

Open Access Publishing In the Internet Era: An Outlook

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ABSTRACT: *Open access publishing has emerged as an alternative to the subscription-based publishing model. The growth of the open access movement is partially in response to the enormous costs of many scholarly journals. Open access publishing has been identified as one possible solution to the serials crisis—the rapidly growing subscription prices in scholarly journal publishing. Open access publishing may reach more readers than subscription access publishing.*

Keywords: *open access, repository, open access initiative, academic libraries, Dspace, Eprints, digital repository.*

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I. INTRODUCTION

In the present context of information revolution, every country and society is giving prominence to research and development activities. There is considerable research effort in every field including science, technology, humanities and social science. As a result there has been an ever increasing amount of knowledge is being generated by researchers in the form of publications. Hence even the numbers of journals are increasing. Meanwhile many libraries are facing financial crises in developing countries like India. The accelerating cost of subscriptions to scholarly journals has created a serials crisis in almost all libraries. Most libraries cannot afford to subscribe to many important journals needed by users. Ultimately it has no impact on further study and becomes difficult for researchers to have current knowledge (Mukherjee B. & Kumar M. B.2012).

In addition to this the Internet has created revolution in scholarly communication. And it also makes changes in every aspect of human society and it reshapes academic and research activities (Mukherjee B. & Kumar M. B.2012). It is time to think how the internet changes the capacity of knowledge production, distribution and access and how it has an implication on scientific innovation (Rossini C. A. A.2007). In addition to traditional publications there are many other ways in which scientific communities can use information technology and the internet to enhance their communication (Biork B.C. 2004). As a result today many journals are being published electronically and distributed in bundled databases controlled by large commercial publishers and libraries and users are facing restrictive licensing terms on their access and usage. These bundling policy increases more number of indifferent and low-impact journals, libraries and many institutions have to enter into such agreements to gain access to a large number of journals. While such bundling packages are meant for profit they may fail to meet the needs of the library users (Bist R S. & Mohanty P.V. 2006). In such a situation open access seems to be one possible solution to enhance scholarly communications.

II. OPEN ACCESS

Open Access is the subject of much discussion amongst academicians, librarians, administrators, government officials and learned society publishers. Open Access represents the best method for the flow interchange and production of scientific knowledge which is crucial for innovation and innovation is crucial for development (Rossini C. A. A.2007).

Open Access is a movement towards making research publications available to anyone free at the point of access. It is also said that open access is free of price barriers and permission barriers that normally limit access and usage of all published literature to only subscribed or licensed journal. Users are allowed to read, download, copy, distribute, print, search or link to the full text of works, permitting use for any lawful purpose as long as Internet access to the materials is possible (Albert K.M.,2006).

Multiple definitions of open access publishing exist. However the first definition of open access comes from the Budapest Open Access Initiative.

By 'Open Access' to (the) literature, we mean its 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.

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 acknowledge and cited (Rossini C. A. A.2007).

Thus, open access has the following characteristics.

- 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 text and data to software, audio, video and multimedia scholarly articles and their preprints (Jain, Priti, 2012).

III. HISTORY AND DEVELOPMENT OF OPEN ACCESS

The journey of scientific journals started during 1665 to enable researchers to share their work quickly and widely and to establish to priority of researchers investigating the same problem. Because authors received intrinsic rewards from publishing, no financial remuneration was awarded.

Early journals could not afford to pay authors anyway. As time passed, the tradition of writing for impact instead of payment continued (Albert K.M., 2006). For the past quarter century, concerns about the current model of scholarly publishing and the accompanying “serials crisis” have been discussed and analysed at length in the library literature. Later libraries studied the problem and concluded that the high prices were not solely the result of increased costs, but might have been motivated by profit-seeking publishers (Albert K.M., 2006)

Meanwhile scientists were not happy with the speed of the traditional publishing process. It could take more than a year of an accepted article to be published. A group of scientists headed by Paul Ginsparg at Los Alamos National Laboratory created their own pre-print archive, arXiv.org in 1991. This meant that others could not claim their ideas and it also speeded up further research, other scientists were able to read the articles a year earlier and build on the findings (mail, Dtd.11.04.14, file.OA.doc). Later Prof. Steven Harnad (<http://users.ecs.soton.ac.uk/harnad/>) posted on the Internet what he called a “subversive proposal,” asking researchers to immediately start self-archiving—depositing papers in a publicly accessible, Internet-based archive—to maximize exposure to their work and eliminate subscription price barriers hampering research sharing worldwide (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1525322/>)

