Scholarly Publication in Nigeria: Implications of Open Access

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Introduction

"Nigeria does not lack literary talent, but still, books written by native authors and further still, published by Nigerian publishing houses, are incredibly rare."[1] According to Nigerian poet and novelist Ben Okri, "The best writing is not about the writer, the best writing is absolutely not about the writer, it's about us, it's about the reader."[2]

The African writer and reader are, however, confronted with several challenges: the writer faces the challenge of getting his work out to both a local and global audience, while the reader faces the challenge of accessing works by fellow Africans. A lack of proper infrastructure to facilitate the visibility and accessibility of Nigerian scholarly publications can be held accountable for these challenges.

Nigeria has a large number of higher educational institutions, both public and private, as well as research institutions.[3] Considering the high numbers, it is expected that a large amount of information and data ought to be generated and published in journal articles. Publishing the outputs of Nigeria-based research can be achieved in two ways: one is to publish in a local journal, and the other is to publish in an international or foreign journal. The choice of where to publish often determines accessibility, visibility, impact and utility of the work. Most works published in Nigeria suffer low global and local visibility.[4] By contrast, works published in foreign journals are globally visible, but most often inaccessible to Africans as well as to others in developing countries due to the high subscription costs and pay-per-view fees. Most people in the global north have access to most peer-reviewed journal articles through their institutions which are able to afford subscription fees. For those within the global south, however, the inability of virtually all universities and research institutions to keep up with high subscription fees has necessitated cancellations, thereby reducing access to peer-reviewed journal articles.[5]

Since works of those Africans who publish in foreign journals are inaccessible to the average African, could the answer be to stop publishing in foreign journals? The promotion and assessment mechanism in the academic field has created a "publish or perish" culture, placing a high premium on works published within certain journals, most of which are foreign.[6] This being the case, how then will an author be

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[1] Ana Zoria, "Nigeria's Publishing Industry: Telling Our Own Stories", available at *http://www.pambazuka.net/en/category/books/93917* [Accessed April 9, 2015].

[2] Ben Okri, "19 Jan 2015, 06:42", available at *http://first-thoughts.org/on/Ben+Okri/* [Accessed April 9, 2015].

[3] National Universities Commission, "List of Approved Universities in Nigeria, National Universities Commission", available at *http://www.nuc .edu.ng/nucsite/File/Monday%20Bulletin/MB%202014/MONDAY%20Bulletin%2003-02-2014.pdf* [Accessed April 9, 2015].

[4] Gideon Emcee Christian, "Issues and Challenges to the Development of Open Access Institutional Repositories in Academic and Research Institutions in Nigeria", p.7, available at *https://idl-bnc.idrc.ca/dspace/bitstream/10625/36986/1/127792.pdf* [Accessed April 9, 2015]; Ifeanyi J. Ezema, "Trends in Electronic Journal Publishing in Africa: An Analysis of African Journal Online (AJOL)" (2010) 7(1) *Webology*, available at *http://www .webology.org/2010/v7n1/a74.html* [Accessed April 9, 2015].

[5] Justin Norrie, "Harvard Decries the High Cost of Journal Subscription", *The Conversation*, April 24, 2012, available at *http://theconversation.edu .au/harvard-journal-subscription-fees-are-prohibitive-6659* [Accessed April 9, 2015]; John Willinsky, *The Access Principle: The Case for Open Access to Research and Scholarship* (Cambridge, MA: The MIT Press, 2006), p.7.

[6] Phil Davis, "Publish-or-Perish Culture Promotes Scientific Narcissism", available at *http://scholarlykitchen.sspnet.org/2012/05/07/publish-or -perish-culture-promotes-scientific-narcissism/* [Accessed April 9, 2015].

convinced not to publish in foreign journals when such publications are the pathways to promotion? Worsening matters is that works published with local journals mostly lack visibility and accessibility and are only seen, used and known by members of a particular association.[7]

Those who are meant to read and put the knowledge to use are unable to see the journals due to weak distribution infrastructures and the fact that most local publishers are not linked to the global publishing network. Most of these works are still largely undigitised, and they sit on the shelves where the knowledge, though useful, is inaccessible and will therefore not make the impact it should. As a result, Nigerians are technically cut out from all of this important intellectual discussion as well as the important information about issues and events. Even worse, this inaccessibility is a deprivation of one's fundamental right—that is, the right of access to knowledge.[8]

For those in the global south and probably the few in the global north who are unable to access needed information owing to some form of restriction, the issue then is to identify how to address the problem of visibility and inaccessibility to knowledge. This article discusses the entrance of open access to the Nigerian system. It looks at scholarly publishing in Nigeria and identifies several initiatives that have been introduced for the purpose of granting access to developing countries. It highlights the progress made so far towards enabling open access in Nigeria and discusses the implications of open access to Nigeria and other developing countries.

Scholarly publishing in Nigeria

Journal publishing has existed in Nigeria for a long time. The *West African Medical Journal* was established in Nigeria during the colonial era in the 1920s.[9] The journal of the Nigerian Field Society, *Nigerian Field*, was first published in 1931 and is still being published.[10] The establishment of the University College, Ibadan in 1948 has been noted as what spiralled academic publishing in Nigeria: "From then till the late 1970s, Ibadan was the fountain of academic research, particularly in humanities."[11] As of 2015, records from *African Journal Online* (AJOL), the largest collection of African journals, show that it hosts 209 Nigerian Journals.[12]

In the early days of scholarly publishing in Nigeria, the publishing cycle was strictly adhered to, with authors responsible for writing intellectual thoughts, publishers responsible for organising the logistics and financial components of the peer-review process, publication and marketing, and libraries providing access through subscription.[13] However, the decline in the Nigerian economy and the education sector led to the "brain drain" syndrome,[14] low quality and irregularity of journal articles, the inability of Nigerian university libraries to afford journal subscriptions, and a general dissatisfaction in the Nigerian academic community, which, in turn, has led to endless strike actions by academic staff unions.[15] All of these

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[7] Ezema, "Trends in Electronic Journal Publishing in Africa" (2010) 7(1) *Webology*.

