their entirety. Ogbomo & Muokebe (2013) noted that IR is a type of digital library established by an institution, populated by the staff, researchers, students and other members of the institution and to be consulted by both members of the university and the outside world. The Alfa Network Babel Library (2007), defined it as an information system that collects, preserves, disseminates and provides access to the intellectual and academic output of the university community. The above Library went further to point out that IR has become a knowledge management instrument in higher education institutions to maximize the visibility, use and impact of the scientific and academic output in the international community. In a similar definition Lynch (2003) describes IR as a set of services that a university offers to the members of its community for management and dissemination of digital information created by the institution and its community members.

From the definitions above IR is a system that operates within the open access archives movement. The information materials must be generated within the institution by the members of the institutional community. The institution should be able to make the information available to its staff and other interested international knowledge community, thereby creating visibility and impact for the originating institution and its staff. These diversified definitions given to IR are summed up in the argument of Bossaller & Atiso (2015) while reviewing literature on IR. They noted that terms such as digital library, virtual library, institutional repository or electronic library have been used interchangeably by various scholars.

Institutional repositories (IR), facilitated by the Open Access Archives (OAA) movement have been heralded as the new order that will bridge the gap in knowledge production and access between the developed and the developing world. It has been argued that this development will open up the knowledge bank of the developed societies at little or no cost to the developing societies. At the same time it will boost the visibility of the hitherto obscured knowledge of the developing societies due to lack of publication exposure challenges. However, this does not come without a price. The price is the ability to manage the IR and OAA within the standards set by the Open Access Initiatives. UKOLN's (2011) technical review of open access repository registers noted that the relative strengths of each IR system is based on four main parameters; rate of growth, software, API capabilities and the quality of data held in each system. The Alfa Network Babel Library (2007) made similar conclusions when their report noted that in the design and management of the process of IRs a series of rules, techniques and elements must be recognized and discussed in dept. These include choosing software which runs open source solutions compatible with international protocols, acquire the content and fix the quality control mechanisms, manage the intellectual property rights, adopt a metadata standard, incorporate other methodologies to give visibility to the content and acquire a management support foray

sustainable archives. Examining the situation holistically McGover (2007) argued that the core aspects of IR may include organizational infrastructure, technical infrastructure and requisite resources. Believing that organizational infrastructure is the core of success in IR management the study constructed the following framework for the management of IR.

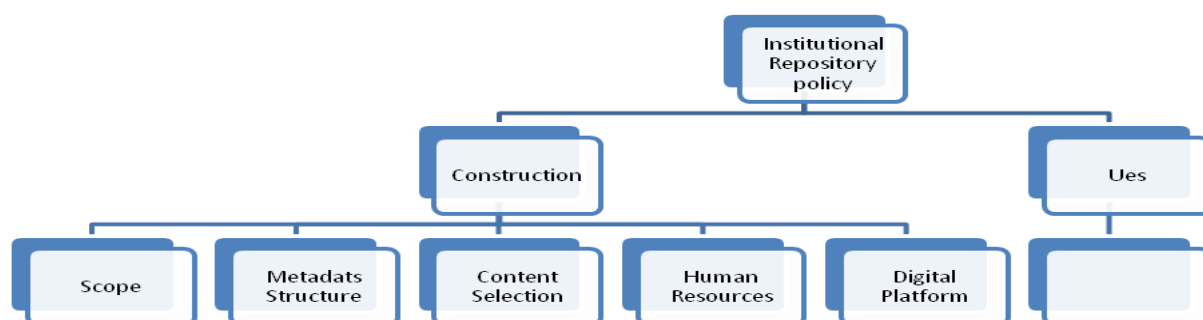


Figure 1: Policy Framework for IR Policy Construction

IR here is examined within two perspectives, construction and uses. Policy for any IR should be able to consider the two aspects; however, we shall examine the construction aspect of the framework. The scope should be able to define the mission and structure of the IR, while the metadata structure should be able to state the indexing structure/standard used including the nature and size of the fields.

Content selection/management should define the type of information and condition for acceptance. Human resource policy should address the nature and training of personnel, while the software policy should be able to state the software programme that the IR runs on. Trying to analyse what data structure policy of an IR should look like UKOLN (2011) posed four pertinent questions, what data can be held? Here the size and structure of the schema within which the data is stored is assessed. Their flexibility, field names and the reasonableness of data structure is examined; How well populated are the fields? The proportion of the fields that are populated, irrespective of the content and quality of field are examined; How accurately populated are the fields? This considers the appropriateness of the content of the field, and how accurate is the data? It also considers the truth about the data content in the IR.

