

EVOLUTION OF OPEN ACCESS PUBLISHING TOWARDS A MORE EQUITABLE SOLUTION

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ABSTRACT

The era of open access publishing has made greater impact on the modern academic and scientific world. The aim of the present study is to introduce the new paradigm of open access publishing, which is believed to be the most reliable model for online publishing of peer-reviewed articles in scholarly journals. This open access model enabled the academicians and researchers to publish and access research outcomes seamlessly without any limitations. 'Pay-Access' publishing involves a relatively stringent process to publish research outcomes and demands payment for publishing and accessing the content. This restricts the aspiring researchers and young professionals, who desire to explore similar research taking place across the world. This led some publishers/editors to devise an alternative method of publishing i.e., Open Access publishing. This medium helped many authors and researchers are gaining wider recognition of their research contributions. Pay-Access Publishing is generally preferred by the authors funding resources and can afford to pay the charges of publishing and subscription. It is quite evident that Global North has considerable sources of funds from various agencies and government bodies for conducting research and publishing their research findings. Most of the countries in Global south are not in a position to afford such huge fees charged by pay-access publishers because of insufficient funds or prioritization of the limited research funds for carrying out research activities. Although, the Global South is not getting enough funds for their research, but the capability of the conducting research is potentially high. This paper evaluates the differences in funds allocated for Global North vs. Global South and its association with the choice of either Open Access or Pay-Access mode of publishing. Additionally, the study articulates, how Open Access Publishing has become prominent in the world of scholarly journals.

Keywords: Open Access Publishing, Pay-Access, Global North, Global South, Publishers, Authors, Research Funding.

INTRODUCTION

Publishing became advanced across generations and has undergone transitions in terms of publishing mode, business patterns, ethical considerations and many other aspects. Initially, the art of writing manifested to express and convey one's thoughts to others (Chisholm, 1911). Preservation and archival of information became important with time considering the impact of write-ups on human society and life. Thus, the genesis of the concept of passing over earned and acquired knowledge to the next generation took place which is now being done in a relatively more elegant manner through modern day publishing. With every passing century, publishing system has witnessed extensive changes with greater application of advanced technology and

tools to archive and present/display in a more comprehensible/understandable manner considering all possible user perspectives.

Gutenberg brought the revolution in publishing through innovative printing technology (Clapham & Michael, 1957; Singer, 1957; Triggles & Triggles, 2017). Efficient, eloquent, rapid printing with excellent type settings of text, figures and tables altered the perception towards publishing while the dissemination of knowledge turned into a flourishing business which enhanced the scope along with a noble cause of information sharing (Garner, 2008; Hannett, 2010; Ingram Content Group, 2019; Kanter, 2008; Aileen, 2016). Later on, several ethical issues came into the picture and with every movement forward, strict code of conducts and rules were found to be necessary at times to broadcast accurate and unbiased information (Merton, 1963). An urgent need of such scrutiny and assessment was felt for circulation of scientific information (Aileen, 2016). Therefore involvement of third party subject experts becomes mandatory other than specific authors and publishers. Stipulated rules and regulations had been derived for articulation or expression of opinions in a scientific communication, and their evaluation. Print mode and subscription based publishing system covered substantial area in the publishing system and the business market for centuries wherein the business objectives and ways were simple and straightforward (Buranyi & McKenzie, 2017; McGuigan, & Russell, 2008). Further options were limited for increasing circulation and subscription which resulted in business monopoly with some of the industry leaders (Larivière et al., 2015; University of Montreal, 2015). With time, emergence of electronic communication systems and internet-based technologies crossed the barrier of distance and languages that made the world small and reachable (Wagner et al., 2006). Technical revolution in 20th and 21st centuries altered the communication mechanism in the world immensely and so did the industrial revolution as well as publishing system (Ellison, 2011; Kaufman, 2010).

A brief comparison of different publishing models is presented in Table 1.