[8] Willinsky, *The Access Principle* (2006), p.143 (noting that "access to knowledge is a human right that is closely associated with the ability to defend").

[9] Ajao O.G and Ugwu B.T, "Some Problems Facing Scientific Medical Publication in Nigeria" (2011) 1 *Journal of the West African College of Surgeons* 1, 1–2.

[10] Nigerian Field Society, "NFS Journal", available at *http://www.nigerianfield.org/index.php?option=com_content&view=article&id=5&Itemid =155* [Accessed April 9, 2015].

[11] Ayodejo Olukoju, "The Crisis of Research and Academic Publishing in Nigerian Universities", available at *http://codesria.org/IMG/pdf/Ayodeji _Olukoju.pdf* [Accessed April 9, 2015].

[12] African Journals Online, "Nigeria", available at *http://www.ajol.info/index.php/index/browse/country?countryId=156* [Accessed April 9, 2015].

[13] The *2012 STM Report* states: "research information, created by an author … , passes through the journal editorial office of the author's chosen journal to its journal publisher subscribing institutional libraries—often via a subscription agent …". Mark Ware and Michael Mabe, *The STM Report: An Overview of Scientific and Scholarly Publishing* (Oxford: International Association of STM Publishers, 2012), p.14.

[14] National Universities Commission [NUC], "FG turning Brain Drain to Brain Gain", *NUC Bulletin*, June 16, 2014, p.1, available at *http://www .nuc.edu.ng/nucsite/File/Monday%20Bulletin/MB%202014/MONDAY%20Bulletin%2016-06-2014.pdf* [Accessed April 9, 2015].

[15] Niyi Akinnaso, "Still on ASUU vs Government", *PUNCH*, September 10, 2013, available at *http://www.punchng.com/opinion/viewpoint/still-on -asuu-vs-government/* [Accessed April 9, 2015].

developments brought about a gradual decay and a virtual collapse of scholarly publishing in Nigeria.[16] The folding up of reputable journals and academic publishers such as the *Journal of the Historical Society of Nigeria*, a journal published by the oldest professional society in Nigeria, further indicated the collapse in the industry.

Ever since this crisis, scholarly publishing in Nigeria has been a survival of the fittest. The "publish or perish" culture has made it imperative for Nigerian academics to continue to publish.[17] Howbeit, quality has been sacrificed to satisfy the drive for publication at all costs. Many academics in Nigeria and most parts of Africa run the entire publication process from start to finish on their own, and publications are sometimes made without going through any form of peer review.[18] It should therefore be no surprise that the outputs from these journals are questionable. This is further buttressed by the fact that most Nigerian authors have no access to research materials because university libraries are unable to afford journal subscription fees demanded by major international journal publishers.[19]

The decay in the system culminated in the creation of a multi-dimensional access problem. Nigerian academics could not access current research from the West. Meanwhile, the research findings that Nigerians managed to publish but failed to get indexed remained localised and were therefore inaccessible and lacked visibility to the international community. No matter how brilliantly researched they were, these works made little or no impact.

Journal publications that survived the decay adopted one of the three options listed below:

1. they levied members with annual dues to sustain the journals;
2. they charged publication fees on every accepted manuscript before such papers were published; or
3. they charged assessment fees on every manuscript even before assessment.

As would be expected, the third option was not very popular with prospective authors because of the risk of losing money if the article was rejected. As a result, not many journals adopted that option.[20]

Using these three options, journals were published, but a major challenge was that these works, after publication, were neither accessible nor visible. Their impact and utility were very low, partly because the works could not be located on the major indexing services such as Medline, PubMed, ISI Web of Science or Google. The implication was that both the local and international communities could not discover such publications, particularly considering the fact that the majority of journals in developing countries are not indexed.[21] Therefore, many of the journals in Nigeria are being encouraged to get indexed and to embrace the possibilities enabled by technological development, particularly the open access movement which strives to remove restrictions to access.[22]

[16] "Nigeria Structural Adjustment Program: Policies, Implementation and Impact" (1994) Report No.13053-UNI, available at *http://www-wds .worldbank.org/external/default/WDSContentServer/WDSP/IB/1994/05/13/000009265_3961006113001/Rendered/PDF/multi0page.pdf* [Accessed April 9, 2015].

[17] Andrew Plume and Daphne Van Weijen, "Publish or Perish? The Rise of the Fractional Author", *Research Trend*, September 2014, available at *http://www.researchtrends.com/issue-38-september-2014/publish-or-perish-the-rise-of-the-fractional-author/* [Accessed April 9, 2015].

[18] Olukoju, "The Crisis of Research and Academic Publishing in Nigerian Universities"; Ahmed Mohammed, "The Development of Academic Journals in Institutions of Higher Learning in Kano State, Nigeria" (2008) Library Philosophy and Practice, available at *http://digitalcommons.unl.edu /cgi/viewcontent.cgi?article=1215&context=libphilprac* [Accessed April 9, 2015].

[19] Samuel Utulu and Omolara Bolarinwa, "Open Access Initiatives: Adoption by Nigerian Academics" (2009) 58 Emerald L. Rev. 660.

[20] Olukoju, "The Crisis of Research and Academic Publishing in Nigerian Universities".

[21] Daisy Ouya, "Open Access Survey of Africa-Published Journals" (2006) International Network for the Availability of Scientific Publications, infobrief 7, available at *http://www.inasp.info/uploads/filer_public/2013/01/29/infobrief_7_open_access_survey_africa_journals_ouya.pdf* [Accessed April 9, 2015].

[22] Ezema, "Trends in Electronic Journal Publishing in Africa" (2010) 7(1) *Webology* (recommending that "in order to enhance the visibility of African research outputs more journals publishers should be encouraged to join AJOL").