Answers to the above questions will provide for the registration of the IR for end-users. In addition to the above questions, DOAR will seek to find out if there are clear information on the IR policies regarding tagging peer-reviewed/non peer-reviewed materials, their subject coverage, the constituency they draw on for content, their collection and preservation policies (UKOLN, 2011). Moreover,

DOAR provided a 24 item list of fields that should be available to end users through the open DOAR user interface (UI) as shown in table 1.

Address	Contacts	Content	Content Policy
Country	Data	Policy Date	Added Description
Established	Fax	Languages	Location
Metadata Policy	OAI-PMH	Organization	Preservation Policy
Repository Name	Repository URL	Size	Software
Subjects	Submission Policy	Tel	Type

Table 1: Non-exhaustive list of fields available to end users through the OpenDOAR UI

Source: A Technical Review of Open Access Repository Registry (UKOLN: 2012)

## Management of Institutional Repositories (IR)

The seed for IR was sown in the early 1990. Smith and Johnson (1993) noted that the American Physical Society (APS) predicted that by the year 2020, a complete generally accessible international electronic database of science is not only possible and desirable but probably inevitable. This database, the prediction noted will replace and improve upon the present system of print publication for science; it would include all authenticated research and would also contain various forms of less formal literature, like preprints in a pre-publication phase, comments and discussions on the published literature and a variety of possible fora. Richards (n.d.) noted the works of Gardner & Harnad (1990) and Okerson & O'Donnell (1995) which were suggestive of issues related to IR. He argued therefore that the origin of the IR can be traced to ideas presented by these authors. Richards went further to note that the characteristics of IR are fairly complex and may require some considerations which may include:

- Pre-existing or under-developed e-theses archives;
- Pre-existing departmental e-print archives;
- Grass-roots faculty practices of making e-prints available on personal web pages;
- Institutional desire to preserve for both posterity and portfolio;
- Support for the philosophy of open access;
- Pre-existing distributed document servers, and
- A reaction to the journal crisis.

It was merely a fulfilment of the expected when the Directory of Open Access Repository (DOAR) was launched in 2005. However before this launch, there were a number of different lists of repositories and open archives. DOAR was the first authoritative list of open access repositories designed to provide details about repositories for end users. DOAR provided such information on repositories as clear information on their policies regarding tagging peer-reviewed materials, subject coverage, the constituency they draw on for content, their collection and presentation (UKOLN, 2011). The above criteria were the basis of registering of open access repositories by DOAR. In March 2006, a total of 300 repositories were registered as the first group of access repositories. Since then the growth in the number of registered repositories has been steady and linear in nature (see fig II).



Figure 2: Graph of Registration of IR by ROAR

This rose to a total of One thousand, nine hundred and seventy two (1972) repositories as at June 2011. Fig. III shows a graphic distribution of repositories by continents. It could be seen that all the continents are represented. Africa as a continent has less than 4% of repositories in the world (less than 80 institutional repositories). As at December 2014 Africa has 99 of the 3,306 repositories registered by the Register of Open Access Repositories (ROAR) which is less than 3%. It could be seen that Africa again is losing out in global contention with regards to the registration and administration of institutional repositories by ROAR. This lack of ability to cope with IR administration could only be blamed on inconsistency in management.



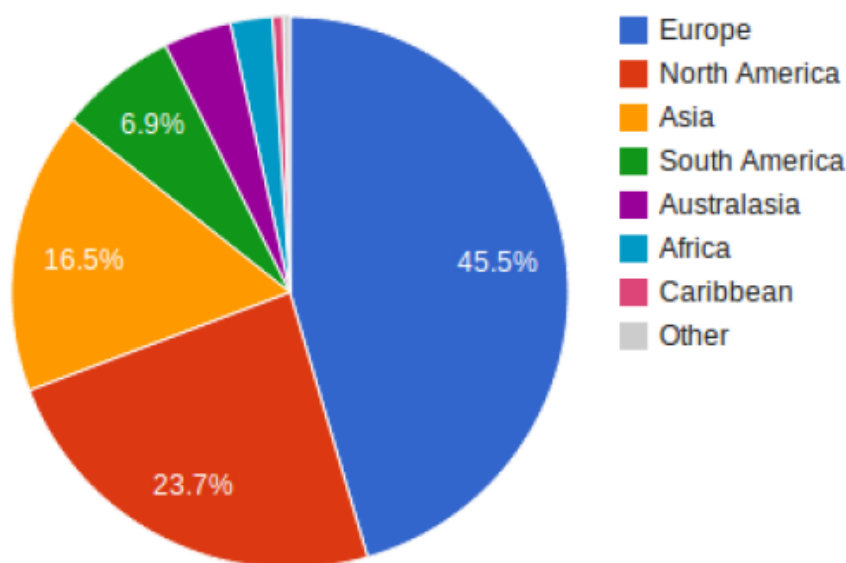


Figure 3: Graphic Distribution of IR Continents

Source: A Technical Review of Open Access Repository Registry (UKOLN: 2012)

