Open Access Scholarly Publishing: A Chance for Maximization of Research Productivity among Academics in Nigerian Federal Universities

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Abstract: *This paper defines open access literature as digital, online, free of charge, and free of most copyright and licensing restrictions. It also discusses the open access publishing models which are open access journal ("gold road") and open access repositories or institutional repositories ("green road"). It goes further to discuss the concept of research productivity which is viewed as a means by which academics contribute their own knowledge to the existing body of knowledge. The paper stressed some justifications of open access in research productivity as to maximize the uptake, usage, applications and impact of the research output of your university; to measure and reward the uptake, usage, applications and impact of the research output of your university (research metrics); and to collect, manage and showcase a permanent record of the research output and impact of your university. The paper maintained that: Lack of research skills in modern methods, lack of equipment for carrying out state-of-the art research, overloaded teaching and administration schedules which leave little time for research, difficulty in accessing research funds and diminishing ability of seasoned and senior researchers to mentor junior researchers due to brain drain as the main factors responsible for the decline. The paper concluded that Librarians have extensive skill sets often developed over many years. Librarians may not believe that "scholarly communication" or "open access" has much relevance to their research productivity. There is no doubt about the fact that Open Access provides global visibility for researchers, their research output can be accessed globally free of charge. This will in turn give room for easy-share of ideas, results and inventions to build upon.*

Keywords: *Open Access, Institutional Repository, Research Productivity, Nigerian Federal Universities.*

I. Introduction

The emergence of information and communication technology is imperative not only for scholars and researchers doing scientific research but also for the expansion of global science and technology knowledge base. Several hundred billion dollars is invested worldwide in research and development in order to solve scientific, technological and social problems and to advance our understanding of the present and the past (Moller, 2006). Most of these research findings are communicated in scholarly journals that are disseminated on the basis of subscriptions or licenses. In the US alone, the scientific, technical and medical publishing market is estimated at between $7-11 billion (OECD, 2004; as cited in Moller, 2006).

The importance of publication in the growth and development of the library profession is of paramount importance to researchers and academic Librarians. It's essential for problem-solving, which leads to dynamism in library services as a response to changing times and environment (Ogbomo, 2010). The scholarly information environment is now undergoing profound change as a result of new technologies allowing new modes of research dissemination, changing research practices and needs, and increased focus on research performance (Houghton et al, 2003; 2004; Van de Sompel et. al, 2004; Houghton, 2005a; 2005b). As a result, the traditional publishing system no longer serves well the needs of researchers for uninhibited access to the research findings of others, or the needs of their funders for cost effective dissemination of findings in order to maximize the economic and social returns to their investment in Research and Development (R&D). Houghton and Sheehan (2006) opined that identifying access and efficiency limitations under the subscription-based publishing model has dominated scientific publishing.

In an academic setup the importance of research cannot be overemphasized. Current information is very essential for researchers to be up-to-date being updated in their fields. Hence they depend on scholarly journals to meet their information requirements. Library being the information provider subscribes to journals in various disciplines in accordance with the thrust of the parent institution. But with the tremendous growth of specialization in various disciplines and the number of journals to be subscribed has increased. The prohibitive factor for the library is the escalating cost of the journals and the stringent library budget. This has led to a phenomenon called "Scholarly Crisis" where the libraries on one hand have to meet the users growing demands

and the journal prices (be it print or electronic) are shooting up and on other hand the library budgets are shrinking. At this juncture, "Open Access" (OA) resources have dawned as boom to both the academic users and the library managers (Joshi, Vatnal, & Manjunath, 2012). OA essentially means free access to the users. This generally referred to the documents available on the Web and also called public domain documents. This term is commonly associated with scholarly material. Open Access (OA) means that electronic scholarly articles are available freely at the point of use. This is a recent movement in communication of scholarly research, wherein neither readers nor a reader's institution are charged for access to articles or other resources. OA is also known as open access publishing and free online scholarship (Kumar & Bansal, 2008). Therefore this paper discussed the concept and model of open access scholarly publishing and how it can ameliorate research constraints bedeviling academic librarians in Nigerian federal universities.