Nigeria introduced to open access

The global movement for access to knowledge (A2K) has been on-going now for several years,[23] but an off-shoot of the wider A2K movement known as the open access movement has focused on the need to provide free, immediate, online and unrestricted access to peer-reviewed literature. This movement seeks to achieve access via a new model for journal publishing that would grant users free use and reuse rights to peer-reviewed literature on the platform of the Internet. It also seeks to increase access by calling upon authors to make their work available to the world by depositing a pre- or post-print in a digital repository—that is, an online site that serves as an archive, a store where information is kept and where anyone with a computer and Internet connectivity is able to access the information kept therein. This new journal publication model is capable of addressing both the visibility and accessibility issues in the conventional publishing model.

   This movement, which started in the global north in 2002, has now found its way to Nigeria. In 2008, the first programme to sensitise Nigerians on open access took place in Nigeria.[24] Titled "Open Access Repositories: New Model for Scholarly Communication", the programme was sponsored by the Electronic Information for Libraries Network (EIFL), the Department of Library and Information Sciences, Ahmadu Bello University and the Nigerian Universities Libraries Consortium (NULIB). It had 45 institutions and 89 participants, including policy makers from the academic and research field, experts in the libraries and information sciences, and information and communications technology experts working within the knowledge development sector.[25] The meeting addressed the importance of open access:

> "Communicating scholarly information through open access repositories provide the added advantages of faster publishing opportunities, greater visibility for authors and institutions and cheaper access"[26]

The meeting further noted the need for an open access policy for the nation. In 2009, another programme was held as a follow-up to this earlier meeting, with the theme "Open Access: Maximizing Research Quality and Impact". It has been reported that, as a result of these two workshops

> "[the] University of Jos and Ahmadu Bello University, Zaria have deployed their institutional repositories (University of Jos institutional repository, Ahmadu Bello University's institutional repository is only accessible through the university intranet for now). The Department converted its two journals from toll access journals to [open access]: *The Samaru Journal of Information Studies* and *The Information Manager*."[27]

Institutional repositories in Nigeria

Since 2009, the number of institutional repositories in Nigeria has begun a gradual but slow climb. The websites that track and register all open access repositories, the Registry of Open Access Repositories (ROAR)[28] and the Directory of Open Access Repositories (DOAR),[29] provide information on the status of repositories in Nigeria. The first institutional repositories in Nigeria was set up by the University of Jos in 2009. By the next year, two other institutional repositories had been set up by the University of Nigeria and Covenant University on August 29, 2010 and November 24, 2010, respectively. A search on

[23] Gaëlle Krikorian and Amy Kapczynski, *Access to Knowledge in the Age of Intellectual Property* (New York: Zone Books, 2010), pp.1–2.
[24] Ezra Shiloba Gbaje, "Open Access Journal Publishing in Ahmadu Bello University, Zaria, Nigeria", available at *http://conference.ifla.org/past -wlic/2010/138-gbaje-en.pdf* [Accessed April 9, 2015]; UNESCO, "Overview of OA in Nigeria", available at *http://www.unesco.org/new/en /communication-and-information/portals-and-platforms/goap/access-by-region/africa/nigeria/* [Accessed April 9, 2015].
[25] UNESCO, "Overview of OA in Nigeria".
[26] Electronic Information for Libraries, "Strategic Approach to Open Access in Nigeria", Open Access News, Nigerian Open Access Workshop, May 19, 2008, available at *http://legacy.earlham.edu/~peters/fos/2008/05/nigerian-oa-workshop.html* [Accessed May 22, 2015].
[27] UNESCO, "Overview of OA in Nigeria".
[28] Available at *http://roarmap.eprints.org/* [Accessed April 9, 2015].
[29] Available at *http://www.opendoar.org/* [Accessed April 9, 2015].

the ROAR website indicates that there are nine repositories, eight of which use the DSpace software[30] and one uses the EPrint software.[31] Both the DSpace and EPrint software is open source software developed to support the setting up and running of institutional repositories. The two pieces of open software are both built in compliance with the interoperable standards prescribed by the Open Archive Initiative which aims to ensure interoperability by standardising the method for inputting information and thereby facilitating efficient content distribution.[32] Although the website lists nine repositories, these repositories represent six organisations. In addition to the repositories mentioned in ROAR, DOAR lists amongst others the Kashim Ibrahim Library of the Ahmadu Bello University as having a repository which uses DSpace software. The table below provides information on the status of repositories in Nigeria using the information from the ROAR and DOAR websites.

S/N	Name	Date	Software	Comment	Website
1.	University of Jos (UNIJOS)	19/05/2009	DSpace	421	ROAR
2.	University of Nigeria Nsukka (UNN)	29/08/2010		2989	ROAR
3.	Covenant University	24/11/2010	EPrint	3307	ROAR
4.	Federal University of Technology Akure (FUTA)	22/04/2012	DSpace	5130	ROAR
5.	University of Jos (UNIJOS)	12/07/2012	DSpace	5649	ROAR
6.	University of Nigeria	14/08/2012		5803	ROAR
7.	Federal University Oye Ekiti	23/02/2013	DSpace	6543	ROAR
8.	Michael Okpara University of Agriculture	25/07/2013	DSpace	7145	ROAR
9.	CU Repository	27/1/2014	DSpace	7818	ROAR
10.	Kashim Ibrahim Library, Ahmed Bello University		DSpace		DOAR

When Queensland University of Technology adopted the first ever university-wide open access mandate, Tom Cochrane noted the impact it had on authors and the increase in the number of deposits in the University's institutional repository "QUT EPrint".[33] The adoption of open access mandates has increased since then. So have deposits in institutional repositories.[34] Nigeria does not have any national open access policy, but one of the universities in Nigeria—namely, Covenant University—is said to have adopted a university-wide open access mandate.[35]

Open access journals in Nigeria

Journals that avail users of the opportunity and freedom to use and reuse peer-reviewed literature are often indexed in the Directory of Open Access Journal (DOAJ). This website, which provides an index of most open access journals, currently lists 38 open access journals and 1167 open access articles published in Nigeria. Amongst these journals are *African Journal Online* (AJOL),[36] *Bioline International,*[37] *Academic*

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[30] Available at *http://www.dspace.org/* [Accessed April 9, 2015].
[31] Available at *http://www.eprints.org/software/* [Accessed April 9, 2015].
[32] Available at *http://www.openarchives.org/* [Accessed April 9, 2015].
[33] Tom G. Cochrane and Paula A. Callan, "Making a Difference: Implementing the EPrints Mandate at QUT" (2007) 23 *International Digital Library Perspectives* 262.
[34] Stevan Harnad et al., "The Access/Impact Problem and the Green and Gold Roads to Open Access" (2004) 30 *Serial Review* 310.
[35] UNESCO, "Overview of OA in Nigeria" (noting that the policy was adopted in January 2011 mandating all refereed publications in Journals, conferences and books to be deposited in the university's repository).
[36] Available at *http://www.ajol.info/* [Accessed April 9, 2015].
[37] Available at *http://www.bioline.org.br/journals* [Accessed April 9, 2015].

