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Mentoring, Mastery and Modernization***

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(PSIST)

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Table of Contents

Officers of the University of Nigeria, Nsukka	iii
Inauguration of Conference Committee Members	iii
Acknowledgments	v
Forward	vi
Table of Contents	vii
1. The Digital Economy and Knowledge Professionals: From Facts to the Future Charles O. Omekwu (Ph.D)	1
2. Institutional Repositories: The Untapped Academic Goldmine Samuel C. Avemaria Utulu and Adebayo A. Akadri	16
3. Creation of Viable Library Services in Prisons in Enugu State Barr. (Mrs.) P. N. Ejimofe	24
4. Evaluation of an ISP Services on Clients Satisfaction: The Case of World Web Limited (WWL) Nock, Grace Ishaya and Kasa, Matthias Gabriel	32
5. Choosing Librarianship as a Career: A Gender Analysis of Library and Information Science (LIS) Undergraduates in University of Nigeria, Nsukka. M. O. Okoye	40
6. Mobile E-Learning: Exploring Partnership between Education and Telecommunications Platform Ajigboye, Solomon	49
7. Network Literacy Skills of Academic Librarians for Effective Services Delivery: The Case of University of Nigeria Library System Chinwe Nwogo Ezeani	56
8. Library and Information Science Professionals and Skills Set for the Electronic Information Environment Ukachi, Ngozi B	67
9. Information Communication Technology (ICT) as a Tool for Cooperation and International Understanding L. A. Iroka & N. C. Uzoagba	75
10. Users' Highway to Biological Science Collections and Users' Satisfaction with Academic Libraries in the South – South Zone of Nigeria Uduakobong Oscar Udoh, Anke A. Ukpak & Kathryn Philip	79
11. The Status of Scholarly Communication in Nigeria: The Role of University Libraries for Sustenance E. D. Chigbu	86
12. Library Development and Economic Recession: The Nigerian Scenario Okechukwu R. Attama & Tony I. Obaseki	94
13. Information Behaviour of Lecturers in Faculty of Pharmaceutical Sciences in University of Nigeria, Nsukka Mercy Nwegbu & Victoria Obijiofo	98
14. Digital Libraries and Higher Education in Nigeria in the 21st Century Stella N. I. Anasi	102
15. Demographic and Socio-Economic Factors as Determinants of Information and Communication Technology Use for Scholarly Communication in Nigerian Universities Alice M. Okore	108
16. Effect of the Online Public Access Catalogue (OPAC) on the Academic Performance of Undergraduate Students in Nigeria: The Experience at the University of Lagos and American University of Nigeria Alabi, Adefunke Olanike & Bukar, Inuwa	116

17. Internet use Behaviour of the University of Nigeria Nsukka, Community Ekwelem, Vincent O.	123
18. Influence of Self Efficacy, Perceived Ease of Use and Perceived Usefulness on E-Library Usage by Academic Staff in Nigerian Universities Adetoun, Sote & Kolawole, Akinjide Aramide	133
19. The Challenges of Software Utilization in Nigerian University Libraries: Review of Experiences from 1990 – 2009. Imo, Nwabuisi .T.	134
20. Library Digitalization: Avenue for Managing Information Based Resource in Nigerian Universities Libraries: A Way Forward. Tony I. Obaseki & Momoh N. Juliet	152
21. Comparative Study of Information Seeking Behavior of Academics in Natural and Social Sciences Faculties in the University of Nigeria, Nsukka Echezona R. I & Ogwu, M. F	161
22. Corporate Social Responsibility and Its Significance to the Establishment of an Information Repository: The Experience of a Nigerian University Kasa, M. Gabriel	170
23. Training Needs of Librarians for Digital Library Projects in University Libraries in Nigeria: A Case Study. Ugwu, Cyprian I. & Ekere, Justina N	176
24. Migrating From the Traditional to the Digital Library Environment: Whither Nigerian Information Professionals Chinwe Anunobi & Anthonia Nwabueze	185
25. The Environment and Information and Communication Technologies (ICT) Atamewan E. Eugene	192
26. Library Services: A Missing Link in the Federal Government of Nigeria Policy on Vision 20:20:20. Cyril C. Eze	196
27. Towards Establishing a Mentoring Programme in a Nigerian University Library: Opinions of Librarians Ijeoma J. Ibegbulam	201
28. Information Science in Meeting Millennium Development Goals Duke Tabuko & Arc. Eugene Atamewan	211
29. Digitization of Law Libraries: Implication for Proper Administration of Justice in Nigeria Ngwuchukwu, Margaret N.	217
30. Building Open Access Institutional Repositories for Global Visibility of Nigeria Scholarly Publications Ifeanyi J. Ezema	223
31. Application of ICT to Scholarly Communication in the Information Society: Prospects and Challenges Adewuyi, Olugbenga W.Nduka, Stella C. & Ojo, J. Onaade	234
32. Selective Dissemination of Information (SDI) Services as a Technique for Effective Scholarly Communication in University Libraries Victor N. Nwachukwu, F. N. Asiegbu & Uzoamaka Igwesi	242
33. Assisting Researchers with Information Technology: Problems and Prospects Ugwoke, B.U	247
34. The University Library Functions Redefined in an Ever-Changing and Knowledge Intensive-Learning Environment Chioma Mbakwe	251
35. Indexing as a Tool for Information Retrieval Alex. O. Ali	258