Open Access Scholarly Publishing

The concept of open access is still not widely known among researchers from different geographical localities and research disciplines. Defining open access is not a trivial task; Open access (OA) is a simple concept as express by (Suber 2010). There are so many definitions of OA that are broadly understood to mean making materials accessible to users at no cost (Giarlo, 2006) but more specifically, as Giarlo (2006) explained, OA is used to describe a model of scholarly communication in which users may be freely view, download, copy, and print scholarly articles, books, conferences proceedings, squibs and so forth. This implies that the users are able to freely access scholarly materials because the price of publication has been assumed by another party, usually the author, the author's institution or grant which funded the research. OA being a simple concept as express by Suber (2010), in his Open Access Overview: he define "Open access literature as digital, online, free of charge, and free of most copyright and licensing restrictions." Although open access is a concept that is most often applied to online publication, it is nonetheless compatible with print for those journals that also have a printed version. Open access is free of charge for readers of the online version, but does not exclude priced access to print versions of the same work (Ricardo & Mercè, 2004). According to Harnard (2013) OA means free online access to peer-reviewed research journal articles.

According (Frandsen 2009) several political actions taken to support open access have resulted in a number of declarations Suber (2008) opined that the Budapest (February 2002), Bethesda (June 2003), and Berlin (October 2003) definitions of open access are the most central and influential for the OA movement. They are collectively termed the BBB statement. According to the Budapest (February 2002), Open Access Means:

"[Literature which is freely available] 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. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited" (Budapest Open Access Initiative, 2002)

To achieve broader open access to research similar international statements were devised that further supported these initiatives; including The Bethesda Statement on Open Access Publishing (2003), Open access is defined by the Bethesda Statement on Open Access Publishing as follows:

"An Open Access Publication is one that meets the following two conditions: 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)".

The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003) being the third "BBB definition" of Open Access came up as a result of such broad, international commitment, According to (Frandsen, 2009). The Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities is the most recent of the three definitions. Following a three-day conference in the Harnack House of the Max Planck Society in Berlin the declaration was signed by the invited attendees from German and international research organizations that commit to implementing this definition of open access can sign on to the declaration with the following definition of open access:

Open access contributions must satisfy two conditions: "The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, 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 (community standards, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), 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 an appropriate standard electronic format is deposited (and thus published) in at least one online repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, inter operability, and long-term archiving."

These series of international meetings were held from 2002-2003 in Berlin, Bethesda and Budapest. The purpose of these meetings was to bring together like-minded individuals and organizations with a common desire to make scholarship freely available online, and to work out a common term and definitions (Morrison 2012)**.** The Budapest Open Access Initiative (2002), the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003), and the Bethesda Statement on Open Access Publishing (2003), all include very similar definitions of open access, so that collectively this is referred to as "the BBB definition" of open access. There is more to the Budapest, Berlin, and Bethesda (BBB) statements than defining open access; each statement includes strategies for, and commitment to, implementing open access. The Budapest definitions, is the first and most succinct of the definitions of open access, from the Budapest Open Access Initiative (2002):

According to Morrison (2012) the only element considered missing from Budapest is "immediate" open access, addressed in the subsequent Bethesda statement. For instance, when publishers make back issues freely available, they are expanding access, but this is not full open access. To avoid confusion, it is best to refer to this approach as free access to back issues.

Bailey (2006) noted that, in contrast to the Budapest Open Access Initiative (BOAI), the Bethesda Statement introduces the use of a license, specifies the creation of derivative works, and requires the deposit of open access works in digital repositories run by "well-established" organizations. The specification of "small numbers of printed copies" for personal use is also new.

According Frandsen (2009) these three definitions of open access differ only slightly and because they agree in the substance they are referred to collectively as the BBB statement (Suber, 2008a). According to Suber (2004b) "[n]early all OA proponents agree on the BBB definition", nevertheless he acknowledges that the term is diluted and "true open access" is debatable. He argues that among other reasons for this dilution is that the definition leaves room for variation. An example of that variation is noted by Harnad (2006): Who stated that his definition is the same as that of the Budapest convention that open access; gives free online full-text access to peer-reviewed literature. This definition is missing two important words though, "immediate" and "permanent". Consequently, he argues that it is not adequately included in the definition when and how long access should be provided. Another element in the definition that is debatable is whether or not a publication should be peer-reviewed to be included (Frandsen, 2009).

