

according to the requirements of research and analysis, which enhanced the visual analysis tools and means of patent information. Meanwhile, some free analysis net-tools and data processing software programmed by the researchers themselves were also used in the analysis. In addition, each library has begun to focus on training and absorbing researchers on patent study, besides sending some personnel as government researchers to study abroad, they also strengthened the training at home. The master's tutors and the doctoral tutors in each library also began to emphasize on training their

own students, and at least five of the graduate theses are on patent-bibliometric research. Presently, a research layout and team is formed initially, which makes the Main Library and the Chengdu Branch as the main body, assisting with Lanzhou Branch Library and Wuhan Branch Library.

NSLC is now in its start level in patent-bibliometric research, therefore, a wide communication and cooperation is warmly expected in the construction of patent index, the analysis method of patent, and the development of analysis tools of patents, etc.

OPEN ACCESS TO RESEARCH LITERATURE IN INDIA: CONTEMPORARY SCENARIO



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1. Introduction

Open Access to knowledge is an international movement having wider participation of research communities in disseminating ones' research outputs and public-funded research results through open access channels. Open access to information is necessarily based upon principle of digital forms of scholarly communication, where research literature is mainly made available through web portals.

Electronic journals, both subscription-based and open access (OA) coexist in developed countries, giving wider choices to the researchers to publish and disseminate their research results. Paid electronic journals reach a limited number of subscribers, whereas open access journals can in principle reach wider number of researchers. On the other hand, most prestigious journals or high impact journals in all major disciplines are still available in fee-based channels.

In spite of paid subscription, journals from developed countries have dedicated clientele. The situation is somewhat different in developing countries. Journals published in developing countries have relatively low visibility as they have relatively weaker worldwide marketing channels. The situation improves to some extent when the journals establish collaboration with some internationally renowned publishers. Open access removes this barrier of lesser visibility of journals. The print-only Indian journals have limited circulation mostly within the national boundary, thus, they are less visible

globally. Whereas, journals available in open access channels have greater potential of international visibility. OA journals also have greater chance of getting wider coverage by journal indexing and harvesting services as well as getting high rate of citations and receiving high quality papers/manuscripts.

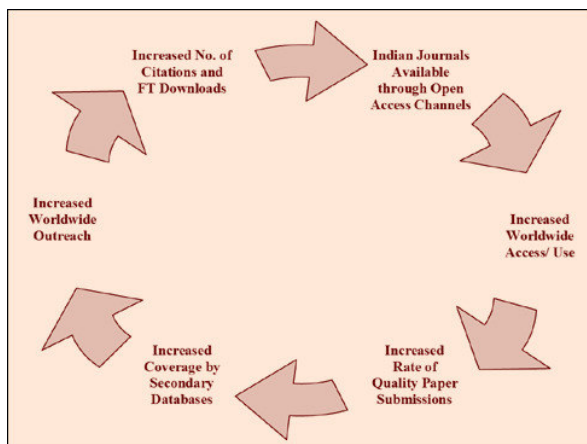


Figure 1 Increased Outreach and Visibility of Indian OA Journals

Figure 1 show how an open access journal can step into the bracket of highly visible journals with superior quality in content. OA can also make transition of a national journal into an international one, provided the journal publisher puts special efforts in quality control, timeliness and indexing by secondary databases. So, embracing open access channels is becoming compulsion to journals published from developing countries.

Indian journal publishers, particularly scientific journal publishers, are seriously considering or firmly stepping into the open access channels. There is also national level consensus at different level of policymaking bodies promoting open access mandates for public-funded research literature. The National Knowledge Commission (NKC), a policy advisory body to Government of India, recommended open access to research literature resulted from the public-funded research [2, 3]. Several institutions

such as national S&T academies and R&D apex bodies in India such as Indian Academy of Sciences (IAS), Indian National Science Academy (INSA), Council of Scientific and Industrial Research (CSIR) and Indian Council for Medical Research (ICMR) have started building up open access channels by establishing OA journal gateways and institutional repositories.