36. Management of Theses and Dissertations in University Libraries in Nigeria Jonas U. Ezema	264
37. The State of E-government Readiness of Africa: A Comparative Web Assessment of Selected African Countries Brendan Eze Asogwa	271
38. Availability and Accessibility of Information Services for Academics in Federal University Libraries: Implication for Information Delivery. V. N. Okafor	279
39. Assessment of School Libraries in Enugu North Local Government Area. Enem, Fidelia Ngozi	287
40. Library Services to Prisoners in South East Geopolitical Zones of Nigeria R. N. Okwor, C. F. Ugwuanyi & E. C. Ezeji	293
41. Computer Vision Syndrome: Recognition and Control Among Library Staff in University of Nigeria, Nsukka. Ukwoma Scholastica C.	300
42. Mentoring as a Tool for Re-Skilling the 21st Century Librarians B. U Asadu	307
43. The Potentials of Open Access Initiative (OAI) in Scholarly Communication and Publication in Nigeria Ejikeme Anthonia Nwamaka	313
44. Implementing Open Source Online Public Access Catalogue: Veritas University Library Experience E. E. O. Akpan & Enobong Oton	320
45. Networking Imperative for Law Library Resource Provision and Development in Nigeria F. O. Anaeme	325
46. Rural Farmers and their Constraints in Accessing Agricultural Information: A case Study of Nsukka Local Government Area of Enugu State, Nigeria. Obidike Nnenna A	333
47. Mentoring in Nigerian University Libraries: An Imperative for Capacity Building Richard Ndubuisi C. Ugwuanyi	343
48. The Formation and Use of Virtual Communities in Professional Practice: Knowledge, Attitude and Awareness of Librarians in University of Nigeria, Nsukka Osadebe, Ngozi Eunice	349
49. Challenges of Accessibility of Information Resources by the Post-Graduate Library Users of the University of Nigeria Nsukka Igbo, H. Uche	357
50. An Investigation into the Extent of Use of Computer Services for Research by Undergraduates in Two Nigerian Universities Ezeji, Emmanuel Chukwudi & Mole, Austin Jude Chikodi	366
51. Enhancing Scholarly Communication and Information in Distance Learning: The Role of Information and Communication Technology (ICT) Dim, Chibuzor Livina	373
52. ICT Application in Reference Services of Academic Libraries: Its Problems and Prospects. Udeh, Ifeoma C.	380
53. Library Portals and Information Architecture: Librarians as Client Predictors H. N. Eke, A. J. Alonge, R. E. Ozioko, J. N. Udensi & M. Eze	385
54. Mentoring in Academic Institutions Adeniji, Moses Adenuga & Adeniji, Sarah Eleojo	397
55. Factors Influencing Knowledge-Sharing among Academic Staff of the University of Nigeria, Nsukka Idoko Nkechi Anthonia	403