Open Access Scholarly Publishing Model

However, the model of open access that exists is divided into two broad types (OASIS; Albert, 2006; Rossini, 2007 & Ghosh, 2009) they are the open access journal ("gold road") and open access repositories or institutional repositories ("green road"). Examples of open access journals include library philosophy and practices, while a directory of open access journals has been developed by Lund University Library after the First Nordic Conference on Scholarly Communication in Lund / Copenhagen in 2002. In more specific terms Harnard (2013) stated that there are two ways authors can provide OA:

By (I) publishing in a journal that makes its articles freely accessible online (this is called OA publishing, or ("**Gold OA**") or

By (II) publishing in any journal at all, and making their peer-reviewed final drafts freely accessible online by self-archiving them in an OA repository upon acceptance for publication (this is called OA self-archiving or ("**Green OA**").

OA journals follow procedure of peer-review for their contents. These journals are published to make their contents online free immediately after publication. This is also called as the "golden" road to OA. Some of the publishers such as BioMed Central and the Public Library of Science are providing OA journals. Directory of Open Access Journals (DOAJ) defines OA journals as journals that use a funding model that does not charge readers or their institutions for access Kumar and Bansal (2008).

In Green OA (self arching or repositories) they involve simply making research output freely available on the World Wide Web. They may belong to institutions, such as universities and laboratories or disciplines such as chemistry and biology. They do not perform peer-review. They may have preprint and post print or both. This is also known as the "green" road to OA. Preprint is pre-peer-review article submitted to journal. Post

prints are articles which are post-peer-review. Both pre-print and post-print in electronic format are called e-prints (Kumar & Bansal 2008).

Pinfield (2008) delineated on the two major models of Open Access in practical terms, OA is normally thought to be achievable via two routes: OA journals and OA repositories. OA journals are normally very much like traditional subscription journals in terms of content and presentation. They often contain peer reviewed, edited articles that are presented in periodical parts. However, they are usually funded in different ways, typically either by sponsorship or by publication charges. A publication charge is normally paid before publication by the author (or more accurately via the author by their institution or funder), and the article is then made available on OA One recent variant of this business model (the so-called 'hybrid' model). Where some authors have paid to make their papers OA but other papers are published under a traditional subscription model (where payment takes place on the reader side).

OA repositories on the other hand do not require a new business model, although some have suggested that as more content is made available in them new ways of paying for the production of the content will emerge. Repositories can be set up by subject communities, institutions, or other stakeholders, to collect material which (in the case of research outputs) is usually formally published elsewhere. A repository will contain electronic copies of journal articles (so-called 'eprints'), either in a form before they have been refereed ('preprints') or after ('post prints'). Repositories can also house other content including data, conference proceedings, and learning objects. Repositories are usually set up using international standards which mean they can interoperate; effectively creating a global network of interlinked repositories.

Morrison (2012) stated that publishers can make a work open access as part of the process of publishing. This is sometimes called open access journals, open access monographs, or gold open access. Or, a work can be placed in an archive or repository in order to provide open access; this is sometimes called self archiving or green open access. These two approaches are compatible. An article can be published in an open access journal, and also deposited in an open access archive. There are two key aspects of free in the major definitions of open access, and there are two corresponding sub-definitions of open access, reflecting this distinction. Suber (2008b) coordinated the discussion that led to the distinction between gratis and libre open access.

- Gratis open access: free to read / free of charge
- libre open access: free to read / free of charge, and free of at least some

Copyright and licensing restrictions / free for re-use

According to Morrison (2012) in practice, there are many variations on these themes. There are items that are free to read online, but not to download or print. There are documents that are free to read, print, or distribute, as long as the usage is not commercial in nature. Derivatives are allowed with some open access works, but not others. This distinction is important. Scholarly communication is in transition. The majority of scholarly journals, whether subscriptions-based or open access, are neither fully closed nor fully open. Most subscription-based journals allow authors to self-archive, and many provide free access to back issues. Open access journals range from "just gratis," to "fully libre," with many shades in between. As Willinsky notes in his book, (2006) The Access Principle, open access can be seen as a continuum. Libre open access may be optimal from the standpoint of information dissemination, but it is much better to have a work that is free to read than one with a toll to access that you cannot afford to pay.