2. Open Access Channels for Indian Periodicals

2.1 Open Access Journal Gateways

Indian open access journals are made available through OA journal gateways where an OA journal gateway is dedicated for archiving all OA journals of the same publisher. Table 1 provides an indicative list of open access journal gateways for Indian scholarly journals. This Table indicates that Medknow Publications is major OA journal publisher in India having eighty journal titles on its credit. This is followed by medIND OA journal gateway, which hosts forty Indian biomedical periodicals. Public-funded S&T institutions such as Indian Academy of Sciences (IAS), Indian National Science Academy (INSA), National Institute of Science Communication and Information Resources (NISCAIR), Defence Science Information and Documentation Centre (DESIDOC), etc. have established their own OA journal gateways, where most of their peer-reviewed journals are placed for worldwide

Name of OA Gateway	Implementing Agency	URL	No. of Journals
Medknow Publications	Medknow Publications and Media Pvt. Ltd.	http://www.medknow.com/journals.asp	80
medIND	Bibliographic Informatics Division, National Informatics Centre, New Delhi	http://medind.nic.in/	40
NISCAIR Online Periodicals Repository	NISCAIR, CSIR, New Delhi	http://nopr.niscair.res.in/ ; http://www.niscair.res.in/sciencecommunication/ResearchJournals/rejour/rejour1.htm	16
OpenMED@NIC	Bibliographic Informatics Division, National Informatics Centre, New Delhi	http://openmed.nic.in	13
IAS OA Journals	Indian Academy of Sciences, Bangalore	http://www.ias.ac.in/pubs/journals/	11
IndianJournals.com	Divan Enterprises, New Delhi	http://indianjournals.com/	10
KRE Journals Online	Kamla-Raj Enterprises, New Delhi	http://www.krepublishers.com/KRE-New-J/	10
eJournals@INSA	Indian National Science Academy, New Delhi	http://www.insa.ac.in/	4
DRDO Publications	DESIDOC, New Delhi	http://publications.drdo.gov.in/ojs/index.php/	2
ISIK OA Journals	Indian Statistical Institute, Kolkata	http://sankhya.isical.ac.in/	2
IIAP Repository	Indian Institute of Astrophysics, Bangalore	http://prints.iap.res.in	1

Table 1 Open Access Gateways for Primary Journals in India

dissemination. This Table also indicates that private-sector enterprises such as Medknow Publications, Kamla-Raj Enterprises and Divan Enterprises have established OA journal gateways for different Indian journals.

Apart from OA journal gateways, institutional repositories or subject repositories can also systematically archive journal contents of some specific journals [1]. For example, OpenMED@NIC, a subject repository maintained by the National Informatics Centre, provides access to eleven Indian journals. Similarly, IAP Repository, an institutional repository of Indian Institute of Astrophysics, provides access to one Indian journal.

OA Journal Gateways in India, listed in Table 1, are briefly described below:

- *Medknow Publications* OA gateway provides full-text access to eighty peer-reviewed biomedical journals published by Medknow Publications in collaboration with different learned societies and institutions in India and abroad. These journals are OAI-PMH-compliant¹. Apart from current volumes of Medknow journals, archive of back volumes is also available through each journal's homepage. These journals are widely indexed by secondary databases, search engines, OA directories and metadata harvesting services, giving wider visibility to the journal titles. Medknow also provides solutions to the scientific societies and scholarly institutions through Journal-on-Web – a web-based manuscript submission and peer review system that handles pre-publication and post-publication processes for journal issues.
- *medIND@NIC* provides full-text access to forty biomedical journals published by different scientific societies and institutions in India. This service is provided by Indian MEDLARS Centre at the National Informatics Centre (NIC), in collaboration with Indian Council of Medical Research. This is a subsidiary service of IND-MED@NIC, an online bibliographic database of articles published in over seventy biomedical journals in India.
- *NISCAIR Online Periodicals Repository (NOPR)* presently provides full-text access to three journals published by NISCAIR, namely, Indian Journal of Biochemistry and Biophysics (IJB),

Indian Journal of Chemistry Section A (IJC-A) and Indian Journal of Traditional Knowledge (IJTK). Full-text content of thirteen more journals published by NISCAIR will be made available in due course of time. This gateway is developed using DSpace open source software. This initiative is supported by CSIR.

