

# Chapter 11

## Emerging Issues in Open Access Initiatives in Africa

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### ABSTRACT

*Access to scholarly publications in the 21<sup>st</sup> century has been greatly enhanced with the emergence of open access initiatives the world over. This new trend has contributed immensely to the development of a global scholarly communication system. This chapter investigates various facets of the Open Access (OA) movement and its growth in Africa. It highlights different roles played by organizations, libraries, publishers, and researchers in the development of OA. Furthermore, the chapter discusses the benefits and challenges of OA to various stakeholders. It concludes with recommendations on how to improve open access in Africa.*

### INTRODUCTION

Access to scholarly publications in the 21<sup>st</sup> century has been greatly enhanced with the emergence of open access initiatives the world over. This new trend has contributed immensely to the development of global scholarly communication system. The developments in Information and Communication Technology (ICT) especially the Internet and World Wide Web (WWW) in 1990s have facilitated dynamic scholarly collaboration in the production, dissemination and exchange of knowledge.

The academic community, before the advent of Internet, relied heavily on research articles in printed format, which are mostly published by commercial based outlets and made available to individuals, libraries and institutions that can afford the subscription fees (Vij, 2012). Scholars especially in developing countries, where libraries are hardly funded experience difficulties in getting access to recent information both in print and electronic format. Even, libraries in developed world struggle to purchase all scientific publications that are central to their objectives. This situation affects the quality of research output as a result of access restriction. According to Iwighrehweta and Onoriode (2012) restricted

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access to knowledge restricts the development of science and has severe effects on generality of the people in any society.

The evolution of ICT has facilitated information generation, dissemination and sharing among scholars. Now, Internet has become a bridge that links scholars to vast collection of information resources. It continues to make changes in every aspect of human endeavour, and reshapes scholarly communication in many ways. This development has also given rise to various movements aimed at enabling free and open access to information irrespective of users' economic, social, and geographical background. One of such initiatives that drive this concept is the open access movement.

Open access movement is a new trend that promotes free, seamless, online digital access to scholarly publications. This model of scholarly publication has changed the landscape of communication especially in the developing nations. However, the problem of digital divide in the developing nations constitute technical barrier to open access publication.

The African countries being developing nations have variety of issues battling with their accessibility of scholarly publications. What can be done to address this issue? The open access movement strongly believes it has an answer to this critical question. Therefore, this chapter tends to examine trends in open access movements, its dramatic growth, benefits, and challenges in Africa. The noble objective of open access will not be realized, if scholars in developing countries merely constitute "active consumers" and "passive contributors" (Jain, 2012).

## **BACKGROUND**

The revolution of Open Access since early 1990s has liberated libraries and Information Centers all over the world. The era of open access is dawning and it could not come a moment later. Open Access to information is an innovative mode of scholarly communication within the digital environment aimed at achieving universal access

to knowledge. Many attempts toward defining the concept of open access have been advanced by scholars, according to Zuccala et al. (2008) the term open access has been given a variety of definitions while its meaning is still evolving. Series of meetings have been organized by OA stakeholders at various locations to harmonize different forms of definitions.

In 2002, Budapest Open Access Initiative defined OA as "free availability on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself".

In another dimension, Bethesda meeting of April 2003 identified two conditions which OA definition must meet:

- The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.
- A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving (for the biomedical sciences. PubMed Central is such a repository).



Another landmark meeting was held in October, 2003 where a pragmatic approach toward achieving OA was made in Berlin tagged "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities". In order to realize the Berlin Declaration, institutions were mandated to implement a policy to:

- Require their researchers to deposit a copy of all their published articles in an open access repository.
- Encourage their researchers to publish their research articles in open access journals where a suitable journal exists (Bailey, 2006).