It should equally be noted that there is no significant gap in the construction of IR in institutions globally because by 2006 most universities in Africa had ample experience in use of ICT in the management of library resources to understand the need to be part of the global trend.

New directions in information storage and management started with developments in application of computers to information handling. This was generally known as computerization or automation of libraries. Imo & Igbo (2010) had argued that ICT and globalization have broken down national boundaries. It is the ability of individual libraries within the nations to tap into the central library, which is epitomized by the internet to store and access information that will determine the gains these institutions will make from ICT and globalization. Library automation started in Nigerian Universities in the early 80's. Various projects and programmes have been mounted to help facilitate the realization of these projects. In 2004, there was a pilot conference of virtual libraries project for some six universities in the six geopolitical zones in Nigeria to kick start the building of virtual libraries in Nigerian Universities. This project did not make the desired impact in the libraries because from 2004 to 2014 only eight (8) universities have been able to build institutional repositories which are registerable in ROAR (see table II). This is less than 10% of existing universities in Nigeria as at 2004. By 2013, Nigeria has one hundred and twenty nine (129) universities: 40 federal, 39 state and 50 private universities. Out of these 13 do not have websites. This implies that about one hundred and six (106) universities in Nigeria have websites and can potentially host workable IRs. It is regrettable

that as at 2014 less than 6% of registered universities have IR. This in any sense cannot be said to be progressive.

S/No	Ownership type	Frequency	No with web address	No with IR	Software type			No with existing policy
					DSPACE	E-Print	Open R	
1	Federal Universities	40 (31%)	35 (88%)	6 (15%)	5	None	1	Nil
2	State Universities	39 (30%)	33 (85%)	Nil	None	None	None	Nil
3	Private Universities	50 (39%)	48 (96%)	2 (4%)	1	1	None	1
	Total	129 (100%)	116(90%)	8(6%)	6	1	1	1

Table 2: State of institutional repositories in Nigeria

## Organizational Policy

Administratively, IR should be aimed at ensuring access to digital materials overtime, hence Caplan (2008) argued that there is a need to ensure organizational strategy that will make it possible for materials to be captured in the repository to be assessed, selected and brought under the control of the custodian institution. Consistent organization strategy dovetails into institutional policy. In formulating this, written guidelines should serve as backbone for taking decisions regarding administration and control of daily activities. According to Ambruster (2011) IR depends so much on availability of policies to manage them. Czerniewics and Brown (2009) defined policy as the allocation of goals, values and resources. According to the above authors, revelation from studies shows that institutional policy or organizational culture has mediated the way organizations and institutions have carried out their programmes. Sutton (1999) sees policy making as a problem solving process which is rational, balanced and analytical, pointing out that within a policy framework, decisions are made in a series of sequential phases, starting with the identification of a problem or issue and ending with a set of activities to solve or deal with it. Sutton further argued that a policy should recognize and define the nature of the issues to be dealt with, identify possible course of action to deal with the issues, weigh each of the advantages and disadvantages of the alternatives, choose the options which offers the best solution, monitor policy implementation and periodically evaluate policy outcomes.

From the above, it could be seen that the formulation and implementation of institutional policy for results is not just a mere wish or what one desires to do or not to do. Policy formulation and implementation is serious business of documented institutional performance. This is the wisdom behind Nzotta's (1975) argument that every library operates on the basis of a policy, good, bad and indifferent, expressed or implied or only practically sensed through tradition and usage. He however cautioned that policies that are not carefully thought out and written down for everyone to read have a limited use in terms of operationability. Comparing this to air pilots, he noted that no person would like to travel in an airplane whose pilot has no compass to assist him even though he may have many years of experience.