- *OA Gateway of IAS* provides full-text access to eleven peer-reviewed journals published by the Indian Academy of Sciences (IAS), a renowned scientific academy funded by the Government of India. IAS has already archived all articles of major journals from the volume one. From 2007 onwards, ten IAS-published journals are also available through SpringerLink (Springer), a subscription-based gateway of electronic journals.
- *OpenMED@NIC* is an open access archive for medical and allied sciences, maintained by Bibliographic Informatics Division of NIC. Here authors and editors can self-archive their scientific and technical documents. Full-text articles of thirteen Indian biomedical periodicals are systematically archived in this subject repository. This gateway is developed using EPrints open source software. This gateway is OAI-PMH-compliant.
- *IndianJournals.com* provides single-window access to multidisciplinary Indian journals published by different scholarly societies and institutions. It provides free access to seven peer-reviewed OA journals and three OA periodicals. It also maintains archive of back volumes. These open access scholarly journals mainly belong to the science, technology and medicine (STM) areas. This common journal gateway is freely accessible if the users register their names in the website. In addition to OA journals, this gateway also provides access to subscription-based journal content.
- *KRE Journals Online* is the open access journal gateway for journals published by Kamla-Raj Enterprises in Delhi in collaboration with different scholarly societies and institutions. Presently KRE publishes ten (seven existing and three new additions) OA peer-reviewed journals mainly in the areas of social sciences. These journals are OAI-PMH-compliant.
- *eJournals@INSA* is the open access journal gateway for Indian National Science Academy (INSA)-published journals. This portal provides access

¹ Open Archives Initiative-Protocol for Metadata Harvesting (OAI-PMH)-compliant journal systems expose metadata information to harvesters.

to current and back volumes full-text literature of four peer-reviewed INSA journals, namely, Indian Journal of Pure and Applied Mathematics (JPAM), Indian Journal of History of Science (IJHS), and Proceedings of the Indian National Science Academy - Part A and Part B. INSA has archived all articles of these journals from the first volume. For getting access to full-text resources in this gateway, user registration is required. This project was one of the pioneering open access initiatives in India, supporting the concept of free access to scientific literature.

- *DRDO Publications Gateway* provides full-text access to two peer-reviewed journals published by DESIDOC, namely, DESIDOC Journal of Library and Information Technology (DJLIT) and Defence Science Journal (DSJ). This gateway is developed using Open Journal Systems (OJS) open source software. These journals are OAI-PHM-compliant.
- *ISIK OA Journal Gateway* provides full-text access to two high-quality journals published by Indian Statistical Institute Kolkata, namely, Sankhya - the Indian Journal of Statistics, Series A and Series B. These journals are OAI-PHM-compliant.
- *IIAP Repository* is an institutional repository of Indian Institute of Astrophysics (IIAP), Bangalore. Full-text articles of Bulletin of the Astronomical Society of India are systematically archived in this institutional repository. This gateway is developed using DSpace open source software. This gateway is OAI-PHM-compliant.

2.2 Coverage of Indian Open Access Journals by Secondary Gateways and OA Journal Aggregator

Online secondary database services are very useful referral tools to the researchers across the world to locate scholarly literature published in wide array of open access journals. There are also secondary gateways that provide referral service to the end-users and re-direct their queries to the appropriate journal gateways. Table 2 provides an indicative list of secondary gateways referring Indian open access journals. The most important ones are described below:

Name of OA Gateway	Implementing Agency	URL	Coverage (No. of Journals)
Directory of Open Access Journals (DOAJ)	Lund University Libraries, Sweden	http://www.doaj.org/	3928
Open J-Gate	Informatics India Limited, Bangalore, India	http://www.openj-gate.com/	4793
Bioline International	Bioline International; Reference Center on Environmental Information, CRIA, Brazil	http://www.bioline.org.br/journals	58

Table 2 Secondary Open Access Gateways Providing Access to Select Primary Journals from India

- *Directory of Open Access Journals (DOAJ)*, maintained by Lund University Libraries in Sweden, provides a directory service to the users of open access journals. DOAJ is considered as a most comprehensive directory for peer-reviewed open access journals published worldwide. DOAJ aims to cover all subjects and languages. As on 17th March 2009, out of 3928 journals in listed in the directory 1403 journals are searchable at article level. This content indexing service is known as DOAJ Content.