Factor	Self-publishing/ Freelance	Conventional print	e-publishing- subscription	e-publishing- open access
Book printing agency	Required for print version	Required for print version	Not required	Not required
Publisher	Consultation required	Consultation required	Website information	Website information
Accessibility	Limited	Limited	Limited till embargo period	Unlimited
Ownership	Full control or with publisher	Licensing with publisher	Licensing with publisher	Copyright or licensing with the author
Suitability	Books	Books	Books/Articles	Journal articles
Author	Has copyright	Has copyright	Copyright with publisher	No copyright or licensing restrictions
Royalty	Not applicable	Applicable (book)	Applicable (book)	Not applicable
Manuscript service	Nil	Marginal	Moderate	Provided as required

Table 1
COMPARISON OF DIFFERENT PUBLISHING MODELS

Editing	No assistance	Little assistance	Helpful	Helpful
Publisher	Paid service	No paid service	No paid service	Paid service
Distribution	Self	Limited	Limited	Seamless access
Marketing	Full control	Dependent	Dependent	Full control
Publication duration	Self-dependent	Long duration	Medium duration	Lesser duration
Monetary gain	Yes	Yes	No	No
Review	Self-dependent	Professional	Professional	Professional and wide
Redistribution	Limited	Printing based	Limited	redistribution, reuse and circulation
Research information	With author	With publisher	With publisher	Accessible to all
Embargo period	Archiving effort	Depends on sale	Long	Archived permanently
Author workload	High	High	Moderate	Moderate
Expenditure	Printing cost	Printing cost	No expenditure	APC only
Extra expenditure	Editing and publishing	Library subscription	Subscriptions at different levels	No additional expenditure
Revenue	From sales	From sales	From subscriptions/sales	On time APC and advertising
Marketing	Less effective	Less effective	Moderate	Highly effective
Cost of publication	Wide ranging	Wide ranging	Not applicable	Small percent of research cost
Track publication by Funding sources	Difficult	Difficult	Difficult	Easy
Tracking translation of funding to research outcome	Difficult	Difficult	Difficult	Easy
Short note/Rapid publication	Difficult	Difficult	Possible	Easy
Article rating	Feed back based	Feedback based	Citations based	Citations/downloads/views/posts/comments
h index	Difficult	Difficult	Limited	Realistic
Additional charges	May incur	Based on color dimension	No additional charges	No additional charges
Visibility	Relative	Limited	Limited till embargo period	High visibility
Multiple subscriptions	Difficult	Not applicable	High price	No charges
Article promotion	Limited	Limited	Limited	High
Knowledge integration	Restricted	Restricted	Restricted	Feasible
Reader feedback	Limited	Limited	Limited	High potential
Author user friendliness	Limited	Limited	Limited	Provides tracking of article
Funding chances	Less	Less	Moderate	High

The race to reach subscriber is gradually shifting towards author. This reverse flow has been only possible due to technical advancement and Open Access publishing model is an example of such revolution.¹

Open-access (OA) policy is the latest improvement in academic publishing (Hendler, 2007; Jeffery, 2006). Since the inception of OA policy, several ‘big-shots’ in publishing world found it as the most challenging competitor and tried to exaggerate the policy with ‘funny’ word selection (Harnad et al., 2004). Undoubtedly, the word “*Predatory*” is the most undesirable term for open-access publishing. In research, the economic barrier should not restrict knowledge propagation (Henderson & Bosch, 2010; Ryan et al., 2011; Sample, 2012). There is a greater need to access information during productive research work and it is not always possible to purchase it from the publishers. It is also true, by using such “*pay-access*” (PA) policy, publication house earns comparatively high profit than OA policy and the discrepancies/agonies starts from that particular point of competitive economic loss. OA policy plays a major role in determining the direction and scope of a research work by creating an open platform for the researchers in the similar field to share their ideas openly thereby becoming a reliable platform for publishing and accessing the research outcomes. It is noteworthy that, authors are the scholars or researchers in a particular field, who are well-qualified personalities and are capable of justifying and choosing the Journals in which they desire to publish their work. Various factors influence the criteria of obtaining the grants for scholarship or funds with allocation to their research work. In the last decade, the OA policy was regarded as a “*Prey*”, probably due to its wider acceptance by the scholarly world and thereby the existence of the Pay-Access publishers and their associates may fall into ‘question’ in the near future. The term “*predatory Open Access*” originated from some criticisms and apprehensions pertaining to rapid growth, wide acceptance of the OA model across the world, as it has already shown its impact on of Global South, and it has its roots even in the Global North. Together, the trends of mass acceptance of OA policy are indicating the efficacy of OA in future research communications. Further, the essential features of OA publishing were also a reliable source for publishing peer-reviewed, scholarly articles on the internet (Wischenbart, 2016). This model enables the researchers to publish and access research communications easily without any limitations, which could be the basis for golden era of research (Armstrong, 1997). OA publishing policy only collects the Article Processing Charges (APC) to meet their day-to-day editorial process, administrative, and technical expenses. It does not put any restrictions on accessing the research content. It creates an open platform, where the authors can share and access the research in a particular field of science.