The Budapest Open Access Initiative (BOAI) took place in 2001, where the term ‘open access’ was coined and the two strategies of Green Open Access (Self-archiving) and Gold Open Access (open access publishing) were devised. The main reason behind Open Access Initiatives was high subscription rates, which were difficult to afford and the large price discrepancy between individual and institutional subscription rates. In 2003 Bethesda stated that “open access will be an essential component of scientific publishing in the future and that works reporting the results of current scientific research should be as openly accessible and freely useable as possible. Libraries and publishers should make every effort to hasten this transition in a fashion that does not disrupt the orderly dissemination of scientific information" (Bethesda Statement on Open Access Publishing, 2003). According to the Directory of Open Access, there are total 1943 open access repositories are there. The total number of Open Access journals continues to rise. As noted earlier there are now total **9,681** Journals in the Directory of Open Access Journals of which **7,032** journals are searchable at article level and there are almost **2,543,464** articles (<https://doaj.org/subjects>).

IV. BENEFITS OF OPEN ACCESS

- Open access removes price barriers (subscriptions, licensing fees, pay-per-view fees) and permission barriers (most copyright and licensing restrictions)
- Open access provides the means to maximise the visibility and thus the uptake and use of research output.
- Open access increases the exposure to research and also increases citation rate.
- Open access provides free articles for users
- Open access is the immediate online, free availability of research output without any of the restrictions on use commonly imposed by publisher copyright
- Open access allows broader and faster opportunities for scientists from any country to publish their work
- Open access increases the return of funding agencies’ investment in making the result of the funded research more widely available more retrievable and more useful.
- Universities benefit from their researchers’ increased impact and increased their visibility. Open access reduces their journal expenses and advances their mission to share knowledge.

Caroline Brazier, opines that “there has been ‘sea-change’ in the world of scholarly communications. Open Access is expected to speed up research progress, productivity, and knowledge transfer as well as promoting the democratisation of knowledge...”

V. types of open access

There are two types of Open Access. They can be best explained in the words of Mr. Stevan Harnad. They are as under

1. ‘Green Road’ (Green Open Access)

It is for authors to publish their articles in the traditional journals of their choice and then to make their peer-reviewed, accepted authors’ manuscripts or final drafts are deposited in institutional and / or subject repositories, those can be freely accessible.

(a) Dspace: Developed by MIT, USA.

- i. Allows customization of system to manage authorization, content, and intellectual property issues of the implementing institution
- ii. Captures interdisciplinary intellectual output
- iii. 54 Repositories in India.

(b) Eprints: EPrints has been developed at the University of Southampton School of Electronics and Computer Science, UK

- i. Runs both, centralized, discipline-based and as distributed, institution based archives of scholarly publications.

2. “Gold’ (Gold Open Access)

It is for authors to publish their articles in an “open access journals” where payment for publication is made by the authors, the authors institution, research funder or other source of author side funding so that the resulting paper can be read by anyone, anywhere, without the requirement to pay for access or wait for an embargo period.

Paper can be published under gold Open Access in Gold Open Access Journals, where every paper is made freely available under the same model. They can also be published in a hybrid journal, where some authors have paid to make their paper Open Access, but other papers are published under a traditional subscription model (where payment takes place on the reader side), publishers of hybrid journals tend to commit to some reduction in subscription fees as the proportion of Open Access papers increases. These published Gold Open Access papers can deposited in institutional or subject repositories.

VI. MODELS

Open access can be provided in two ways. Either a researcher can publish in an open access journal, a special kind of journal that does not charge for a subscription yet makes its content freely available online for all to read and use, or a researcher can publish in any journal of choice as usual but deposit a copy of the article in an Open Access repository. This process is now known as ‘self-archiving’.

1. Open Access journals:

There has been a need to provide access to papers in journals/ periodicals to those who cannot afford to subscribe to the journals. A Dictionary of Open Access journal, maintained by University library, Sudan, is one of such efforts to serve the scholarly society. Currently there are 9,708 journals of various subject discipline have been listed. Few of them charge a ‘front end’ publication fees which the author’s institution or grant normally pays. Others do not charge fees, but have some other business model that enables them to run the journal without charging a subscription (Swan Alma, 2008).