As DOAJ has worldwide coverage, it refers to several journals published from the South Asian countries as well. Table 3 provides distribution pattern of South Asian journals in DOAJ, based on number of journals listed in this service. This Table shows that India has maximum contribution followed by Pakistan. Out of 163 journals listed in DOAJ, 90 journals are searchable at article level, i.e., covered in DOAJ Content service. Figure 2 illustrates distribution pattern of

Name of Country	No. of Journals Listed	No. of Journals covered in DOAJ Content
India	109	63
Pakistan	43	23
Bangladesh	5	1
Nepal	5	2
Bhutan	1	1
Other Countries	3765	1313
Total	3928	1403

Table 3 Country-wise OA Journal Distribution in DOAJ amongst South Asian Countries

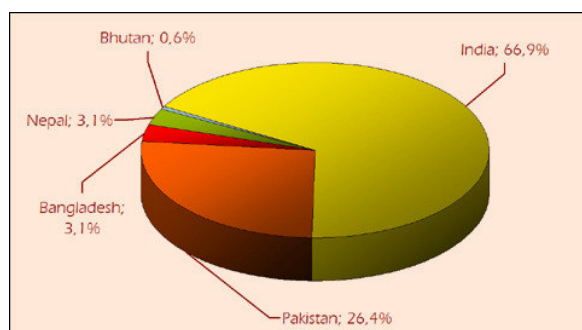


Figure 2 DOAJ Journal Distribution amongst South Asian Countries

DOAJ-listed journals amongst South Asian countries. It further shows that India contributes 66.9% out of total 163 South Asian journals, followed by Pakistan (26.4%). Unfortunately, three South Asian countries, i.e., Sri Lanka, Maldives and Afghanistan are not included in DOAJ. Probably these countries do not produce peer-reviewed journals having qualifying features as defined by DOAJ.

- *Open J-Gate*, a metadata harvesting service of Informatics India Limited, is a searchable portal for papers/articles published in open-access journals. It covers open access peer-reviewed journals as well as professional and industry journals. It provides access to 4793 open access journals and million plus records of articles. Out of 4793 OA periodicals covered here, 2607 are peer-reviewed journals and rest are professional and industry journals. Although this service has worldwide coverage, mainly open access journals published in English language are indexed in this online database. This is the first corporate initiative in India to promote and support open access initiatives. The bibliographic database is maintained in a well-index database, having the metadata information of each article, abstract and full-text links to each article. It has Quick Search, Advanced Search, and Browse by journal options. In this service, full-text links are regularly validated.

Open J-Gate maintains seven main subject categories, such as: Agricultural and Biological Sciences, Arts and Humanities, Basic Sciences, Biomedical Sciences, Engineering and Technology, Library and Information Sciences, and Social and Management Sciences.

- *Bioline International* is an international aggregator of open access journals that provides a free participatory common platform for journals published from developing countries. Presently it covers fifty-eight peer-reviewed open access journals from sixteen developing countries in the broad subjects of public health, international development, tropical medicine, food and nutritional security and biodiversity. As indicated in Table 4, OA journals archived in this gateway are drawn from sixteen developing countries. Most of these countries are located in global South. India is the highest contributor, i.e., 24.1%, in terms of number of journals archived

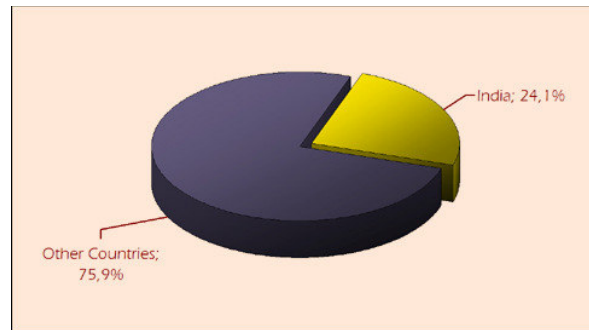


Figure 3 OA Journal Distribution in Bioline International - India vs. Other countries