Hurdles in Smooth Publication

As it is said “*with great powers come great responsibilities*”, so is true for publishing world. With altering system due to the powerful technologies, new questions and problems are being raised, which requires immediate attention from every stakeholder of this noble system. Issues with web technologies, citations, copyrights, language translations, right preservations, authorships, ownerships, distributions, peer-review system, editing (Random, 2008) and several other are need to be resolved at the earliest (De-Jager, 2013; Iverson, 2004; Losowsky, 2017; Penguin, 2008; Publish Lawyer, 2010).

Online and Print Publishing System

Online or electronic publishing received extensive appreciation and promotion from all over the world along with great acceptance (Publications, 2010; Grudin, 2005). The core system of print publishing system and electronic system remained same but depending on the media type, technologies implemented and participants some difference occurred in the business and operations (Patterson et al., 1999). Print publishing is comparatively costly and subscription base dependent whereas electronic publishing system is cost-effective, having far reach and does not depend on the subscribers alone. Further the production cost, error rectification cost and processing time is much acceptable in electronic mode of publishing (Oxford University Press, 2017). Attractive, user-friendly, interactive and display globally are the key strengths of online publishing and the present day online social media revolution also supports the outstanding promotion of the online publishing. Thus, it is becoming evident that with every passing year conventional publishing is receiving extensive competition from the modern trends in the business but it is true that several issues in conventional system has a firm standard which is the sheer need for electronic mode of scientific publishing system (Ware & Mabe, 2015). With passage of time, it is expected that online publishing system will also have standard systems and protocols.

Standard Publishing protocols

Development of multiple publishing models raised another urgent requirement, i.e., standardizing the protocols and regulations based on the publishing models and following certain regulations and rules universally without any hindrance or objections. International debate and decision is the need of the time considering all possibilities and lacunae. At present, certain international committees such as The Committee on Publication Ethics (COPE) and The Open Access Scholarly Publishers Association (OASPA) have initiated much required efforts. COPE guidelines and OASPA regulations are becoming mandatory as part of the standard publishing system, even though all these systems are still under process and yet to reach a conclusion and have common opinion in several aspects. It is expected that this flourishing publishing sector will go through several such alterations (Legal Instruments, 2018; International Organization for Standardization, 2017; Winkler, 2002; World Intellectual Property Organization, 2018).

Definition of Predatory

An assertive approach of PA policy supporters has been reflecting in various reports in recent years. The unfortunate use of the term “*Predatory*” for OA policy astonished the readers and created some dilemma among authors. Firstly, the authors should be aware of the economic barrier underlying such notion. The term “*Predatory*” originates from some criticisms and apprehensions due to the rapid growth and wider acceptance of the ‘Open-Access model’ of publishing across the world. Further, the logic behind such adverse naming appears to be highly influenced by some strategic competitors in publishing world. Whatsoever it may be, the OA publishing cannot be termed “*Predatory*” only because most of OA Publishers do send soliciting emails to the authors in the relevant field of science. However, it is also true that, the emerging small scale publishers and independent journals approach the authors to explore the possibilities

and to be the part of the publishing industry. In doing so, they strive to attract the authors to their business by way of often undesirable solicitation through emails. However, the authors or consumers of these small-scale business enterprises would have understanding and exercise their choice regarding the logical acceptance to publish their findings in any of the journals. There by the term “*Predatory*” is not the desirable term for the Open-Access model of Publishing.

