Open Access in India: Hopes and Frustrations

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India has a large S&T research community and Indian researchers perform research in a wide variety of areas. India trains a very large number of scientists and engineers and a large percent of the best graduates migrate to the West. One would think that everything is fine with science and technology in India. Far from it. In terms of the number of papers published in refereed journals, in terms of the number of citations to these papers, in terms of citations per paper, and in terms of international awards and recognitions won, India's record is not all that encouraging.

Data from WoS for India

Year	No. of papers
2004	24659
2005	27340
2006	30641

India, after near stagnation, is now on the growth path.

Scientists do research and communicate results to other scientists. They build on what is already known, on what others have done – the ‘shoulders of giants’ as Newton said.

Indian scientists face two problems common to scientists everywhere, but acutely felt by scientists in poorer countries : **Access** and **Visibility**

1. They are unable to access what other scientists have done, because of the high costs of access. With an annual per capita GDP well below US $1,000, most Indian libraries cannot afford to subscribe to key journals needed by their users. Most scientists in India are forced to work in a situation of information poverty.

2. Others are unable to access what Indian researchers are doing, leading to low visibility and low use of their work. As Indian scientists publish their own research in thousands of journals, small and big, from around the world, their work is often not noticed by others elsewhere, even within India, working in the same and related areas. Thus Indian work is hardly cited.

Both these handicaps can be overcome to a considerable extent if open access is adopted widely both within and outside the country. That is easier said than done. As an individual I have been actively advocating open access for the past seven years. A few more have joined in recent years. But what we have to show is rather limited.

With the advent of the Internet and the Web, we need not suffer these problems any longer. If science is about sharing, then the Net has liberated the world of science and scholarship and made it a level playing field. The Net and the Web have not merely replaced print by speeding up things but have inherently changed the way we can do science (e.g. eScience and Grid computing), we can collaborate, we can datamine, and deal with datasets of unimaginable size.

But the potential is not fully realized, largely because most of us are conditioned by our past experience and are inherently resistant to change. Our thinking and actions are conditioned by the print-on-paper era.

The situation with accessing overseas journals has improved considerably thanks to five major consortia which provide access to large groups of scientists in India (especially those in CSIR labs, IITs and IISc). Many universities have benefited through INFLIBNET. ICMR labs and selected medical institutions have formed ERMED, their own consortium. Rajiv Gandhi Health Sciences University, Bangalaore, provides access to literature through HELINET Consortia to a number of medical colleges in the South.

On the open course ware front the consortium of IITs and IISc have launched the NPTEL programme under which top notch IIT and IISc professors have come together to produce both web-based and video lessons in many subjects.

Many physicists in the better-known institutions use arXiv, which has a mirror site in India, both for placing their preprints and postprints and for reading preprints of others. But many others are not aware of it. What we need is advocacy and more advocacy.

What is already there?

Thanks to the initiatives taken by Prof. M S Valiathan, former President of the Indian National Science Academy, the four journals published by INSA were made OA a few years ago. The Academy also signed the Berlin declaration. Three years ago, he convened a one-day seminar on open access as part of the Academy's annual meeting. The Indian Academy of Sciences converted all its eleven journals into OA. The Indian Medlars Centre at the National Informatics Centre brings out the OA version of 38 biomedical journals published mostly by professional societies.

A Bombay-based private company called MedKnow brings out 42 OA journals, on behalf of their publishers, mostly professional societies. Dr Sahu will talk about MedKnow in this conference.

Three OA medical journals are brought out from the Calicut Medical College. A few more OA journals are brought out from India. In all, the number of Indian OA journals will be between 100 and 110.

The Indian Institute of Science, Bangalore, was the first to set up an institutional repository in India. They use the GNU EPrints software. It came about largely because of the leadership provided by Prof. N Balakrishnan and the work put in by the late Dr T B Rajashekar. Today the repository has close to 8,000 papers, not all of them full text and not all of them truly open (as many papers are available only to searchers within the campus). IISc also leads the Million Books Digital Library project's India efforts under the leadership of Prof. N Balakrishnan.

Today there are about 25 repositories in India, including three in CSIR laboratories, viz. National chemical Laboratory, National Institute of Oceanography , and the National Aerospace Laboratories. The repository at the Raman Research Institute has all the papers written by C V Raman, the winner of the 1930 Nobel Prize for Physics. The National Institute of Technology, Rourkela, is the only Indian institution to have mandated OA for all faculty publications. Apart from NIT-R, the deposition rate of current papers is pretty low in all other institutions. Soon ICRISAT, a CGIAR laboratory located in India, will throw open its OA repository.

There are at leas three subject-based central repositories. OpenMed of NIC, New Delhi, accepts papers in biomedical research from around the world. The Documentation Research and Training Centre at Bangalore maintains a repository for library and information science papers. Prof. B Viswanathan of the National Centre for Catalysis Research maintains, virtually single handed, a repository for Indian catalysis research papers with close to 1,000 full text papers.

A small proportion of Indian physicists, mostly high energy and condensed matter physicists, use arXiv to deposit preprints and postprints. And arXiv has a mirror site at the Institute of Mathematical Science, Chennai, which is visited by an increasing number of researchers from India and the neighbouring countries.

A small team at the University of Mysore is digitizing doctoral dissertations from select Indian universities under a programme called Vidyanidhi.