Research Productivity and it Open Access Impact

Human beings conduct research every day. They do so in various ways, different theme and in many different settings. One important area is education. Conducting research in an educational setting should be a significant aspect of every educator's professional life and activities. According to Ocholla, Ocholla and Onyancha (2012) defined research to be a way of finding answers to unknown problems emerging from natural and artificial phenomenon, within our environment, through a systematic, logical and verifiable process. What motivates individuals and organizations to conduct research across the board is not uniform. The ideal and, perhaps, main reasons are to find solutions to challenges or problems affecting humanity that stem from natural and artificial phenomenon, confirm or contest or refute theories or hypotheses, develop scientific and professional practices, and to develop creative, analytical and rational thinking for informed decision making. On a more practical basis, research is done to fulfill learning, domestic and career needs; to satisfy curiosity; for egoistic reasons, such as recognition and visibility; for career related rewards, such as promotion, securing tenure or permanent appointment; and for self development or growth, among others (Ocholla, Ocholla and Onyancha 2012)

However, study of research productivity has attracted growing attention in the library field for more than fifty years and especially since issues of academic tenure have come to the fore (Schwartz 1991) Alzahrani (2011) highlighted that Academic research represents the backbone of human activity in the way that it

improves our quality of life through expanding frontiers of academic knowledge and making further research possible throughout the world. Academic researchers publish to establish their claim to a specific result at a specific point in time. When researchers publish their academic studies, it is an opportunity for their peers to access their research and communicate with other academics interested in a similar subject area Hunter (1998); Besimoglu (2007); agree that the publication of research results is a significant link between the areas of communication and academic awards, thus academic societies were founded to encourage communication amongst their members.

Research productivity in any university is a major index of a librarian's quality and the determinant of advancement in terms of prestige, recognition for creative thinking, promotion, salary increase and acceptability in the university setting (Edem, 1995; Ochai and Nedosa, 1998; Salaam and Agboola, 2002; Alemna, 1993; Bassey, Akuegwu, Udida, & Udey, 2007). In addition, research output provides a good justification for librarians to become successful academics. This is so because research activity develops academic knowledge and as well reinforces the skills for effective knowledge transfer. The quality of research output among librarians in any university setting depends largely on quality and quantity of information resources at the university disposals as well as their self-concept (Okonedo & Popoola, 2012).

The outcome and the extent of the functions of the academics in creating new knowledge and innovations are forms of research productivity. Research productivity is a means by which academics contribute their own knowledge to the existing body of knowledge. This can be in form of journal articles, technical reports, books, chapters in a book, supervision and training of students etc. The more research outcome is published in all formats the probability of availability and access to information is assured (Okafor, 2011).

Harnad (2008) described the characteristics of Open Access (OA) as "Information, which is free, immediate, permanent, full-text, on-line and accessible". Harnad suggested three main justifications of OA: "to maximize the uptake, usage, applications and impact of the research output of your university; to measure and reward the uptake, usage, applications and impact of the research output of your university (research metrics); and to collect, manage and showcase a permanent record of the research output and impact of your university."

Open access is especially important for research and academic libraries since all academic institutions are research-intensive and a library's main mandate is to support the teaching, learning and research activities of their parent institutions (Jain 2012).

Academics place emphasis on research and publications, not only because it is presumed that research enriches teaching and the learning process, contributing to the body of knowledge, but also because it is a major determinant of institutional prestige (Ochai and Nwafor (1998) as cited in Alemna, 1998). The issue of research output is of benefit to every nation. This is due to the fact that the wealth and economic progress of a nation depends on the extent of research carried out in that country. Due to this trend, there are various ways of bibliometric studies involving research output Hertzel (2003) opined that bibliometric analysis is a productivity count which is descriptive and involves countries, institutions, time periods and disciplines or subjects while literature usage count which is evaluative involves reference and citation.

Removing Barriers to Research Output among Academics in Nigerian Federal Universities