Open-Access made Predatory

Open access publications need to be encouraged rather than subjecting to discouragement. Many publication houses have realized this fact and are shifting to open access mode of publication or to at least hybrid models retaining a combination of both modes of publication (European Council Council of the European Union, 2016; European Politics, 2016; Springer, 2018). Over the years, the impact, the articles makes is slowly delinking with the journal in which it is published. There are examples of highly cited articles in journals with low impact factor and there are instances of meagerly cited articles in journals with high impact factor. Authors have a freedom and right to choose the journal and mode of publication depending on their financial feasibilities (Mortazavi & Hashemi, 2011). However, it is the earnest duty of the publication houses to make the authors aware of the advantages of open access mode and the availability of the Journals that match their research interests. Open access increases the probability of the article citation at a higher frequency than an article in the pay access journal. Moreover, the articles in open access have potential to have relatively greater impact on the research direction and thus facilitating the opening of new avenues of research (Berr, 2005). The integration of data across open access articles is more plausible for translation into utility. Campaigning against the open access publication is regrettable. The pay access publishers and associated stakeholders need to understand these developments and relative advantages as well as scope of open access platform.

One of the distinct advantages of open access publication seem to be that open access electronic publications are open to a relatively wider and critical review, thus eventually directing the research consensus to realistic and unbiased comprehension (MacKenzie, 2010). Another advantage is that open access enhances the pace at which information integration takes place thus yielding faster development of technologies as well as utility products and services.

Some of the recent observations with regard to funding and research/publication outcomes are as follows. In pharmaceutical sector, which is directly related to health, a recent study has revealed a positive correlation between the research and development, number of universities and the number of indexed scientific journals in Middle East with about 0.6% of total GDP being spent on research and development activities. R & D spending also correlated positively to citations per document and H-index and number of citable documents (MacKenzie, 2010; Meo et al., 2013; Mortazavi & Hashemi, 2011). With respect to science and social science subjects in Asian countries, it was found that, even though there was no association between the GDP and research outcomes; there was however, a positive correlation between the spending on the R and D/number of universities/indexed journals and the number of published documents/citations per document and H-index (Meo et al., 2013). These observations reveal that the expenditure on research based data generation is proportional to the outcomes in terms of number of publications. Hence, open access remains an indispensable and valid option in

providing platform and to accommodate the pace and quantum of data being generated (Dickson, 2004; Institute for Research in Fundamental Sciences, 2018; Mortazavi & Hashemi, 2011; The Guardian, 2011).

Authors need to be informed about the relative advantages and disadvantages of different modes of publishing and also various ethical and regulatory guidelines. Free propagation of the research knowledge needs to be encouraged. It needs to be understood that patents and technologies may be proprietary but the regular research activities and outcomes need to be disseminated effectively.

Global authors should be aware of the fact that, there should not exist such ethical issues except demolition of monopoly business by “*big shots*” in publication house that hinder the continuous progress of OA. With considerable acceptance from across the globe, the PA publishers together with few librarians has termed this reliable platform of OA policy as “*Predatory*” as their existence has been in question. The major work of the “*ScholarlyOA.com*” or any other agencies, which supports this concept, is to threaten the OA and mitigate their influence on the publishing, thereby to protect the interests of the established PA publishers, who intend to support them, have assumed OA publishing to be termed as “*predatory*”. These questionable “*critics*” could not mitigate the influence of Open-Access publishing but in turn contributed in publicizing the knowledge of having an alternative to the Pay-Access Publishing across the Scholarly world (Eriksson and Helgesson) year?

Wide Acceptance across the World

Unlike previous decades when the research was more oriented towards the discovery level of science and technology, the modern era is witnessing more of an information level integrated research approach for projection of novel scientific principles and technology development. This is more because of mushrooming of several research units all across the world as compared to only few data generators in previous decades. The publication modality also evolved accordingly from pay-access to open access in order to accommodate the quantum of expanding knowledge base and the pace at which the information is generating. More than 2.9 million articles were reportedly published in more than 11000 journals coming under the open access purview (Ganesh et al., 2018) by the year 2018. The pace of the research outcome has accelerated so much that it is finding difficulty to synchronize with the pace of publication process and time that is quintessential to pay access. This is further compounded by the funding pattern for research and development. The funding for fundamental research remains concentrated and converged to research conglomerations that generate lesser amount of information level data and orients more towards process and technology development (Berr, 2005; Institute for Research in Fundamental Sciences, 2018; The Guardian, 2011).