Budapest definition of OA is elaborate, though certain concept was left out which was observed by Bethesda declaration. Bethesda identifies two strategies to open access policy, which are journal open access and self archiving. Berlin declaration came up with an approach aimed at enhancing achievement of OA policy. Suber (2008) referred to these definitions as BBB (Budapest, Bethesda, Berlin) definition of open access, he notes that these collective definitions remove both price and permission barriers. Removal of price and permission barriers will promote open access in developing countries where price and permission constitute major barrier to scientific journal articles.

Open access could be described as any information content that is digital, online, and freely available to users at anywhere, any place without any charges or forms of restriction. Suber (2010), in his open access overview, defined OA as a literature that is digital, online, free of charge, and free of most copyright and licensing restrictions. The concept of open access according to Vij (2012) emerged as a response to the restrictive access to knowledge in scholarly and scientific journals imposed by commercial publishing houses via subscription fees, license fees or pay-per-view fees.

A critical look at the various definitions of OA shows the following characteristics as identified by Jain (2012):

- It is free availability of scholarly publication.
- It is free of copyright and licensing restrictions.
- Materials are available online or on the Internet.
- Material is full text.
- Material can be accessed by anybody from anywhere without any discrimination.
- Material can be freely used by anyone.
- Open Access contents can be in any format from texts and data to software, audio, video, and multi-media, scholarly articles and their preprints.

The stakeholders in information generation and dissemination (*organizations, publishers, libraries, and researchers/authors, readers*) have realized the benefits of open access and the need to implement and promote it as a matter of urgency in their various constituencies. The emergence of OA has widened the roles played by the stakeholders as discussed in this chapter.

## **Types of Open Access**

John Willinsky in 2006 identified ten types of open access as discussed below:

- **Home page:** University department maintains home pages for individual faculty members on which they place their papers and make them freely available (e.g. <http://www.unilorin.edu.ng>, <http://www.econ.ucsb.edu/~tedb/>).
- **E-print archive:** An institution or academic subject area underwrites the hosting and maintenance of repository software, enabling members to self-archive published and unpublished materials (e.g. [arxiv.org](http://arxiv.org).)



- **Author fee:** Author fee support immediate and complete access to open access journals (or in some cases, to the individual articles for which fees were paid) with institutional and national memberships available to cover author fees (BioMed central, PubMed central)
- **Dual mode subsidized:** Subsidy from scholarly society, institution and or/ government/foundation enable immediate and complete access to open access (e.g. First Monday)
- **Partial open:** Access is provided to a small selection of article in each issue-serving as a marketing tool-whereas access to the rest of the issue is on request subscription (e.g. Lancet)
- **Delay:** Subscription fees are collected for print edition and immediate access to on-line edition, with open access provided to content after a period of time i.e six to twelve months (e.g. New England journal of medicine)
- **Per capital:** Open access is offered to scholars and students in developing countries as a charitable contribution with expenses limited to registering institutions in access management system (e.g. HINARI)
- **Indexing:** Open access to bibliographic information and abstracts is provided as a government services or for the publishers, a marketing tool, often with links to pay-per-view for the full text of articles (e.g. Science Direct)

### **Open Access Movements**

The evolution of Open Access movement in the present information society has been grabbing attention worldwide. It has dominated the publishing industry news as well as many academic debates, symposiums, meriting special issues in journals. Librarians, publishers, and authors alike have begun to consider the implications of this alternative.

As part of efforts toward achieving this goal. In 2001, the Open Society Institute (OSI) convened a meeting of prominent scholarly communication change agents in Budapest, this meeting strongly influenced open access movement. The purpose of the meeting was to accelerate progress in an international effort to make articles in all academic fields freely available on the Internet (Bailey, 2006). Scientific Publishers'

Public Library of Science (PLOS) is a non-profit organization committed to making scientific and medical literature a freely available public resource. In 2001, PLoS circulated 'an Open Letter signed by about 30,000 scholars around the world calling for an establishment of online public library that would provide the full contents of the published records of research (Ramachandran, 2004). This led to the establishment of the Public Library of Science (PLOS), an advocacy organization for OA promotion.