56. Analysis of Literature of Information Seeking Behaviour of Agricultural Scientists Igbokwe J. C	410
57. An Assessment of Library Services of the School Of Nursing Library, Bishop Shanahan Hospital, Nsukka, Nigeria Ali, Adizetu A.	415
58. Use of library resources in Nnamdi Azikiwe library by Arts Education students, University of Nigeria, Nsukka. Ajayi, C.O.A.	422
59. Blogs as Tools for Online Information Sharing: Librarians in the Blogosphere Dorothy Ijeoma Orji, Uzoamaka Igwesi & Helen Nneka Eke	430
60. Search Engines for Modern Library and Information Service Delivery Ngozi, C. Otagburaugu & Tertsegha Tivde	438
61. ICT Issues for Librarians in the 21 st Century Felicia N. Ugwu	453
62. Strategies for Promoting Research in African Studies Ishiwu Benedict .N.	458
63. Web Resources for Medical Research Ifeyinwa Omekwu	463
64. Marketing of Library Products and Services in Monotechnic Libraries: A Case of Federal School of Dental Technology and Therapy, Enugu Akpom Chinwendu .C.	471
65. Application of Information Communication Technology (ICT) in Serials Management Nsude Ndidi Cecilia	475
66. Collection Security Measures in the Moot Court Law Library, University of Nigeria, Enugu Campus Sylvester Chinedu Okpeh	480
67. Analysis of DSpace and Greenstone Open Software Institutional Repository Software Iwundu, Nkiruka Eucharia & Ifeanyichukwu, Juliet Nneoma	484
68. User Education Programmes in Nigerian University Libraries Helen Okenwa Ofulue	493
69. Quickies for the 21 st Century Librarian Helen Nneka Eke, Dorothy Ijeoma Orji & Abraham Okorie C.	505
70. Librarians in the Information Age Patrick Chijioke Igbokwe	511
71. E-Libraries and Users Satisfaction: A study of Anambra State University Library Agbanu, Norbert Amaechi, Ofordile Julius Okeke & Okeji, Clement C.	518

Institutional Repositories: The Untapped Academic Goldmine



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Abstract

This paper looked at the influence of the Internet on scholarly communication and the emergence of various access-to-knowledge initiatives, with stronger emphasis on institutional repositories (IRs). It highlighted the benefits of IRs and the efforts made by Redeemer's University (RUN) towards the implementation of RUNIR. It concluded that Nigerian universities stand to benefit tremendously from IR if they take up the challenges of understanding its features and implementing it.

Introduction

The recent rapid development in the use of the Internet for scholarly publishing has changed the ways scholarly publications' impact and efficacies are assessed. This resulted because of the phenomenal effects of the Internet on the ways scholarly publishers carry out their businesses and has led to the evolution of three scholarly publishing models: paper based model, paper plus online based model and online-only model. Within the ambit of the online-only model, two prominent cultures have also emerged which have further transformed the ways online scholarly publishing is carried out. These cultures are nevertheless, dictated by the diffusion of the roles publishers and authors play within the scholarly publishing cycle. Firstly, there is a culture in which the publisher plays the role of by, ensuring quality through editorial works, peer review processes, text formatting and public presentation of research contents in the forms most suitable for public consumption. There is also a second culture in which authors play the role of authoring, coordinating submission and registration of research works, ensuring quality by carrying out editorial works, peer review process, text formatting and public presentation of research contents for public consumption. This second culture has been done either institutionally in the case of institutional repositories or personally through the use of personal websites or websites owned by institutions that give room for personal repository practices (see www.run.edu.ng/; www.unilorin.edu.ng/)

While much research have been carried out concerning the first culture, that is, the culture of institutionally (scholarly publishers) managed online publishing, very few research has been carried out regarding Institutional Repositories (IR) in which authors assume and carryout the primary roles conventionally carried out by scholarly publishing institutions. The scenario of limited research into IR use is more intense in Nigeria where higher institutions and research centers have not started tapping into its benefits. This paper was therefore, written to shed light on IR based online publishing models. The paper specifically highlighted the various benefits individuals and institutions stands to gain from adopting IR. It also dealt with practical issues relating to setting up an IR, such as technology requirements, policy requirements, manpower, training, and IR implementation; using a model designed by the authors. The benefits academic institutions can derive from deploying an IR were highlighted.