Research is an important ingredient to the development of any nation and most of the research findings particularly in an Academic setting are made available through scholarly publications. Chiemeke et al (2009) observed that gradual decline in research output in higher education became noticeable in the late 1980s. The National Universities Commission (NUC) noted that in terms of quality and quantity, the research output of tertiary institutions in Nigeria was about the best in sub-Saharan Africa up to the late 1980s (Karani, 1997). The foundations for research are good research training and motivation, availability of equipment, and good library facilities. At the onset and acceleration of the decay in the system, these ingredients faded away. By 1996, the quantity and quality of research had declined to an all-time low (Okebukola & Solowu, 2001). Summarizing the factors that contributed to this decline from late 1988 to 1996, and subsequent collapse from 1997 to date, Okebukola (2002) maintained that: Lack of research skills in modern methods, lack of equipment for carrying out state-of-the art research, overloaded teaching and administration schedules which leave little time for research, difficulty in accessing research funds and diminishing ability of seasoned and senior researchers to mentor junior researchers due to brain drain as the main factors responsible for the decline.Okiy, (2000); Salaam and Agboola (2002) stated that most of the research output in Nigeria occurs in the university. Indeed, research productivity has become essential for university success and academic's employment and promotion prospects for academic staff including librarians (Okiki, 2011) this is however, true for librarians in the academic libraries because their promotion is tied to publishing and research (Okonedo and Popoola, 2012) according to Kennedy and Brancolini (2012) librarians in an academic setting are integrally involved with providing research services to faculty, students, and staff of higher education institutions. Okonedo and Popoola (2012) reported that research productivity of librarians in public universities in Nigeria, research productivity of librarians in Nigeria rest largely upon the quality, and often the quantity of research in form of books, journals articles, technical

reports, etc. (Alemna, 1993; Nwakanma, 2003; Ochai and Nedosa, 1998).

The level of education, skills, motivation and self perception of academics play an important role in their research productivity. Utulu (2005) affirmed that education and skills acquired in the early days of professional practice also determine the ability to produce scholarly papers. He added that one of the motivating factors for scholarly publications by librarians is the availability of other publications which contain the needed language for publication and how to use them. According to Kennedy and Brancolini (2012) motivation by a desire to help academic librarians improve their research skills and, thus, the quantity and quality of their research is of paramount importance. Ochai and Nedosa (1998) asserted that publication is motivated by eagerness or enthusiasm to publish, presence of enabling environment, self perception of individual librarians with respect to their role, the will power on individual librarian to succeed and the determination not to "perish" in the academic high seas.

Powell (1997) remarked that despite the benefits of publications to librarians, they do not conduct enough research and publication. Cullen (1998) and Molholt (1998) also noted that lack of interest and motivation hinders librarians' scholarly publication. Several studies have shown that librarians in their first 2-3 years of professional life are potentially non-productive years for scholarly publication. Okoye and Ejikeme (2011) also lamented on low research productivity of academic librarians despite the abundance of OA publication many academic librarians are neither familiar nor have assimilated the new culture in their scholarly publishing, nor have known the advantages derivable from them in order to maximize their research productivity. This was acknowledged by Okonedo and Popoola (2012) who assert that regardless of some of the motivating factors, librarians do not generally engage in adequate research and publication. Kennedy and Brancolini (2012) observed that despite with the benefits of conducting research and the desire of librarians to conduct research, the reasons that librarians may not conduct research are diverse. One of those reasons in particular has been examined in the literature quite a bit: uneven training in research design. Research training at the master's level is especially varied, leading to an uneven skill set among librarians.

A major issue for academic libraries has been the 'serials pricing crises' of the past two decades, whereby average costs of journal subscriptions have increased exponentially, partially due to the consolidation of journal publishers. Since library budgets have not increased at an equivalent rate to journal prices, the purchasing power of individual academic libraries has decreased, forcing them to cancel subscriptions, to reallocate budget items to maintain subscriptions, or to negotiate licensing agreements whereby access is granted to "bundles" of journals at a lower price per journal. Open access represents another option for libraries to provide access to their institution's scholarly output without the need for expensive journal subscriptions or potentially inflexible license agreements (Hurrell 2012).

Suber, (2003) further asserted that the serials pricing crisis is now in its fourth decade. We're long past the point of damage control and into the era of damage. Prices limit access, and intolerable prices limit access intolerably. Every research institution in the world suffers from intolerable access limitations, no matter how wealthy. Not only must libraries cope by cancelling subscriptions and cutting into their book budgets, but researchers must do without access to some of the journals critical to their research.

"One might expect relief from digital technologies that allow the distribution of perfect copies at virtually no cost. But so far these technologies have merely caused panic among traditional publishers, who have reacted by laying a second crisis for libraries and researchers on top of the first. The new crisis is still in its first decade and doesn't yet have a name. Let me call it the permission crisis. It's the result of raising legal and technological barriers to limit how libraries may use the journals for which they have so dearly paid. The legal barriers arise from copyright law and licensing agreements (statutes and contracts). The technological barriers arise from digital rights management (DRM): software to block access by unauthorized users, sometimes with the help of special hardware. The permission crisis is a complex quadruple-whammy arising from statutes, contracts, hardware, and software" (Suber, 2003).