Research concepts at preliminary stage of their pursuit has greater chance of being published and thus can have wider recognition in open access mode. This would enable researchers with similar interest to articulate their opinion and views. The time taken for publication is an important factor. In this era of fast pace research, the chances of similar articles getting published by another research group is high, if the review process is delayed. Therefore, novel concepts are more likely to approach open access mode. However, peer review process is

indispensable and therefore there is a need to have a regulatory framework in place across open access publishers to regulate and ensure the implementation of the best publishing practices.

OA publishing is relative fast in terms of article processing and hence authors who need to communicate novel concepts, unique observations and timely expert opinions would most probably opt for OA publishing. Scholars, who are undergoing doctoral study also prefer to publish their research work in a timely manner in order to complete their study and hence may opt of OA publishing. Therefore, while ensuring relatively faster article processing, care must be taken with regard to designing of regulatory framework across OA publishers for the effective implementation of best publication guidelines.

It is astonishing that, some people from non-research arena are intentionally dragging the mass acceptance of OA publication policy towards the bracket of 'Predatory', while most of the PA policy supporters are making even more economic profit by harvesting the PA charges from readers (Reference). If this model of publishing is really meant "*Predatory*", why would most of the universities and other academic institutions across the globe widely accept and adopt this prospective model of Publishing. Open-Access model has an advantage of rapid publishing unlike Pay-Access or Subscription model of Publishing, whereas in some instances PA may take few years to publish the work and the authors/scholars who intend to publish their research in a short span of time can utilize this opportunity but should ensure the "*peer-review*" is strictly followed. However, there should be a regulatory framework designed across the OA publishers to regulate and implement the best publishing practices.

Open-access Grid

There is a need for introduction of an Open-Access Grid as the central review system for approving the articles, which intend to be published by the members of Open-Access Publisher. The members of this grid would be the prominent/established/recognized Open-Access publisher's representatives. The members should lay down the guidelines and framework which should be the basis for carrying out the Publishing process by all the constituent members (publishers). The guidelines and framework should be designed in such a way to overcome the so-called "*Prey*" kind of Open publishing practices. Each article that is intended to be published in any Open-Access Journals must be sent to the Grid to get its assent. The scope of so-called "*Predatory*" can be eradicated by this kind of strategy. As the quality of the Publishing increases, there are more chances of getting articles from the authors without doing any solicitations and the chances of getting the journals indexed in reputed databases are high.

Future prospects: Open-access Regulatory Grid

1. Strategy needs to be implemented by the Grid's unique resources and capabilities.
2. The environment in the Grid should be transparent and the objectives must be designed to give its best so that it can regulate the entire publishing process by all the member publishers of the Grid.