The Emergence of Access-to-Knowledge Initiatives

Concerns raised about poor access to global scientific knowledge in the turn of the 20th century resulted to the development of a variety of ways to ameliorate the inadequacies associated with scholarly publishing and knowledge dissemination. While efforts are geared towards improving knowledge dissemination around the world, it is hardly contemplated that the lack of inclusive access to scientific knowledge experienced around the world does not only affect countries in the South, but that it also has daunting effects on the information-rich countries of the North. Commentators and researchers hardly put it to mind that convention requires that scientific knowledge must be generated based on universally tested and verified precepts. In other word, scientists are supposed to rely on evidences and procedures available globally when developing new knowledge and when expanding existing ones. On the contrary however, the high cost of

acquiring scientific knowledge created in the North has deprived scientists in the South from using the bulk of the knowledge available in the North. Likewise, the ineffective non-IT based knowledge dissemination techniques used by scientists in the South have also deprived their counterparts in the North from having access to the bulk of knowledge emanating from there. The scenarios in which non-inclusive access arise due to cost and the use of inappropriate technologies have created knowledge-access divide between the North and the South and have ended up challenging the universality of available scientific knowledge. This was why the evolving knowledge dissemination systems that advocate for affordable global open access to knowledge have become very important.

A perfect scenario in which knowledge is shared globally would help achieve a universal expansion of existing scientific evidences and procedures and the development of new ones across the north and south poles. Hence, the need to create universal access to knowledge to support this reality has resulted to the creation of new knowledge dissemination model termed the open access to knowledge initiative. The open access initiative model is to ensure that societies have unrestricted access to knowledge irrespective of their economy standing and their technological sophistication. The initiative was designed to give room for an inclusive global access which will aid collective verification and assessment, criticism and use of scientific knowledge for the common good of all societies. The spirit and letter of the principles of open access initiative was developed to ensure that through open access to global scientific knowledge, that knowledge generated and used around the world would enjoy universal input from scholars and stakeholders. Against this background Aronson and Glover (2005:279) opined that "scientists cannot work effectively without access to the information produced by their peers-the basic materials on which most scientific effort is built."

Some of the initiatives that arose from the efforts geared towards opening up access to global knowledge include the ones led by Food and Agricultural Organization, World Health Organization, United Nations Environment Programme Agency and major publishers. They include the Access to Global Online Research in Agriculture (AGORA), Health InterNetwork Access to Research (HINARI) and Online Access to Research in the Environment (OARE). Over the years the beneficiary countries have been given full text access to over seven thousand high impact journal titles covering various academic fields published by leading scholarly publishers around the world. Hence, Aronson and Glover (2005) surmised that the initiative was based "on the premise that developing world scientists, as researchers, educators, and advisers to their nations policy makers, can contribute significantly to ameliorating the conditions of life in their countries" by having access to research and scientific knowledge created around the world.

Close to this is the African Journal Online (AJOL) initiative which was particularly meant to harness Africa's scientific knowledge output using modern technologies. The AJOL initiative was particularly meant to improve access to knowledge emanating from Africa among African scholars. It was meant to serve as an inclusive access platform which will aid the expansion of Africa's knowledge base through intra and inter use of African knowledge among African scholars who are within and outside of Africa (Rosenberg 2003 and Cumming 2006). Another very important initiative initiated to help developing countries is the library consortia based eFL.net programme. According to Kupryte *et al* (2005), the eFL.net initiative was based on assisting "libraries and their users by leveraging the purchasing power of individually "poor" customer with information providers on multi country consorsial basis with highly discounted country subscription prices (p. 256)." eFL.net used subsidized subscription to promote access to knowledge in member institutions.