### **Dramatic Growth of OA in Africa**

Since early 1990s, researchers have discussed the potential for Open Access (OA) publishing to revolutionaries scholarly communication (e.g. Harnad, 1999, 2005; Harter and Kim, 1996). In line with this assertion, IFLA acknowledges the fact that peer reviewed scholarly literature is a vital element in the processes of research and scholarship. As a result, it declares that the world-wide network of library and information services should provides access to past, present and future scholarly literature (IFLA, 2003). The World Summit on the Information Society included open access in its Declaration of Principles and Plan of Action (DPPA).

The effects of these declarations are the various open access initiatives that have facilitated access to scientific research worldwide. Despite the digital divide between developed and developing nations, efforts have been made to use the open access initiatives as a means of bridging the gap in knowledge sharing. Africa as one of



- Advocating that open access publication be recognized in promotion and tenure evaluation.
- Advocating the intrinsic merit of contributions to an open access infrastructure by software tool development, content provision, metadata creation, or the publication of individual articles.

Other contributions of organizations to the development of open access are:

- UNESCO promotes development of advocacy initiatives and awareness-raising for OA to scientific information and research (UNESCO, 2011)
- IFLA will work with global organizations and fora such as UN, UNESCO, WHO, WIPO, WSIS and others in promoting and advocating open access to publicly funded research, educational resources and cultural heritage (IFLA, 2003).

## **ROLE OF LIBRARIES IN OA DEVELOPMENT**

Open access does not require that libraries do anything for it to exist. It has not been designed with libraries as its foundation. However, it fulfills a fundamental value of librarianship, access to information, and is a key to developing an effective, affordable scholarly communication. Library as one of the main stakeholders in open access has copious roles to play as testified by Crow (2002) he articulated the roles of libraries in institutional repositories as follows:

- Academic libraries retain responsibility for managing and archiving traditionally published print materials.
- Libraries can most effectively provide much of the expertise in terms of metadata tagging, authority controls and the other

content management requirement that increases access to and usability of the data.

- Library budget makes provision for programmes that supports faculty open access publishing activities.
- Libraries are best suited to provide much of the document preparation expertise (document format control, archival standards etc) to help authors contribute their research to institution's repository.
- Many library associations have either signed major open access declarations, or created their own for examples, IFLA Declaration on open access, Canadian Library Association Resolution on Open Access, etc.
- Many institutions now have repositories to store and make available institutional assets such as research papers and theses. In most cases, the library runs the repository on behalf of the institution and these could be achieved by carrying out the following functions:
  - Promoting the repository through their established links with researchers and academic departments.
  - Using their knowledge management skills to help populate the repository with full text records and appropriate metadata.
  - Using their understanding of academic publishing and copyright to ensure that researchers understand what can be deposited in the repository and on what terms.
  - Employing their bibliographic expertise to check records and improve their accuracy.

## **Role of Publishers in OA Development**

The publishers especially those that embraced online publishing have been playing important role in the development of OA for example:

- Organized seminars and workshops for new members to discuss issues related to OA.
- OASPA (Open Access Scholarly Publishers Association) offer forum for bringing together the active community of OA journal publisher.
- They have provided free online full-text editions of their books alongside priced, printed editions.
- Provides readers free access to online articles.
- Divert substantial amount of money realized from subscription based journals to open access journals.

## **Authors/Researchers' Role in Open Access Development**

The role of authors in open access development cannot be over emphasized as a stakeholder. Authors play the under listed roles:

- Authors create intellectual content and make it available to open access publishers.
- Authors foot the bills for the readers to enjoy free access through author- pays subscription model.
- Authors make their articles freely available online through their organizational / institutional repository.
- Authors make provision for readers to copy, distribute, and transmit the work and make derivative works.
- Authors at time do editorial work free in order to ensure good quality articles for readers.