Online[38] and *Academia Publishing*.[39] Some of these journals are listed as journals and providers, which means they actually serve as both journals and hosts to several journals. The AJOL, for instance, "is the world's largest and pre-eminent collection of peer-reviewed, African-published scholarly journals". Based in South Africa, it currently hosts 468 journals, 8,136 issues, 92,439 abstracts and 86,322 full texts. Nigeria has 209 of the 468 journals spanning through virtually all the academic fields.

Open access journals provide access to peer-reviewed literature free of charge to users. It is, however, without dispute that the cost of producing peer-reviewed journals is not free. The cost of peer review, editing, printing, marketing and other sundry costs are involved. The costs under the open access model are covered by the adoption of different business models. Some journals charge an article processing charge (APC) to cover the production costs (BioMed Central uses this business model).[40] Other open access journals do not charge article processing fees, but seek alternative funding to cover the cost of production (*Murdoch University Law Review* is an example).[41] BioMed Central, one of the world's leading open access commercial publishers with over 258 peer-reviewed open access journals and 482 members in 52 countries, charges an APC for each paper to cover the entire publication process. In acknowledging the inequalities between the global north and the global south, a fund wavier scheme called "open access waiver fund" was instituted in favour of certain least developed and developing countries.[42] Nigeria is not on the list of such countries and may not draw on such privilege. To ease the payment of the APC, authors who are part of the BioMed Central membership programme do not need to pay the APC as such fees are covered by their institutions. There are two Nigerian institutions listed as members: Obafemi Awolowo University and the University of Benin. It is evident that both conventional and open access publishing adopt business models to cover production and other requisite costs. The difference between these two publishing models is that, whilst conventional publishing is unable to achieve visibility, make reasonable impact and maximise the utility of the published work, open access publishing provides access and visibility, and therefore greater opportunities for impact and maximal utility of the published work.

Opening access to developing countries

The wider the access gate, the more information is made available to the public. Whereas the goal is free, immediate, unrestricted, online access to all peer-reviewed literature, several initiatives have been put in place in Africa and other developing countries that have enabled greater access to knowledge. It may not have fully opened up the access gate, but it definitely has shifted from an entirely closed gate. This section will explore those initiatives that have enabled such opening up of access to knowledge.

HINARI

The need to improve the state of health in the developing world as well as the growing gap between academics and researchers in developed and developing countries over access to important peer-reviewed scientific articles prompted both the then secretary general of the United Nations, Kofi Annan, and the director general of the World Health Organization, to make a call for building partnerships that would facilitate the improvement of health in the developing world.[43] It was to this call that six major publishers—namely, Elsevier, Springer, Blackwell, Harcourt Worldwide STM Group, Wolters Kluwer and John Wiley—responded on July 9, 2001 in London. The Health InterNetwork Access to Research

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[38] Available at *http://www.academicjournals.org/* [Accessed April 9, 2015].

[39] Available at *http://www.academiapublishing.org/* [Accessed April 9, 2015].

[40] BioMed Central, "Article-Processing Charge", available at *http://www.biomedcentral.com/authors/apc* [Accessed April 9, 2015].

[41] Available at *https://mdulr.murdoch.edu.au/index.php/mdulr* [Accessed April 9, 2015].

[42] BioMed Central, "Open Access Waiver Fund", available at *http://www.biomedcentral.com/authors/oawaiverfund* [Accessed May 6, 2015].

[43] World Health Organization [WHO], "Publishers' Statement of Intent", available at *http://www.who.int/hinari/statementofintent/en/* [Accessed April 9, 2015].

Initiative (HINARI) was set up with the aim of providing local, not-for-profit institutions in developing countries with free or very-low-cost online access to the major journals in biomedical and health sciences. Today, the partnering publishers have grown from 6 to about 160, and they supply in excess of 42,000 information materials.[44]

In implementing this initiative, the publishers put in place a structure that would identify bona fide academic and research institutions. This structure was established because the idea was to provide neither global nor free access. Rather, the goal was to open up access by providing low-cost access and, where it deems fit, free access. The metrics used in determining countries that would fall within the two-tiered access system of either free or low-cost access was whether the World Bank listed such countries as low- or lower-middle-income countries. The access granted was to be restricted to only biomedical and health information. Access authentication was also put into the HINARI access structure. Nigeria fell into the free access stream within the HINARI access structure. Beneficiaries of this initiative were expected to have computers with high-speed Internet connections of at least 56K bandwidth. They were also expected to comply with registration formalities.

At the time, this initiative was an opening to a closed door. It surely did not provide clear-cut open access, but it at least provided some form of opening to the prior toll-and-closed access. The challenges with the initiative was that access was provided to only specific institutions; even within these institutions, access was highly restricted and was therefore not open to everyone. Worse still, the materials could only be accessed at specific locations, and thus ease of working from different locations was unavailable. The access provided was highly restricted in that it was narrowed down to only biomedical and health information. All other fields were locked out. The Internet and computer requirements were other challenges, particularly when considering the poor Internet infrastructure in Africa and the bad power situation. Nonetheless, it was a step out of the dark room where the access doors were entirely closed.