The major challenge which institutional projects face in developing societies may not necessarily be finance, rather it borders on administrative capacity. The ability to brainstorm on an intended project to produce a written guideline for the implementation of the project and making sure that the guidelines is followed strictly with amendments as the need arises. The amendment should be the best option to what is written on the guideline. These amendments are subsequently incorporated into the guide as part of it. This is done in form of policy reviews or upgrades. This is quite distinct from doing things as "we use to do it", discovering things by serendipity and taking decisions based on the spore of the moment. In the first instance, continuity is guaranteed even if the actors of the moment are changed. There is usually, a written document which the new actor falls back to for continuity. In the latter case once the actor is changed everything is changed because there are usually no document to fall back to except the volatile memories of those who worked or are associated with the actor.

Authors have lamented the inability of African nations to initiate and sustain policy initiative for access to electronic information resources. Rollins College's Miller as cited in Duranceau & Kriegsman (n.d.) lamented the lack of policy for building IR which is evident in universities. Kujenga and Devries (2011) noted the lack of management experiences among digital library practitioners. This according to the authors requires the need to create a digital library support organization to address the strategic and operational environment for providing long term access to electronic resources. Diso (2009) pointed out that Africa's ability to develop effective information policy instruments at national and regional levels is seriously constrained. In most cases, such policy instruments are non-existent, where they exist, they are mostly characterized by fragmentation, irrelevance and poor implementation. Ubogu and Pickover (2011) sealed the arguments when they noted that there are no national or regional initiatives to develop strategies and policies that would provide integrated access to the digitized collections of libraries, archives and museums across each country and the continent at large. It is evident that project development and implementation have to grapple with the challenge of policy guidelines on which they run. This has negatively affected

projects in Africa. The degree to which this affects them has not been clearly determined. This is the gap which this research is designed to fill.

It may be necessary at this point to examine some criteria for the establishment and registration of IR by DOAR. The Canadian Association of research libraries indicates that an institutional repository is a digital collection of part of a university's intellectual output and it centralizes preserves and makes accessible the knowledge generated by academic institutions. They equally form part of a larger global system of repositories, which are indexed in a standard way and searchable using one interface; and they offer great promise for the development of new patterns of scholarly communication (Chisenga, 2006 cited in Nwokedi, 2010). From the foregoing it can be inferred that IRs will form the aggregates which will make up the global library of the future. In essence any institution or nation which does not develop a workable IR will be left out of the global information system. The requirement for building IR are; information generated from the institution, automation of the library system, digitization of some information resources, standard indexing system and software programmes that are compatible with what obtains in the rest of the globe. These issues are not new to our library system. However the challenges faced by these institutions are as discussed in Imo & Igbo (2011). These include lack of policy initiatives to guide project execution, not giving priority to knowledge in Africa, lack of collaborative initiatives in digitization, lack of skills and knowledge of digital and electronic resource development and management by librarians, poor telecommunication infrastructure etc. Bossaller & Atiso (2015) summarized it thus:

certain aspects of developing countries present especially vexing challenges for implementing an IR. For instance, institutions often lack a strong and secure ICT network.... There may be insufficient resources for managing the IR, there are often inconsistent power supplies and above all; there is lack of funding for major IT projects (Bossaller & Atiso, 25)

These issues are hardly left out in any academic discussion on application of ICT to library services. Incidentally, the very insidious challenge that exacerbate African development, (i.e. administrative incapacity), is hardly discussed.

The major challenge here is that African Universities have already started showing signs of administrative incapacity as it relates to the management of institutional repositories. An IR must have a mission that is the focus of the collection. This mission will drive the development of the policy which ought to be the first step towards guaranteeing the success of the IR. It should be the responsibility of this assembly to strategize on ways of getting African leaders, especially university

managers to make strategic management, as it relates to IR, the most important factor to be addressed. If this is not done we fear that Africa may miss this chance.

## **Conclusion**

The paper has argued that development and management of institutional repository is one of the critical factors for global visibility of the scholarly outputs of academic institutions in Africa, which in turn should enhance the contribution of these institutions to the world knowledge economy and sustainable development. It is further contended that a viable institutional repository is a product of consistent management decisions which are translated into standard policies. It has been revealed that the problem of development and management of institution repositories in Africa and Nigeria in particular lies on lack of policies. The need for institutional policies for management of IR projects is imperative as it provides guidelines for effective development and implementation of the project, ensuring consistency, continuity and support for the institutional initiative to provide an enabling environment for enduring access to information for knowledge and development. The above situation cannot be achieved without standard policies (both at national or regional levels) that would guarantee uniformity in the management of IR projects. Government interventions are crucial in this regard as this would serve as watch dog in monitoring/ensuring strict adherence to the implementation of the projects. Most importantly university administrators should accord more priorities to building IRs in libraries and develop strategic plans which should be consistent with those of DOAR and ROAR.

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