- Authors assist users to preserved knowledge for future use.

## **Benefits of Open Access**

Open Access (OA) has presented many opportunities to all stakeholders. Suber (2004) cited in (Jain, 2012) eloquently spelled out opportunities presented by OA to various groups of people as discussed below:

### **Authors**

- OA gives author a worldwide audience larger than that of any subscription-based journals.
- OA enhances research partnerships for authors and removes professional isolation (Willinsky, 2010, Suber, 2010).
- Authors benefit from high rate of citation of their work in open access model.
- OA publishing ensures quick publication of authors' intellectual work.

### **Readers**

- OA gives readers barrier-free access to the literature they need for their research.
- It increases their convenience, reach, and retrieval power.
- Readers access OA content 24/7.

### **Libraries**

- OA solves pricing crisis and permission crisis i.e (serial crisis) for scholarly journals.
- OA serves library's interests by helping users to find the information they need, regardless of the budget-enforced limits on the library collections.
- Librarians help faculty to increase their audience and impact and thereby raised university research profile.



### Funding Agencies

- OA increases the return on agency investment in research.
- OA serves public funding agencies by providing free access to the results of publicly-funded research (Suber, 2010).
- It makes the results of the funded research widely available, discoverable, retrievable, and more useful.

### Gov. and Non-Gov. Organizations

- As funders of research, governments benefit from OA in all the ways that funding agencies do.
- OA strengthens economies through developing a strong and independent national science data base (Giarlo, 2005; Canada, 2009).
- OA also promotes democracy by sharing government information as rapidly and widely as possible.
- OA incorporates local research into all interoperable network of global knowledge.
- OA reduces acquisition budget and increases access to vast intellectual content.
- OA projects image of University through wide accessibility of faculty's research output.

### Publishers

- OA makes journal articles more visible, discoverable, retrievable, and useful.
- Superior visibility of OA can be used to attract submissions and increase advertisement.
- OA enhances publishers reputation.

## CHALLENGES FACING OPEN ACCESS IN AFRICA

*Inadequate budget allocations:* Good number of African countries has no political willpower to encourage growth in Information and Communication Technologies (ICTs) which is the main driver of open access development. This is reflected in insufficient budget allocations, for information technologies.

*Language barrier:* Language is a major barrier in most African countries. Different African countries have different official languages. Most online literature and OA materials for that matter are in English. Kenya as a country for instance, has 42 tribes with different dialects and Nigeria with about 371 tribes and 521 languages.

*Resistance to change:* Change is inevitable but many librarians, researchers, readers and authors have resisted the change to the e-world. Some of them have no cogent reasons to back their resistance.

*Inadequate ICT connectivity and Infrastructure:* Inadequate ICT connectivity and Infrastructure in many African countries has constituted impediment to the development of open access initiative.

*Digital divide:* The digital divide between technology rich and poor nations of the world has deprived African countries from full benefits of OA.

## MEASURES TOWARDS OPEN ACCESS IMPROVEMENT IN AFRICA

African countries cannot stay behind for global developments. Therefore, necessary actions need to be taken for wide visibility and accessibility of any information especially research outputs.



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## KEY TERMS AND DEFINITIONS

**Africa:** Is a continent in the world comprises of developing nations.

**Libraries:** Institutions established to acquire, process, preserve, and disseminate information sources in various formats.

**Open Access:** Is a process by which scholarly journal articles in digital formats are made freely available online without any form of barrier.

**Open Access Movement:** These are the various initiatives towards development of open access.

**Organization:** Is a social institution established with a set of goals examples are government, private, and multinational organizations.

**Publisher:** This is a professional that engages in act of publishing.

**Researchers:** Authors responsible for the creation of intellectual content that can be processed into various formats.

**Scholarly Communication:** Is the process through which academics or researchers share their intellectual knowledge using various scholarly communication channels such as scholarly journal, conference paper, book chapter, etc.