It has been estimated that nearly 75% of all scholarly periodicals are available in electronic form. Most commercial publishers also providing Open Access service through their journals, e.g. Web of Science lists more than 500 open access journals and some of them have very high impact factor indeed. There are some periodicals that have adopted an open access policy for certain portion of what they publish and limiting full and complete access only to subscribers. Most open access journals have so far been established by individual pioneers or group of academics. The main business model has been to minimize costs and to fund the operations as a form of open source project.

Directory of Open Access Journals (<http://www.doaj.org/>) defines Open Access as “Journals that use a funding model that does not charge readers or their institutions for access”. As of April 2014 DOAJ has listed 9,681 open access journals. DOAJ has accepted the criteria laid down in the Budapest Open Access Initiative which recognizes the right of “users to read, download, copy, distribute, print, search or link to the full texts of these articles”.

2. Digital Repository:

There is an alternative way of making work open access-by-self-archiving. Digital open access repositories providing a means to access to certain types of scholarly literature. Digital repositories have been serving scholarly society. They could be of different types depending on their function and scopes. They are either centralized subject based deposits or are broad-based institutional deposits for electronic article.

There are several domain-specific digital repositories initiated by the members of the concerned scientific communities. To mention a few domain-specific Open Access repositories

- arXive (<http://arxiv.org>) : was born in 1991. it covers physics and related disciplines
- RePEc- Research Papers in Economics

a) Institutional Repositories:

Institutional repositories are also known as digital repositories. Institutional Repositories are digital collections that capture and preserve the intellectual outputs of an Institution.

A narrower but valuable definition is provided by Lynch, which defines Institutional Repositories as “a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institutions and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution.” (Lynch, 2003).

Open Access Repositories are digital collections that members of a university’s research community and supports the archiving and long term preservation of the institution’s intellectual output (Jain, Priti, 2012).

There are four types of repository publications. They are

1. Subject based repository
2. Research repository
3. National repository system
4. Institutional repository.

Institutional Repositories are considered as fastest route to open access for the widest range of scholarly research literature. IRs have largely been created and managed by universities as they provide an effective mechanism for disseminating scholarly outputs of a university. It supports learning, teaching and research to attract a global audience. Institutional repositories will get their initial content form works of the faculty for which the institute itself or the authors retain the copyright of work. But when the article published in a journal this constitute a challenge since Institute administration will be very careful not to break any copyright contracts.

The advantages of a Repository

It is not only individual researchers who benefit from Open Access. Their institutions benefit as well if the research output from that institution is available for all to read and build upon.

A repository has the following purposes and benefits for an institution:

- a. Opens up the outputs of the university to the world,
- b. Maximises the visibility and impact of these outputs as a result,
- c. Showcases the university to interested constituencies – prospective staff, prospective students and other stakeholders,
- d. Collects and curates digital outputs,
- e. Manages and measures research and teaching activities,
- f. Provides a workspace for work-in-progress, and for collaborative or large-scale projects,
- g. Enables and encourages interdisciplinary approaches to research,
- h. Facilitates the development and sharing of digital teaching materials and aids,
- i. Supports student endeavors, providing access to theses and dissertations and a location for the development of e-portfolios,

(http://www.openscholarship.org/jcms/c_6162/en/repositories)

VII. CONCLUSION

The Open Access movement is gaining movement in developing countries, with the availability of advanced information and communication technologies and by building up necessary information infrastructure in institutes of higher learning. Many countries are becoming active contributor to global Open Access literature by establishing Open Access archives, Institutional Repositories and by launching Open Access Journals. Open Access Journals provide faster validation of scholarly literature and hence they are also attaining impact factors. Open Access also resonates with the ICT revolution by empowering the individual. Open Access has become a modern phenomenon that benefits these human rights by addressing the access to knowledge and information as

a pathway to development. However even with benefits derived from open access there is still a great lack of awareness and other issues to be addressed by the international scientific communities and library and information professionals. However, open access is one of avenues for the academic communities, particularly of the developing countries which cannot afford to procure scholarly literature due to financial constraints. Open Access can be a real solution in the mere future for accessing scholarly information which can ultimately help research activities and development process.

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