INASP

The International Network for the Availability of Scientific Publication (INASP) is a charity set up in the UK in 1992 with the goal that developing countries should be able to access the world's wealth of scientific information. It works with a global network of partners to improve access, production and use of research information and knowledge. INASP currently operates within over 70 countries and has over 1,800 partners. It supports librarians, information technology staff, editors and policymakers and collaborates with the different country partners to provide online scholarly literature to countries across Africa, Asia and Latin America. In the area of furthering the cause of open access, INASP works closely with libraries to provide them with access to millions of journal articles. INASP also focuses on interpersonal development of authors by providing AuthorAids, an initiative which provides capacity building to authors and assists them in the process of publication. This initiative affords beneficiary authors the opportunity for visibility and high impact of their work. The 2012–2013 report of the organisation tells the success story of two AuthorAids recipients who successfully published their research findings in reputable journals through the help of AuthorAids.[45] One of the landmark successes of INASP was the launch in 1998–1999 of African Journal Online.[46]

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[44] WHO, "About HINARI" (2014), available at *http://www.who.int/hinari/about/en/* [Accessed April 9, 2015].
[45] INASP, *Annual Review (2012–13)* (Oxford: INASP, 2013), pp.10–11, available at *http://www.inasp.info/uploads/filer_public/2013/10/24/2012 -2013_annual_review.pdf* [Accessed April 9, 2015]. The review was conducted by Rhoune Ochako (Kenya) and Bezaye Taye (Ethiopia).
[46] INASP, *Annual Review (2012–13)* (2013), pp.10–11. On the history of the organisation, see INASP, *Annual Review (2012–13)* (2013), p.7.

AJOL

African Journal Online (AJOL) is the largest collection of African peer-reviewed journals, and it is indexed in the DOAJ.[47] Its development became necessary to address the dearth of platforms providing visibility for knowledge developed by Africans to the African and global communities. AJOL thus became the first African online journal dedicated to advancing African knowledge. This platform seeks to transform African knowledge to African development by increasing the accessibility, visibility, impact and utility of African research outputs. It is a platform in which Africans can showcase their works and can search for works by other Africans. The old saying that "he who pays the piper dictates the tune" underscores the vision of AJOL as an African concern taking her destiny in her own hands. The website of AJOL notes as follows:

> "At the same time as online academic resources from the developed Global North are made available to Africa (such as HINARI, AGORA and OARE), there needs to be corresponding online availability of information from Africa. Important areas of research in Africa are not necessarily covered by publications from the developed world. African countries need to collectively play a greater role in the global online scholarly environment. African researchers also need access to their own continent's scholarly publications.
>
> Mainly due to difficulties accessing them, African-published research papers have been under-utilised, under-valued and under-cited in the international and African research arenas. The internet is a good way to change this, but many hundreds of worthy, peer-reviewed scholarly journals publishing from Africa cannot host their content online in isolation because of resource limitations and the digital divide.
>
> Valuable information has not reached the people who need it."

AJOL achieves her vision by freely hosting African journals and currently hosts over 460 peer-reviewed journals in over 30 African countries. About 130 of these journals are open access journals. The hosted journals are not restricted to any particular field. They cover the medical and health sciences as well as social sciences, humanities, law, agriculture and virtually all fields. AJOL maximises the benefits of the open environment by operating solely on open source software. It uses the open journal systems[48] (OJS) developed by the Public Knowledge Project in Canada and runs the PHP scripting language as well as MySQL for its database management system. Its web server uses the Apache software and runs on a Linux operating system.

AGORA

There are other initiatives advancing the cause of not just access to knowledge but free access to knowledge. There is the Access to Global Online Research in Agriculture (AGORA) which was sponsored by the United Nations Food and Agriculture Organization.[49] This initiative is focused on providing the outputs of research on issues around food, agriculture, environmental sciences and related social sciences. Designed to enhance scholarship in developing countries, it provides a collection of more than 3,500 key journals and 3,300 books to 2,500 institutions in over 116 countries.

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[47] Available at *https://doaj.org/* [Accessed April 9, 2015].
[48] Available at *http://pkp.sfu.ca/ojs/* [Accessed April 9, 2015]. The OJS is a management and publishing system aimed at expanding and improving access to research.
[49] Available at *http://www.aginternetwork.org/en/* [Accessed April 9, 2015].

OARE

Online Access to Research in the Environment (OARE) is another initiative focused on providing access to knowledge—this time, knowledge about the environment.[50] It was initiated in 2006 by the United Nations Environment Programme in partnership with the major publishers. It currently has over 5,710 peer-reviewed scientific journals made available by about 461 of its partners to over 100 eligible low-income countries. This initiative provides the world's largest collection of environmental scientific research and has the vision of providing access to this information, improving the quality and effectiveness of environmental sciences, research, education and training in low-income countries.

ARDI

There is also the Access to Research for Development and Innovation (ARDI) coordinated by the World Intellectual Property Organization in partnership with the major publishers for the purpose of increasing availability to scientific and technical information in developing countries.[51] It currently partners with about 17 publishers and has about 10,000 journals available to over 107 developing countries.

Siyavula

Siyavula is another African initiative focused on opening up the access gate to knowledge.[52] It is based in South Africa and provides educational resources to students at no cost. It seeks to join hands in the global action towards access to knowledge by developing and providing for free, educational resources to students on the platform of the Internet.

African LII

The African Legal Information Institute (African LII) provides free access to Kenyan legal resources.[53] It is helping to shape African law and provides access on legal knowledge to all willing minds.

SSRN

The world's largest repository, the Social Science Research Network (SSRN), recently set up a journal dedicated strictly to works relating to African law.[54] It was sponsored by seven law schools, six of which are American and one African (University of the Witwatersrand). The African Law eJournal currently has received visits with over 86 million paper downloads.

All of these initiatives provide a wider gate for access to knowledge. Some merely provide better opportunities for access to knowledge through lower-priced regimes (also referred to by Leslie Chan, Barbara Kirsop and Subbiah Arunachalam as donor access[55] and by John Willinsky as per capita open access).[56] Meanwhile, others comply with the expectation set for open access in the Budapest, Bethesda and Berlin statements and provide to Nigerians—and indeed all users—free, online, permanent and unrestricted use and reuse rights to their peer-reviewed literature.