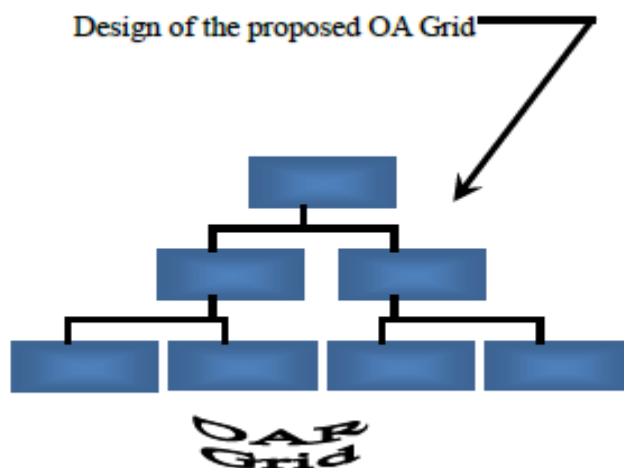


FIGURE 1
DESIGN OF THE OPEN ACCESS GRID

It is expected that fast development and altering strategic changes in publishing world would have its own implications and ramifications. But, innovations are part of the growth and before attaining the foolproof stature it will definitely require several reformations/refinements as well. In the modern times, publishing are of various types, such as, offline or print, online or electronic, hybrid mode where both online of offline publishing and content management is of prime importance. Similarly, review processes are of different types like double blind, single blind, open-peer review etc. May be, in future there will few more innovations based on the requirement, mandate and the direction of this industry. Accommodating all these aspects along with proper quality control and assessment in the process and providing the best possible service to the prospective consumer is the need of the time. Considering the long term association with the consumer and the participants, careful scrutiny of the regulations is required along with proper implementation. Negatively tagging to a particular type of publishing practice by one part of the community may not yield much whereas the other half of the same community is welcoming and applauding the changes with great acceptance. It is expected that focus will definitely move towards published articles rather than a specific type of publishing.

Similar to the differences pertaining to goods and services, the inequalities of academic knowledge generation and the associated publication industry as well as the dominance of the global north was recognized earlier (Collyer, 2018). With advent of modern IT infrastructure, open access publishing paves the way and provides platform for effective distribution, passage and integration of international knowledge thus removing the knowledge barriers and enabling equitable benefit and harmonious development of academic knowledge generating resources.

The tremendous amount of knowledge that has been generated and the pace at which the knowledge is being generated has render the traditional libraries which were running out of space for archiving and the skilled manpower required to compile, classify and maintain the hardcopies. Several of the academic journals started publishing the content digitally. Open access

promotes transparency in both research and funding pattern in addition to promote scientific collaborations while reducing the redundancy of expenditure. The articles published in the open access journals provide a true measure of the research potential and the extent of research ideation is taking place. This would lead to greater efficiency in knowledge generation and its utility in global South.

Most of the open access publishers are from global south. Presently open-access literature constitutes substantial proportion of published literature and is on an increasing trend. Subscription based publications, mostly hailing from global north, even though almost competitively behold the relatively greater proportion of literature might remain obscure and underutilized due to the hurdles in accessibility. Several of the articles pay-walled by the subscription based journals are becoming available from certain website (Himmelstein et al., 2018). Additionally, posting of the pre-prints and reprints have also become feasible. This is counter-productive for the many of the subscription-based e-publishing entities. Open access publishing need not be concerned with this issue. The logical integration of the advantages of global north and global south publication modules would hence, pave way for better production of research based knowledge as well as its effective dissemination. Along with this view to increase the quality of the open access publications and attain better indexing of the journals for consistent flow of the articles from the authors, a centralized open access grid has been proposed (Figure 1). This model would be particularly useful for global south publishers by enhancing the coordinated and concerted efforts to remove the tag of predatory publishing and produce quality publications on par with global north publishers.

CONCLUSION

In this modern world of economic liberalization and big data scenario, publications play a pivotal role in our progress in terms of scientific and technological achievements. In this golden era of information technology, publishing industry has become an integrated part of the system. Therefore, emphasis needs to be laid on building the strategies and refinement of policies for effective implementation in such a way that there shouldn't be any requirement for solicitations by means of improving the quality of publishing. The Open-Access Publishers should consider designing a framework that mitigates the requirement for solicitations. There is need for the introduction of a common regulatory grid for the Open-Access publishers which monitors the publishing procedures and protocols of all the constituent publishers.

Publishing industry is bearing the great responsibility of supporting and coordinating the efforts by the authors, editors and reviewers in order to attain best standards and quality of the publication and the integrity of the published content. Therefore, along with the technical development we should also consider the data represented in the published articles. On the contrary, mode of publishing, i.e., conventional subscription based publishing or latest Open Access publishing system cannot be made solely responsible for deviations or liable for reformation. The overall focus needs to be on developing this industry as a quality and reliable service provider to the community. Therefore, irrespective of the mode we should look forward for a well-coordinated and comprehensive development while laying emphasis on offering better solution.

ENDNOTE

1. <https://www.webcitation.org/67sSymMQy?url=http://www.stratongina.net/files/50millionArifJinhaFinal.pdf>.

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