Country	No. of Journals
India	14
Nigeria	11
Iran	7
Brazil	4
Uganda	4
Venezuela	4
Kenya	3
Chile	2
Tanzania	2
Others: Bangladesh, China, Colombia, Egypt, Ghana, Malaysia, Turkey (1 each)	7
Total	58

Table 4 Bioline International - Country-wise OA Journal Distribution

from the country of origin as depicted in Figure 3. The Indian journals archived in this gateway are mainly from a single OA publisher named Medknow Publications.

3. Sustainability Issues

Albeit some misconception of revenue loss in print-subscription, open access journals enhance their print-subscription base and overall revenue generation. Open Access journals also enjoy privilege of publishing advertisements in their print-version as well as in online portal that make them economically sustainable. Membership societies also can strengthen their membership subscription base while their OA journals are more visible to the professional or research community. Visible societies and institutions can even receive substantial grants and donations from inter-governmental agencies, government agencies, philanthropic trusts and foundations. This way OA journals as well as OA journal publishers can become self-sustainable. Figure 4 depicts a plausible revenue earning and self-sustainability model for open access journals published in India.

4. Conclusion

Pushing journals into open access channels may not solve the problem of low visibility unless the journal publishers adopt systematic marketing and promotional strategies. OA journals should be

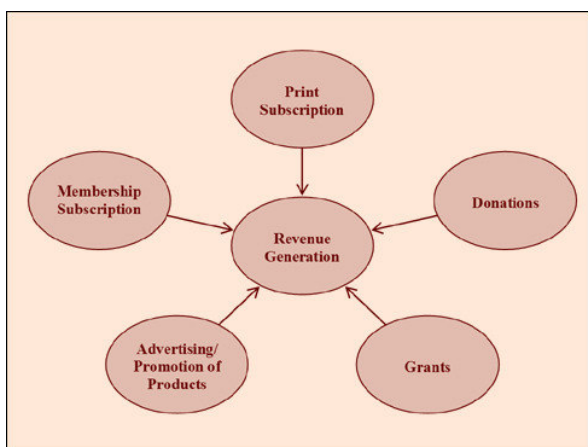


Figure 4 Revenue Generation Methods for OA Journals

widely indexed by metadata indexers and metadata harvesters, in addition to the secondary journal databases. Efforts should also be made to include or index these journals in directories of OA journals, including subject directories.

In this direction publishers like Medknow Publications and Indian Academy of Sciences have

shown leadership in pushing Indian OA journals ahead of other developing countries, incorporating appropriate strategies for wider coverage by search engines, directories, metadata harvesters, and secondary databases.