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[50] Available at *http://www.unep.org/oare/AboutOARE/tabid/129711/language/en-US/Default.aspx* [Accessed April 9, 2015].
[51] Available at *http://www.wipo.int/ardi/en/* [Accessed April 9, 2015].
[52] Siyavula, "Our Story", available at *http://siyavula.com/who-we-are/our-story/* [Accessed April 9, 2015].
[53] Available at *http://www.africanlii.org/* [Accessed April 9, 2015].
[54] Social Science Research Network, "Announcing New LSN African Law" (2014), available at *http://www.ssrn.com/update/lsn/lsnann/annA004 .html* [Accessed April 9, 2015].
[55] Barbara Kirsop, et al., "Access to Scientific Knowledge for Sustainable Development: Options for Developing Countries" (2007) 52 ARIADNE, available at *http://www.ariadne.ac.uk/issue52/kirsop-et-al* [Accessed April 9, 2015].
[56] Willinsky, *The Access Principle* (2006), pp.215–216.

Open Access implications for Nigeria

The impact of open access within the wider scope of access to knowledge has been explored as well as a number of initiatives that have been developed to further availability and access to the outputs of scientific research. This section will look at the likely implications of open access for Nigeria.

When an idea is born, it is important to ask what it is, why it was born, who proposed the idea, what problems it intends to address, the targeted audience for the idea, the pillars on which the idea stands and is expected to be implemented, the proposed mode of implementation and how the idea might create impact, be it positive or negative. These questions may seem trivial and at the same time may appear to be apparent, but these are the questions that I believe developing countries need to ask with regard to open access in order to put themselves in a position of strength when intermingling with the concept of open access and the general concept of open.

What is it?

Open access is about making the outputs of research (journal articles) freely available for use and reuse via the platform of the Internet.

Why was it born?

It arose as a reaction and a solution to the problem of a growing inability to access knowledge, particularly knowledge within journal articles. This inability has been linked to legal, price and technical structures erected around the process of generating and distributing knowledge.[57] The legal structure refers to intellectual property laws, particularly copyright law which grants right owners the right to exclude all others from using or reusing works except where authorisation has been obtained or where a limitation or an exception applies.[58] The price structure refers to subscription and pay-per-view fees which are business models developed by publishers for granting access to the wealth of knowledge published and locked up behind their pay walls. The technical structure refers to technological inventions that enable right owners to monitor, regulate and control use of their content by means of digital rights management and technological protection measures imputed on devices carrying copyrighted contents.

Who proposed the idea?

The idea was the combination of several minds who were agitated by the barriers to access and who were part of the wider pressure group interested in seeing access to knowledge with regard to medicine, software, education and information.[59] The Budapest Open Access Initiative (BOAI) meeting in Hungary on February 14, 2002 appears to be the reference point and is actually where the phrase "open access" was coined.[60] That meeting had 16 members in attendance, all representing the global north.[61] It therefore suffices to say that the idea of open access was not developed in the global south, nor was the global south a major player at the conceptualisation stages of this idea.

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[57] Peter Suber, *Open Access* (Cambridge, MA: MIT Press, 2012), p.8 (noting that the basic idea of open access is to "make research literature available online without price barriers and without most permission barriers"); Willinsky, *The Access Principle* (2006), p.18 (referring to the joint statement from a librarian and universities association stating that "[t]he current system of scholarly publishing has become too costly for the academic community to sustain").

[58] Kunle Ola, *Copyright Collective Administration in Nigeria Lessons for Africa* (Berlin: Springer, 2013), p.4.

[59] David Bollier, *Viral Spiral: How the Commoners Built a Digital Republic of Their Own* (New York: New Press, 2008).

[60] Mellisa Hagemann, "Ten Years on, Researchers Embrace Open Access", available at *http://www.opensocietyfoundations.org/voices/ten-years-on-researchers-embrace-open-access* [Accessed April 9, 2015].

[61] "Budapest Open Access Initiative", available at *http://www.opensocietyfoundations.org/openaccess/read* [Accessed April 9, 2015]. The names of those who signed the initial statement are listed at the end of the document.

What problems it intends to address?

The intent of this initiative was to address the barriers to open access, the structures and business models that had enabled a growing closure to vast wealth of knowledge.[62]

The targeted audience for such ideas

The potential beneficiary is meant to be the whole world, but in reality it is any curious mind who possesses Internet connectivity, a computer device and the basic skills to navigate the Internet to find the requisite information.[63]

The pillars on which the idea stands

Two key factors are cardinal to the success of open access. The first is the willingness of authors to publish their journal articles for free and to participate in the peer-review process without the expectation of any financial remuneration. The second is the Internet.[64]

The mode of implementation

Two strategies were suggested at the BOAI meeting, and these two strategies have apparently been the modus operandi for the implementation of open access. Although they appear in different flavours, the two basic strategies are self-archiving and open access journal publishing.[65] Self-archiving refers to putting up an electronic version of one's work online for free. The electronic version often put up and permitted by publishers is the pre-print version. However, some publishers allow the post-print version to be uploaded online.[66] The other strategy is the open access journal publishing model. This refers to publishing in a journal which makes the articles freely available to users and recoups investments through alternative business models such as APC, donations from funders, sale of print copy or some other business models. Some of these journals place an embargo on the opening of the articles to enable them to recoup their investment. After the embargo period, the articles become free to use and reuse (delayed open access).[67] Other publishers maintain the traditional publishing model with toll access, but provide the opportunity to willing authors to pay a fee that would enable open access to their materials (hybrid open access).[68]

Clearly there are merits to open access, but demerits also exist. The next section will look at the positive and negative sides of open access.