Frustrations

Despite concerted advocacy and many individual letters addressed to policy makers, the heads of government's departments of science and research councils do not seem to have applied their minds to opening up access to research papers. The examples of the research councils in the UK, the Wellcome Trust and the Howard Hughes Medical Institute have had virtually no impact. Many senior scientists and directors of research laboratories and vice chancellors of universities do not have a clear appreciation of open access and its implications.

Among those who understand the issues, many would rather like to publish in high impact journals, as far as possible, and would not take the trouble to set up institutional archives. Most Indian researchers have not bothered to look up the several addenda (to the copyright agreement forms) that are now available. Many scientists I spoke to are worried that a publisher may not publish their papers if they attach an addendum! Publishing firms work in subtle ways to persuade senior librarians to keep away from OA initiatives. There have been no equivalents of FreeCulture.org among Indian student bodies and no equivalent of Taxpayers‘ Alliance to influence policy at the political level.

Hopes

The National Knowledge Commission supports open access and has included it in its recommendations to the Government. Google is in touch with NKC with a proposal to digitize all doctoral theses and bringing out OA versions of selected print journals and digitizing back runs of OA journals. The Indian National Science Academy invited me to address its Council and it is likely that INSA will send before long its recommendations to the Government. Developments around the world, including in Latin America, South Africa and China, I hope will goad Indian establishment to action.

1.

I recommended that INSA mandate (or recommend mandating) self-archiving of all research output immediately upon acceptance for publication by peer-reviewed journals. The self-archiving should preferably be in the researcher's own institution's Institutional Repository.

The mandate should be by both institutions and funders.

http://openaccess.eprints.org/index.php?/archives/71-guid.html
http://openaccess.eprints.org/index.php?/archives/136-guid.html

1A

Advise heads of research councils (CSIR, ICAR, ICMR), funding agencies (DST, DBT) and other major publishers of research results (DAE, DRDO, Dept of Space, UGC and universities) to set up institutional open access repositories and mandate deposit of all faculty and student papers.

1B

Advise the government (the S&T Minister and the Prime Minister) to bring legislation on mandating OA

1C

Advise CSIR, ICAR and other science journal publishers to make their journals OA (through adopting OJS of John Willinsky for which expertise is available in India, or through joining Bioline International)

1D

Launch a massive training programme (in partnership with IISc, ISI-DRTC, NIC, etc.) on setting up OA repositories.

1E

Authors should have the freedom to publish in journals of their choice; but INSA can advise Indian researchers to choose OA journals (without a publication fee, preferably). If at all some authors are keen to publish in a non-OA journal, then they should be advised to use addenda suggested by SPARC, Science Commons, etc. while signing copyright agreements with journal publishers.

2.

Recommend also the gathering of impact metrics (downloads, citations, co-citations, chronometrics, semiometrics), via tools like citebase and weblogs, so that the enhanced impact of OA research can be measured, analysed and rewarded.

http://www.ariadne.ac.uk/issue35/harnad/
http://eprints.ecs.soton.ac.uk/13804/

3.

There is growing evidence for
the OA impact advantage
http://opcit.eprints.org/oacitation-biblio.html

journal self-archiving policies:
http://romeo.eprints.org/

institution/ funder mandates:
http://www.eprints.org/signup/fulllist.php and

institutional repositories:
http://roar.eprints.org/

Regarding OA journals and OA Journal costs:

(a) If Indian journals can make their online versions OA, they should be encouraged to do so. INSA and IASc have already done that. But while this is welcome, what is more important is to mandate that authors self-archive their articles (including their articles in Indian journals).

(b) Some OA journals charge for publication. [Some toll access journals also levy page charges.] Unless the Indian government or funders or institutions have extra funds to spare, they should definitely not offer to pay for journal publication charges.

Again, OA for all India's research output is covered by simply mandating OA self-archiving of all articles.

Brazil and the rest of Latin America have made great strides in open access. The excellent developments in Brazil, especially the government support (particularly in the state of Sao Paulo) and of the work of SciELO (for OA journals) and IBICT in supporting OA repository network are worthy of emulation in India and other developing countries.

China is moving forward too. The Chinese Academy of Science is discussing OA policy at the senior level and the National Natural Science Foundation of China is now considering the setting up of institutional repository and making many of the journals funded by NSFC OA at the same time.

In South Africa the Shuttleworth Foundation and the open source movement are influencing the open access movement gather momentum. And IDRC is chipping in too.

While our focus should be on digitizing and throwing open the current research papers and data, we may also make available our earlier work.

In particular, we may create an OA portal for the papers of great Indian scientists of the past: Ramanujan, J C Bose, S N Bose, M N Saha, K S Krishnan, Y Subba Rao, Sambhu Nath De, Mahalanobis, Maheshwari.

We may also create an OA portal of ALL papers by ALL FELLOWS of INSA and other Academies – past and current.

INSA may invite OA experts who are also outstanding scientists such as Peter Murray-Rust (crystallographer) and Stevan Harnad (cognitive sciences) to India.

INSA may proactively advance OA in international forums such as IAP, IAC, ICSU.

We could invite the next PKP conference or the Berlin-6 conference to be held in India.

Two things can hasten the adoption of OA in India.

(1)If the political left is convinced that research paid for by the government is not readily available to the people freely and what is worse the copyright to the research papers are gifted away to commercial publishers from the advanced countries, then they may act.

(2) If the students are attracted to the idea that fighting for open access is the in thing to do, then they will form FreeCulture like pressure groups and fight for the adoption of open access.

Thank you