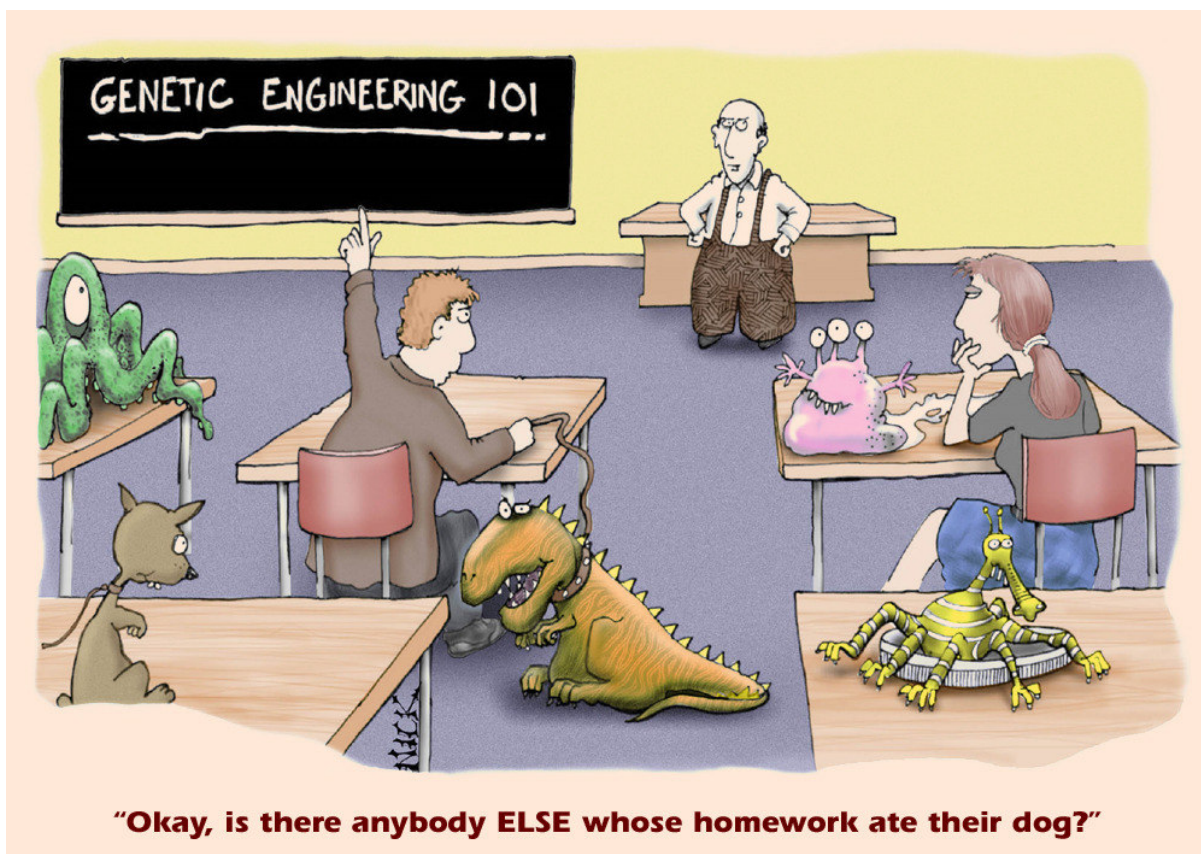
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EDITORIAL

■ Latest Board Member Elections – A Report



In order to ensure continuous renewal of ISSI's governing body, a partial board member election is launched in every second year. In accordance with this principle, in November 2008 the ISSI board initiated to vote about 3 board member positions fallen vacant as a consequence of voluntary resignation. All ISSI members in good standing were entitled to take part in the nominating and voting

procedures and were informed about the details accordingly. Both the nomination and the voting took place online, directly on the ISSI website. After logging in to the "members only" area of the ISSI website voters could submit their nominations (and later, in the second and third round, their votes) anonymously.

In the first turn each ISSI member had the opportunity to nominate 3 potential board members. The first (nominating) turn ended up with 38 candidates, of which 30 accepted the nomination. (1 nominee refused it, 6 nominees did not reply at all and 1 nominee replied after the deadline of declaration of intent.)

The call for the actual voting was announced in mid-December 2008. Once again, ISSI members were offered to vote for three nominees out of those 30 candidates who had accepted their nominations after the first round. After counting the votes it turned out that while the first two positions could unambiguously be determined on the basis of the votes (Peter Ingwersen: 8,08% and Aparna Basu: 7,07% of all votes), a very tight outcome caused a tie in case of the third board member position: Sujit Bhattacharya, Grant Lewison and Henk Moed received 6.06% of all the votes, each.

This unforeseen situation forced the ISSI board to call on all the ISSI members to cast a vote for the third time in January. Members were asked to select only one of the 3 nominees in question. In the end Sujit Bhattacharya received 21.1%, Grant Lewison received 42,1% and Henk Moed received 36,8% of all the votes of the third round.

That is, on 01 February 2009 the latest partial board member election was closed with the following end-result: the Society's renewed board consists of Judit Bar-Ilan, Aparna Basu, Wolfgang Glänzel, Peter Ingwersen, Grant Lewison, Martin Meyer, Olle Persson and Ronald Rousseau.

Balázs Schlemmer *election assistant*

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