Merits

Accessibility, visibility, impact and utility

Open access has the potential to increase the accessibility, visibility, impact and utility of an author's work. The potential for these four impacts is possible considering that once an author is able to upload his or her work through self-archiving or is able to publish it via an open access journal, the work will become freely available on the Internet and to anyone with Internet connectivity, a computer device and,

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[62] Alma Swan, *Policy Guidelines for the Development and Promotion of Open Access* (Paris: UNESCO 2012).
[63] "Budapest Open Access Initiative".
[64] Peter Suber, "Timeline of the Open Access Movement", available at *http://www.earlham.edu/~peters/fos/timeline.htm* [Accessed April 9, 2015].
[65] Sha Li Zhang, "The Flavors of Open Access" (2007) 23 *International Digital Library Perspectives* 229, 231–233 (discussing the different flavours of open access).
[66] Romeo Sherpa, "Publisher Copyright Policies & Self-Archiving", available at *http://www.sherpa.ac.uk/romeo/PDFandIR.html* [Accessed February 2, 2015] (providing for the different categories of publisher that grant access and the terms on which they are granted).
[67] "Delayed Open Access", available at *http://en.wikipedia.org/wiki/Delayed_open-access_journal* [Accessed April 9, 2015].
[68] "Hybrid Open Access", available at *http://en.wikipedia.org/wiki/Hybrid_open-access_journal* [Accessed April 9, 2015].

for those in developing countries, the requisite power supply and basic computer literacy. That information becomes not only available but accessible. It will also become visible on a global scale. Thus, it is not only those members of a certain association or an elite group that have the privilege to read or interact with the knowledge; this time, the Internet provides global visibility to that particular work and creates the possibility for people from all over the world to gain from the knowledge and refer to it in their research. This, in turn, contributes to impact factors for both the author and his or her institution and provides the platform and possibility for the widest utility of the work.[69]

Sharing knowledge

Other possible positive impacts for developing countries include what was captured in the BOAI Meeting: *"sharing the knowledge of the rich with the poor and the poor with the rich"*. Put another way, *sharing the knowledge of members of developed countries with members of developing countries and the knowledge of members of developing countries with the knowledge of members of developed countries*. I have suggested this new slant because rich and poor is relative—and without a doubt, so is developed and developing countries. Since this article focuses on knowledge, an ephemeral commodity that is not easily quantifiable, the cloak of rich and poor appears to cast aspersion on the quality of knowledge with regard to the knowledge of the rich and the knowledge of the poor, sending a superiority/inferiority signal and thereby setting an unequal ground from the outset. However, the possibility for a platform for sharing knowledge is what is vital as it provides limitless opportunities for development and is an important advantage to members of developing countries.[70]

Access to the World's Library

Open access will provide developing countries with the possibility for access to the vast resources of the world's wealth of knowledge. I call this access to the World's Library—an access which before now was locked up and for which institutions in developing countries could not afford, meaning that her people were unable to access needed research materials.

Global and local visibility

Open access provides the platform for global and local visibility to works authored by members of developing countries. Global visibility was practically impossible prior to the open access initiative. Most journals published in developing countries were circulated within the associations that produced them, and what compounded the problem was that the major publishers were not aware of such works. Even when they were aware, they rarely indexed such works amongst their collection. Thus, these works were not within the rank and file of materials that could be located if a search was conducted. Thanks to the Internet and open databases and indexes, works authored by members of developing countries can now enjoy both global and local visibility. The possibility for local visibility is particularly interesting, because, prior to the advent of open access, works authored within the same developing country jurisdictions were usually not visible due to poor channels of distribution and circulation and to the fact that these works were not included in the major commercial indexes for journal articles.[71]

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[69] Harnad et al., "The Access/Impact Problem and the Green and Gold Roads to Open Access" (2004) 30 *Serial Review* 310.

[70] Michael Finger and Philip Schuler, *Poor People's Knowledge Promoting Intellectual Property in Developing Countries* (Washington, DC and Oxford: World Bank and Oxford University Press, 2004).

[71] Leslie Chan, Barbara Kirsop and Subbiah Arunachalam, "Towards Open and Equitable Access to Research and Knowledge for Development" (2011) PLoS Med 8(3): e1001016.

Digitisation and preservation of works or heritage

The practice in so many developing countries is to conduct research—be it thesis or dissertation, research articles, government commissioned research or some other form of research. The outputs of this research are then locked up in some cabinet where they rot away and no one has access to them. Open access provides several advantages to such works. The first is the prospect for digitisation and preservation of such works. Digitised works cannot be torn, burnt or eaten up by termites. They are therefore better preserved. It is true that digitised works can be destroyed due to corruption of the device on which such information is held, but this is often taken care of by backing up such documents. Open access also provides such work with the possibility of being read by anyone in the world. Thus, the product of such research is able to enjoy not only global visibility, but has the potential of being maximally utilised. In preserving works, one of the fundamental things achieved is the preservation of knowledge. For Nigerians and nations with rich cultural heritage, preservation of knowledge provides an opportunity to preserve the cultural heritage of a people. In a nutshell, open access provides the opportunity for bringing alive works that were virtually dead as well as for preserving works and, in turn, the cultural heritage of a people—heritage that in many cases is slowly gliding into extinction.

Avoiding duplicity

In the absence of a platform like open access which freely shares the outputs of research, duplication is inevitable. In so many organisations, whether in developed or developing countries, the duplication of research is unfortunate. So often, what Organisation A is researching on is what Organisation B has worked on and may have already produced credible and useful reports and data. However, because of the lack of a system to freely share such information and data, the same research is duplicated and scarce resources which could have been deployed to some other highly needed areas are re-invested into the same research, which simply amounts to re-inventing the wheels and wasting taxpayers' money.

Learning without barriers

Through an initiative relating to open access, open educational resources afford members of developing countries the opportunity to learn from the minds to which they otherwise would not have had access. Examples abound with organisations such as Khan Academy that provides video recordings on YouTube for free use and reuse on virtually any topic within the sciences. What is even more interesting is that these educational resources are provided for all strata of society, even for those at the elementary level. A look at the Khan Academy website shows that education resources are even available for those as low as Grade 3. The academy states that its mission is to provide "a free world-class education for anyone anywhere":

> "The website features thousands of educational resources, including a personalized learning dashboard, over 100,000 exercise problems, and over 4,000 micro lectures via video tutorials stored on YouTube teaching mathematics, history, healthcare, medicine, finance, physics, general chemistry, biology, astronomy, economics, cosmology, organic chemistry, American civics, art history, macroeconomics, microeconomics, and computer science. All resources are available for free to anyone around the world. Khan Academy reaches about 10,000,000 students per month and has delivered over 300,000,000 lessons."