Open Access Initiative

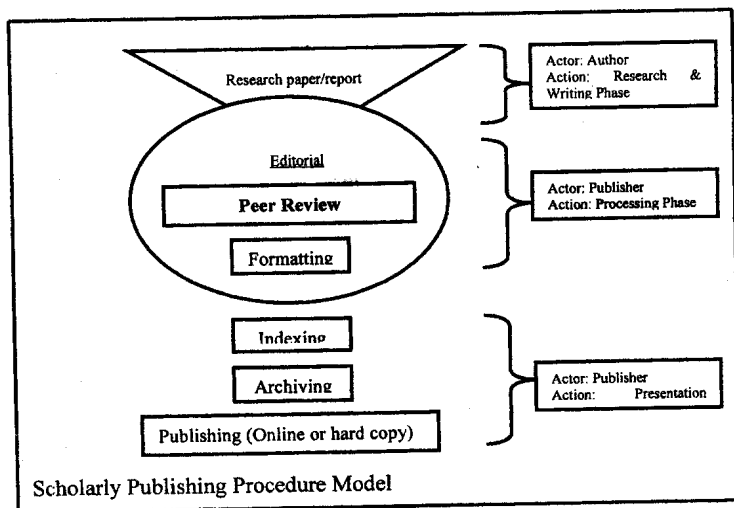
The revolution brought about by various access-to-knowledge initiatives got to its crescendo with the launch of the open access initiative. The open access scholarly communication model describes scholarly works that are made freely available on the Internet on the first day of their publication without any form of restriction, resulting from payment, registration, copyright,

geographical location, belief or creed (Collins 2005, INASP 2006 and Utulu 2009). It was the open access scholarly publication model that resulted to the evolution of open access journals and the repository culture. In the past decade, open access journal initiative has become a household name in the global academic circle. Scholars have defined it as Internet based scholarly publication model in which users have free access and can print out, and even further distribute the print outs and/or down loads for non-commercial purposes without any form of restriction and payment (Bjork 2004, Willinsky 2006 and Brody and Harnad 2005). The premise upon which open access journal is based distinguishes it from initiatives that give registered, subsidized and/or relaxed restricted access to knowledge such as the AGORA, HINARI, OARE, AJOL and eIFL.net initiatives.

The steady growth of the Directory of Open Access Journals is one signpost that indicates its growing popularity and adoption in the scholarly circle. Collins (2005) however, presented a Table of the pros and cons of open access journals thus:

Pros	Cons
Everyone with Internet access has "free" access to scientific knowledge	Authors have to pay (currently - \$500-\$1500) to have accepted articles published; not all authors are from research institutions or have research funding to cover the costs
Could eventually eliminate existing library costs for journal subscriptions	The new payer system could incentivize journals to accept more papers; it is a potential conflict of interest for an author to pay for the privilege of publishing
Authors maintain copyright	Open access journals may not survive, and if not, this could affect the promotion and tenure of junior authors
Articles available for free are more often cited than those that are not free	Specialty societies may be harmed if they lose the revenue from commercial publishing
Could eliminate citation bias (i.e., authors referencing only journals they can access)	University professors pay to contribute new knowledge that is "free" to their nonacademic counterparts who are consumers of the literature
Could eliminate authors "making do" with only abstracts when the full articles are not accessible	Larger research institutions will take on a larger burden of costs because their faculty publish more papers
	If a fee is paid only when a paper is accepted, successful authors will subsidize costs for processing rejected papers of nonsuccessful authors
	Author-pay model is not feasible for some journals, where the cost per article is upwards of \$10,000

Although the open access journal model has always been presented as different from the closed access and subscription based commercial journal models, its premise and operations are the same. The two models go through the same production processes in which publishers play very vital role as shown below. The difference they exhibit is that for some closed access and subscription based commercial journals authors are sometimes charged publications fees, while all subscribers are required to purchase hard copies and/or electronic access. For open access journals authors are most likely charged publication fees while all users are given free access.



Institutional Repositories

The invention of EPrints and Dspace software in 2000 and 2002 at the University of Southampton and Massachusetts Institute of Technology Libraries respectively led to the evolution of IRs as a way of improving global access to research and knowledge (Xia and Sun 2006). Ever since the invention of these software, the number of academic institutions, research centers and professional bodies that have developed repositories to promote free access to their scholarly output and information resources have continued to grow. Hence, Ma, *et al.* (2009) described an IR as “an effective way to preserve the knowledge assets of a scientific institution (p. 1).” Royster (2008) posited that IRs have been developed “primarily as a means to republish scholarly contents previously published elsewhere—usually in journals, festschriften, or collections of articles (p. 27).” Observation has shown that the various objectives and uses of IRs by the scholarly community have given rise to various dimensions of IR research reported in the literature. For instance, at the initial stage of the invention of IR practices, IRs were used to list and provide access to academic and non-academic contents that may not be accepted by commercial publishers not because of their academic values but because of commercial reasons.

