

Scholarly communication in networked environment: problems and prospects.

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Abstract: This article gives an over view of how popularity of World Wide Web and open access concepts challenge the existence of traditional scholarly communication. New publishing outlets such as blogs, wiki and podcasting facilitate agile communication channels for scholarly communication. Open access concepts in scholarly communication enable free access of knowledge. Research community and information professionals hope that scholarly communication through Internet makes available wider access of knowledge.

Introduction

Scholarly communication is an integral part of research process, which has an important role in the social and economic development of our society. Traditional method of scholarly communication creates bottlenecks in the wide dissemination of research output. At the same time World Wide Web becoming popular medium for scholarly communication has opened up new outlets for publication of research output. Libraries and information professionals are also confronting challenges in handling scholarly knowledge due to copyright restrictions, financial constraints and time lag in the publication of primary research publications. This paper is an over view of the problems in traditional scholarly communication and new prospects put forwarded by Internet for the wider access of scholarly knowledge.

Turbulence in scholarly communication

Current scholarly communication is not sufficient for the exchange of knowledge from research process. Researchers, reviewers, publishers, libraries and users are the main components; and journals are the main medium of communication in the existing system of scholarly communication. Publishers of the journals hold the ownership of the journal article in the present scenario and restrict the broad distribution of knowledge. The copyright conditions attached with traditional journal submission procedure hamper the exclusive rights of the author. Writers need special permission or payment to further use of his/ her scholarly work, i.e. production, distribution, public performance, public display and modification of the original work. These stringent conditions also affect the user's freedom to access the knowledge. Students, professionals, policy makers, and the general public are the stake holders of scholarly publications. This led to the erosion of copyright from the owner and narrows the chance of free access by public ¹. Developing countries including India spend a large sum of money for research activities in government and academic sector in the expectation that this research will address the social and

economic development of the society. Knowledge emanated from public funded research fails to reach the stake holders due to the lack of proper national strategies for knowledge dispersion. The extensive users of research output are researchers itself and they need to access the existing knowledge in their field in order to undertake innovative research.

Increasing price, growth in the number of journals and in sufficient budget allocation for periodicals prevent libraries to become archives of physical records of scholarly publications. Advent of electronic database services in certain extent give relief from maintaining the physical collection of journals in libraries. Subscription rate of electronic database service providers are high and not affordable to libraries in developing countries. Introduction of electronic journals in consortium basis with the aim of price consolation for libraries resulted in the access of titles do not need to support research and academic programs².

New kid in the scholarly communication block

Non friendly approaches of traditional scholarly knowledge dissemination lead researchers to think about new alternative models of scholarly publication. As the consequence of this, open access concept rooted in the scholarly publication through open access journals and open archives. Open access mean the free availability of peer-reviewed literature on the public internet permitting any user to read, download, copy, distribute, print, search, or link to the full texts of the articles. Open access journals which are freely available online world wide and does not rely up on the traditional subscription based business model to generate revenue³. Open archive or an institutional repository is a publicly accessible repository of pre print or post prints of research output of an academic or research institute. Open access journals and open archives are affiliated to open access concepts in publication of scholarly literature.

Open access is not a new type of scholarly publication model; it's only a way for the dissemination of knowledge, retaining authors copyright to their scholarly works and keep users freedom to access it. Peer review process is also applicable to open access journals. Open access literature is digital, online, free of charge, and free of most copyright and licensing restrictions⁴. Open access publication follows different business models like article processing fees, institutional membership, sponsorship and advertising for the free availability of scholarly literature. The publication costs for open access literature shift from the user (subscriber) to the content producer (author). In other words, a journal charge fees for dissemination of the content, not to access it, as in the traditional subscription models ⁵. Copyright provisions of open access enable users seamless access (reading, downloading, copying, sharing, storing, printing, searching, and linking) of the full text of the work. Creative commons is a popular license used to publish scholarly literature in public domain and publishers can create their own license agreement to ensure the freedom in the access of knowledge.

Dynamic web and scholarly communication

One of the visible features in World Wide Web in these days is the dynamic information content and increasing interactivity with users. Second generation of web (web 2.0) based services allow community participation in the creation and updating of information content in the web through online collaboration and sharing among users⁶. Wikis, Blogs, and Podcasts are the major services which ensures creation and free access of community generated information. These services not only influence the business and social life but are also changing the way of scholarly communication. Emergence of these easily accessible social tools attracts researchers to World Wide Web to build their communication platform. As the result of this, increasing number of people access Internet for the collection of research information.