Open Access (OA) is becoming a substitute to traditional scholarly publishing methods. Some researchers and scientists think that their intellectual work and research should be made available to the world free of cost. Scholarly research has been disseminated through journals in a discipline published by academic societies and commercial publishers. Authors submit their papers to the publishers and they are peer reviewed, edited and published. With the advent of Internet, some of the journals are published in the electronic format. This new media has changed the production and distribution or dissemination of research in the form of journals. It has dramatically reduced the time in between the production and its access. Peer reviewing and editing also takes lesser time as compared to print (Kumar & Bansal 2008).

The Internet and computer technology have brought a growing trend among the scientific community to make Open Access (OA) to scholarly research. Open access emerged to address the problem of escalating cost of scholarly and scientific journals, which had made their access restrictive (Jain 2012). At present, authors and their institutions produce research output and submit it to the publishing agencies without receiving money from them. Publishers peer-review, edit and prepare research content for publication. Authors get their own

output by paying charges to publishers. Publishers are increasing prices of journals every year. Public money is used to provide funding for research, its publication and the purchase of the published research findings. Public funded research should be treated as a public good. Authors want to make their articles openly accessible to maximize their research impact and update in their research fields (Kumar & Bansal 2008).

Suber (2003) re-iterated that both the pricing and permission crises can be solved at one stroke by open access. Open-access literature is defined by two essential properties. First, it is free of charge to everyone. Second, the copyright holder has consented in advance to unrestricted reading, downloading, copying, sharing, storing, printing, searching, linking, and crawling. The first property solves the pricing crisis. The second property solves the permission crisis. Both properties depend on the will of the copyright holder. Most copyright holders want to charge for access to their work (erect price barriers) and block access to those who haven't paid (erect permission barriers). But this is dictated by their economic interests, not by copyright law. They have the right to make price and permission barriers disappear if they wish. The secret of open access is to keep copyright in the hands of those who desire open access. There is no need to abolish, reform, or violate copyright law. (Because open access carries the copyright holder's consent, it should never be described as "Napster for science".)

If scientists and scholars transfer their copyright to a traditional publisher, then the publisher will typically not consent to open access. On the contrary, traditional publishers erect price and permission barriers precisely to prevent open access. However, if authors retain copyright, then they will consent to open access, at least for the research articles for which they expect no payment. If they write for impact and not for money, then they want the widest possible dissemination of their work, which requires that their work be online free of charge and free of the usage limitations imposed by most licensing terms. Copyright holders who consent to open access will dispense with price and dispense with DRM. If open access reduces pricing and permission barriers to zero, then it clearly solves both crises. Moreover, it does so efficiently, completely, and lawfully. Other remedies to the same problems are either legally dubious, such as circumventing DRM, or arduous and incomplete, such as copyright reform or anti-trust action against publishing conglomerates (Suber, 2003)

Open access is especially important for research and academic libraries since all academic institutions are research-intensive and a library's main mandate is to support the teaching, learning and research activities of their parent institutions (Jain 2012). The outcome and the extent of the functions of the academics in creating new knowledge and innovations are forms of research productivity. Research productivity is a means by which academics contribute their own knowledge to the existing body of knowledge. This can be in form of journal articles, technical reports, books, chapters in a book, supervision and training of students etc. The more research outcome is published in all formats the probability of availability and access to information is assured (Okafor, 2011).

II. Conclusion

The open access movement has gained considerable traction in the last decade. It has become the most successful scholarly publishing reform movement in recent times, and it has begun to transform the scholarly communication system. Librarians have extensive skill sets often developed over many years. Librarians may not believe that “scholarly communication” or “open access” has much relevance to their research productivity. There is no doubt about the fact that Open Access provides global visibility for researchers, their research output can be accessed globally free of charge. This will in turn give room for easy-share of ideas, results and inventions to build upon. Open Access provide new means of scholarly research communication, that allows researchers to disseminate their findings and to maximize the impact of their findings by allowing other to access their output for maximum usability and application. The cost of circulation is largely eliminated with online access to marginal cost of providing access to an additional user which is close to zero.

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