A good example is the Dictionary of Invertebrate Zoology rejected by a commercial publisher because of its commercial value but later became a highly sought after document when it was published in an IR as Online Dictionary of Invertebrate Zoology reported in Royster (2008). Royster (2008) therefore noted that a

review of any month’s “most downloaded documents” will usually show that half or more of the top ten most downloaded works are documents published originally in IR and unavailable anywhere else [which points to the fact that IR] are well suited to become online publishers giving voice to a wide range of authors normally excluded, put off, or ill served by the vagaries, idiosyncrasies, delays, obligations, hoop jumping of conventional publication routes (p. 27).

However, IR literature has been growing and can be categorized to have covered the following areas:

1. providing publication platform for works that may have not been published by commercial publishers. E.g. Royster 2008
2. creation of access and visibility. E.g. Antleman 2004 and Robinson 2009
3. success factors. E.g. Antleman 2004, Xia and Sun 2006, and Chan 2009.
4. Institutional usages. E.g. Xia 2008, Xia and Opperman 2009
5. IR Design and Implementation Factors. E.g. Doctor and Ramachandran 2008, Jantz and Wilson 2008 and Davis 2010

The following benefits have therefore, been elicited in the literature as the benefits institutions can derive from implementing IRs:

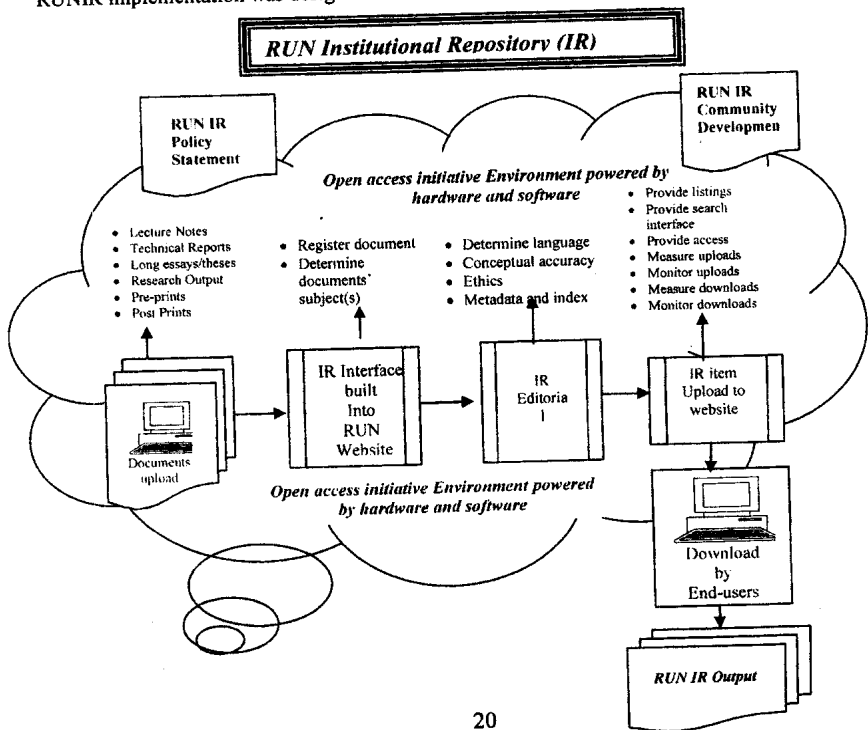
1. increase in Internet contents
2. visibility of institutional research output
3. promotion of institution and increase in reputation
4. staff and researchers’ visibility and reputation
5. easy access to research funds and opportunity for collaborations
6. provision of data- usage data, users’ location data, etc.
7. fast publication of research and other publishable works
8. prestige of being part of institutions using IRs

9. possible improvement in webometric ranking

IR Implementation Efforts in Redeemer's University (RUN)