Blogs are the popular easy to publish medium in World Wide Web. Using blog writer can also update the content and collect feed back from users. Authors of the research articles often include their works in their blog to get wider public attention and discussion; therefore it is easy to find new peer-reviewed literature by searching blogs. Bloggers are early birds because they are willing to cover preprints and conference presentations⁷.

Wiki is a collaborative website whose content can be edited by anyone who has access to it⁸. It can be used to create a knowledge base encouraging collaboration of experts in a particular area. Wikipedia is a free wiki based encyclopedia project written collaboratively by volunteers⁹. Flu Wiki is an example of medical wiki which gives information about various types of influenza.

Podcasting is delivering audio content to iPods and other portable media players on demand, so that it can be listened to at the user's convenience. The main benefit of podcasting is that listeners can sync content to their media player and take it with them to listen whenever they want to. Because podcasts are typically saved in MP3 format, they can also be listened to on nearly any computer¹⁰. JournalJunkie is a free podcast service provider which gives medical professionals with immediate audio access to abstracts from the latest medical journals.

New technologies are enhancing scholar's abilities to report, review and distribute research results and are greatly increasing the accessibility of research, regardless of geographic location. New technologies allow easy access to and navigation of rich multimedia formats and the integration of text, sound, graphics and video, as well as increasing interactivity. These capabilities are also challenging traditional models of scholarly communication and questioning the very nature of the traditional vehicles for the dissemination of scholarly material¹¹. The web 2.0 applications would be major medium of scholarly publication to free access of knowledge.

The integration of scattered open access digital scholarly material is now possible through the standards like Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH). This protocol helps to gather and retrieve scholarly information reside in various communities and institutions on open access software platform. Search engine giants like Google, Yahoo and Microsoft's decision to index open access materials in their search purview would be helpful for Internet users to reap the benefits of free scholarly materials.

Scholarly communication move on with hope

New publishing outlets of scholarly communication in World Wide Web attracts the attention of academics and researchers. At the same time open access advocates and volunteers are struggling to remove barriers against the free flow of scholarly information.

Call for free access of public funded research is strong in many countries. Federal Research Public Access Act (FRPAA), 2006 by US Senate is considered as a revolutionary effort in Government level, which facilitates open exchange of research findings. This bill suggests that agencies with research budgets of more than \$100 million enact policy to ensure that articles generated through research funded by that agency are made available online within 6 months of publication. Another agitation is 'Petition for guaranteed public access to publicly-funded research results'¹² in research recommendations proposed in the EU's 'Study on the Economic and Technical Evolution of the Scientific Publication Markets of Europe'. Spontaneously many universities and research institutes adopt open access policies in their scholarly communication environment. More than twenty institutions in India adopted open access. The India Institute of Science is the first institute in India to adopt open access in India. IIM Kozhikode is the first management institute in India to set up an open access archive.

Increasing number of open access journals is another accreditation to the growing popularity of open access principles in scholarly communication. DOAJ (Directory of Open Access Journals) listed 2500 peer reviewed open access journals in 2006.

Author addendums from SPARC (Scholarly Publishing and Academic Resources Coalition), Boston Library Consortium, MIT, Science Commons and JISC help to relieve authors from the clutch of harmful copyright of publishers and bring back the exclusive rights. Author addendum is a legal instrument that modifies the publisher's agreement and allows keeping key rights of authors.

Conclusion

Traditional scholarly communication model is not favourable in the case of free access of knowledge. World Wide Web and its allied services become the most rational and fast channel for knowledge transfer. A free flowing stream of scholarly communication will reduce the role of scholarly authority in the

progress of research. In the networked environment any one with access to the Web can participate in scholarly communication. Scholarly communication through World Wide Web needs gatekeepers to filter the public scholarly discourse¹³. Open access has the provisions to safeguard the rights of public to free access of knowledge. Information professionals need awareness and training to organize and storing of research output using open access repositories and digital libraries. The government and academic institutions are not serious enough to monitor the scholarly publishing behaviour of public funded research. Research community and users are under the belief that government intervention is necessary at least in public funded research publication to enable free access of knowledge.

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