Similarly, we have several other initiatives that provide the opportunity for free learning via the Internet. There is the Wikiversity closely associated with Wikipedia,[72] the Open School of Learning (P2PU) run

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[72] Available at *http://en.wikiversity.org/* [Accessed April 9, 2015].

by Creative Commons[73] and CopyrightX providing lectures prepared and delivered by Professor William Fisher of Harvard Law School.[74] All of these initiatives provide high-quality standard education at no cost to any willing mind and allow the reuse of these materials. Learning within these parameters basically has no limit. You can learn when you want to and how you want to. You are able to control the use of your resources. If it is a video, you may stop the video, take it back and listen again. In some instances, you are also able to type in your question and receive feedback from the moderators. The innovation to learning is simply transformative and affords unprecedented learning opportunities to willing minds.

Demerits

Consuming partners

Could an initiative such as this have any negative effects? Open access in its contextual form is meant to provide an avalanche of information and should provide it at the click of a mouse via the Internet. The first negative impact I see is that it holds the potential of turning developing countries into consumption partners in the knowledge creation and sharing relationship. Although this may not be the objective, the likelihood of its occurrence seems apparent, and this is so considering that the vast majority of information in the global north is already digitised and online and that the current stock of information in the world's major libraries is made up of writings from the global north.

The simple reasoning is that, based on probability, if there are 10 balls in a basket with 9 of them red and only 1 blue, the probability of my picking a blue ball is only 1 out of 10. This is the same probability for accessing knowledge from the open access pool. What is likely to be accessed is information located within the global north. It is clear that open access affords the opportunity for all to share, use and, where permitted, reuse information. When one considers what is within the pool of the world's vast resources of knowledge, developing countries have a tendency to become more of knowledge consumers than knowledge contributors. This is so because there is already the complaint of knowledge explosion. Within developing countries, there is also a tendency to tilt the educational system in favour of western educational materials.

It is also important to think about the fact that before developing countries are able to digitise and make their knowledge fully available, there is the fear that the knowledge accessible (that is knowledge within the global north) is the knowledge that would be accessed and utilised. That being the case, a pattern of knowledge consumption by members of the developing countries may have been established.

Lopsided knowledge sharing

Open access from a global perspective should work towards promoting a balanced knowledge sharing relationship, not a lopsided one. It is a relationship which BOAI described as sharing knowledge and not merely consuming knowledge. This concern is of particular interest when consideration is given to how Hollywood has invaded the cultural lives of many nations, influencing their national characters and sometimes eroding and even eradicating such cultures. This *concern of a cultural re-orientation and a possible loss of cultural heritage* through too much exposure to western knowledge poses concerns to open access.

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[73] Available at *http://schoolofopen.p2pu.org/* [Accessed April 9, 2015].
[74] Available at *http://blogs.law.harvard.edu/copyrightx/* [Accessed April 9, 2015].

Digital divide

The other challenge lies in the fact that open access is structurally built to function technologically. It is common knowledge that the global south suffers from technological retardation and that the digital divide amongst other factors have de-capacitated the global south from operating at the level of the global north. One of the two major pillars of open access is the Internet. Now, if open access is structured to work based on a technological leg which the global south is known not to have, the question over whether the global north has actually contemplated the participation of the global south may arise.

One may answer this question by noting the expectation that the global south will eventually catch up with technological advancements and connect with the global move towards open access. The rationality of catching up, however, is still in question, when consideration is given to the rate of technological growth in the global north and the fact that people within the global south are barely able to keep pace with technological change.[75] This being the case, how then can it be reasonably expected for the global south to catch up with the technological advancements in the global north?

Infrastructural challenges

The problems associated with open access and the digital divide is further compounded by a lack of regular power supply in most developing countries and, worse still, a lack of basic computer literacy. I must state that all of these challenges are no fault of those who have initiated the idea of open access. In fact, the idea is intended to provide platforms and a level-playing field for all regardless of class, nationality, wealth, position or status. However, in taking advantage of these platforms, it is important for anyone engaging with the concept to understand the complexities around utilising them and, where necessary, erect structures for the preservation of knowledge and heritage and the widest possible utility for these platforms.

The fear is to ensure that open access does not amount to a creativity killer by its provision of free and reuseable information. The concern is to ensure that researchers can look up works that have already been researched and yet take the next step to build upon it. The concern is for teachers to look up materials that have already been created—not just copy and paste them, but take the time to adapt them to local needs, thereby adding value to the content. The concern is for developed countries to not become mere consumers of the already available and free knowledge, but actual contributors to the vast wealth of the world's knowledge. The purpose of highlighting these concerns is not to distance developing countries from open access, which will only adversely affect the countries concerned. Rather, it is to build a consciousness for strategic engagement with open access to the end that the initiative will serve as a propelling force for development.

Conclusion

The possibilities made available by the open access publishing model are numerous. It provides the platform for visibility, accessibility, impact and utility. However, those in the global south appear prone to becoming consuming partners in the open access knowledge market if proper strategies are not put in place to effectively benefit, contribute and engage with the dynamics of this new publishing model. Open access no doubt provides an avalanche of information. The more the information going into the global pool, the more its possibility for maximal impact. If this avalanche of information unfortunately breeds a sense of complacency in the global south and leads developing countries not to develop their own knowledge, it could lead to a steady eradication of local knowledge, culture and heritage. This could bring about a gradual re-colonisation—this time, not one forcefully annexing the physical territory, but a willing surrender of the mind through assimilation of ideas and information.

[75] Michael Strangelove, "The Internet as Catalyst for a Paradigm Shift" (1994) 1(8) *Computer-Mediated Communication Magazine* 7.

The central purport of open access is to democratise access to knowledge, thereby enabling willing minds to explore without barriers. Maximising the benefits of open access can be best achieved by engaging as contributors and not mere consumers to the pool of information within the open access to knowledge market.