The evolution of RUNIR dates back to 2008 when efforts were made to improve and implement programs that would help the University to benefit more from its investments on ICTs. The first effort was the establishment of the website improvement committee with membership drawn from the University's IT Unit, University Library, Public Relations Unit and Resource and Mobilization and Linkage Unit. The objective of the committee was to identify current trends in the use of university websites and advise the University on how RUN can implement these contemporary website uses. One of the primary areas identified was the use of university websites for the implementation of IR and the implication of this on universities' listing and performance in webometric ranking. Hence, the committee designed a programme for the consideration of RUN websites contents with the aim of improving the extent to which academic contents are created and disseminated using the University's websites as a requisite to the implementation of an IR. The need for proper understanding of web content and use resulted to empirical study carried out on web link analysis and web content analysis (Utulu 2008 and Utulu and Okoye 2010).

Having finalized on the redesign of the University's website, the stage that followed was getting out plans for the implementation of RUNIR. Again, different research were carried out to understand gray areas associated with implementing an IR such as staff awareness and acceptance, potential source of contents, man power and capacity development, technology requirements, policy and the role librarians and other stakeholders will play (Utulu and Bolarinwa 2009, Bolarinwa, Utulu and Sote 2009 and Utulu and Okoye 2010). The idea behind the RUNIR was to develop an IR which will provide a platform that will support the integration of the research output of the University's academic staff and those of non-academic staff that may be involved in developing reports, handbooks, manuals, and other intellectual output. Hence, a model illustrating RUNIR implementation was designed as shown below:



Influencing Factors

One of the primary challenges of IRs deployment is document availability and collection. This results from the awareness level among academic and the ability of those managing the IR to develop strategies that will speed up the rate documents are provided for publication in the IR. Although hardware and software concerns could be problems, the fact that most institutions and research centers adopting IRs have previous experiences in the use of the Internet, websites and specialized application software gives room for possible background understanding of challenges that may arise from IR software and hardware requirements. However, of major concern in the deployment of IRs are copyright issues. Questions like these ones must be raised and answered to provide a level ground for IR implementation: Who owns the deposited works and which kind of already published work should the IR accept for publication? There is always the anxiety between authors and their institutions on who owns the documents deposited in an IR. Although with regards to Theses and Dissertations most institutions have been able to clear the air on the fact that theses and dissertations are owned by institutions. On the other hand, some institutions still have to content with their staff on who owns, say a paper presented in a conference, and a research carried out without funding from the university or with funding directly sourced by the author. Again, there is also some anxiety between an author's institution and funding agencies who may want controlled access given to the research they funded. However, there are so many scenarios of challenges, but the very foundation upon which IRs are based have helped to solve some of this problems. Despite this, it is advisable that institutions developed a working policy that can be used as a yard stick to guide all stakeholders. A working policy can also help to avoid the occurrence of court litigation which may arise because of copyright violation and other forms of disagreements among stakeholders.

Consequently, RUN's implementation plans and strategies are based on four areas namely:

1. Policy Development which covers
 - a. Copyright and intellectual property rights
 - b. Definition of IR Documents
 - c. Funding
 - d. Required array of manpower
 - e. Stakeholders (RUN/depositors/publishers/fundingagencies) relationship definition
 - f. Classification of students and their roles
2. Hardware Requirement
3. Software Requirement
4. Man power training and users awareness and capacity building

Conclusion

The drive to have a democratized access to global knowledge for sustainable growth and development can only be achieved when all societies of the world starts paying strong attention to evolving knowledge dissemination practices. Although most African countries that are at the base of knowledge creation and use graph still found themselves lagging behind in cultivating the evolving new cultures, the opportunities they can derive from the deployment of new scholarly publishing culture like the IR cannot be over emphasized. When one considers the fact that at present only one Nigerian university has formally launched its own IR online, then it become easy to conclude that Nigerian universities and research centers need to quickly develop and implement plans that would allow them implement IRs. Apart from having access to other societies' scientific knowledge using the Internet (which is very crucial), Nigeria can benefit immensely from exposing its knowledge resources in a manner that would make the global scientific

community to know the strength and weaknesses of her scientific endeavor. Such knowledge can help secure patents, collaborations and research funding on the one hand. On the other hand, it can help secure the much need assistance on the areas which the country may be lacking in terms methods and access to crucial scientific information.

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