

# Knowledge Wants to Be Free Let Us Go for Open Access

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Bombay, 31 March 2007

## Background

India is emerging from a land of cheap labour into a global player in world economy and geopolitics. She is increasingly perceived as a potential knowledge power. China and India are expected to enter the big league in S&T and emerge as net knowledge providers to the world.

Despite a great past in science and scholarship and despite a large number of universities and research laboratories, India today continues to lag behind the advanced countries in science. With less than 3% of the papers coming from India and most of it getting cited much less often than the world average, India contributes sub-optimally to the creation of new knowledge.

India cannot emerge as a knowledge power unless her performance in science improves substantially and quickly. In particular, we need to be very good in biomedical research as we have to ensure health and nutritional security to a huge population.

Information is a key input for both higher education and research. And it is a two-way street:

Access: Indian scientists should gain access to knowledge produced all over the world.

Dissemination: Indian scientists should make sure that what they produce is easily available to scientists everywhere.

With regard to access the situation is pretty bad despite recent improvements. In 2002 the best Indian institution, IISc, received only 1,381 print journals, of which 200 were accessible online. Thanks to a government supported consortium, today IISc faculty can access 8,950 full-text journals. Many universities in the West subscribe to several times that number. With such unequal access, how can we expect Indian scientists to perform world class science?

Often papers published by scientists in one Indian lab may go unnoticed by scientists in another!

Indian research appears in both Indian and foreign journals, roughly in equal proportions. Most Indian journals have a very poor circulation, and most Indian papers in foreign journals are in low-impact journals. The net result is Indian work does not reach a wide audience, affecting visibility and impact. For this reason, the general impression about Indian science is poorer than it deserves.

Thanks to advances in technology – Internet, the Web and improving bandwidths and reducing costs – India and other DCs can solve the problems faced on both the access and the dissemination fronts to a great extent. And at a low cost.

**Nothing that has happened in the recent past can have as great an influence as open access on science and scholarship in the developing world.**

What are we doing to promote OA and translate it from the realm of possibility into reality in India?

In the access front, DCs cannot do much except joining hands with OA advocates elsewhere and add their voice to the worldwide chorus. Unfortunately, the otherwise argumentative Indians are conspicuous by their absence in the worldwide movement for OA. The discussion list on OA [oa-India@dgroups.org] has less than hundred members and most of them are not active. Even among them there are not many research scientists. Hardly anyone from the biomedical sector.

That only 15% of published papers worldwide are available via OA is not good news at all, especially for DC scientists.

On the dissemination front, India can do very well. We can open up our journals and we can set up both central and distributed archives.

Journal publishing in India is, unlike in the West, not dominated by commercial publishers. Many are published by government agencies [CSIR, ICAR, ICMR], academies [IAsc, INSA] and professional societies.

INSA is a signatory to the Berlin declaration and is represented in bodies like ICSU and CODATA. Prof. M S Valiathan the immediate past President of INSA, has a good appreciation of the advantages of OA to India.

## Key Efforts

In 2000 I invited Stevan Harnad and Alan Gilchrist to speak at MSSRF and IASc. In 1982, I organized two three-day workshops on electronic publishing at IISc Bangalore with the support of IASc, INASP, British Council and IDRC. Barbara Kirsop and Leslie Chan conducted the workshops with some IISc and ISI faculty coming in as guest speakers. The well-equipped digital classroom at IISc was built with support from DSIR. About 50 people attended the workshops. Two of the guest faculty, Prof. N Balakrishnan and Dr T B Rajashekar, and a participant, Dr D K Sahu, went on to do great things.

Three years ago I organized two three-day workshops on open access archiving and EPrints at MSSRF, with support from OSI, IDRC, and British Council. Leslie Carr and Leslie Chan conducted the workshops with support from Sahu and Rajashekar, and 48 candidates, mostly with LIS background, were trained.

A few months later, I persuaded Prof. Valiathan to hold a one-day seminar on OA as the key event of the INSA annual meeting held at NCL, Pune.

Both Rajashekar of NCSI and A R D Prasad of DRTC-ISI have conducted workshops on OA archiving [EPrints, DSpace, Greenstone].

## OA Journals

Today close to 100 Indian journals are OA, including those published by INSA (4), IASc (11), IISc (1), ICMR (1) and the Calicut Medical College (3). The Indian Medlars Centre of NIC publishes the OA version of 38 biomedical journals. NIC also produces IndMED, a bibliographic database covering prominent Indian biomedical journals to facilitate access to Indian research. MedKnow, a private company run by Dr Sahu, brings out OA (and print) versions of 42 medical journals (mostly owned by societies). A few CSIR journals were available electronically for a few years (through Bioline), but the agreement was not renewed.

While some OA journals (e.g. MedKnow journals) are pretty user friendly and have exploited the technology very well, others are less so. IASc journals can improve their web presence a lot. Pramana, their physics journal, is an exception.

MedKnow has carried out a few studies to show the benefits of going OA. JPGM gets more than a million hits every year and an equal number of article downloads. Print subscription has increased, paper submissions, especially from other countries, have gone up, and citations have improved manifold. If indexed in JCR, it will be among the Indian journals with the highest impact factor!

Many Indian journals are opting to become OA journals. NCSI-IISc is carrying out a project on Scientific Journal Publishing in India – Indexing and Online Management, with financial support from IDRC.

No OA journal in India charges author-side fees. They earn revenue through print subscriptions and ads or get grants from the government.

Scientists without Borders, a Delhi-based group, is helping easy access to all OA material from India.

## OA Archiving

IMSc is the pioneer in OA archiving in India. In 1997, when telecom infrastructure in India was poor, they set up a mirror site for arXiv. The facility is improved constantly. Today they have a huge storage capacity and high bandwidth connectivity, and serve physicists and mathematicians of the region very well.

IISc was the first Indian institution to set up an institutional archive in India. Today the IISc archive has over 6,760 papers. Why IISc and not others?

Two persons made it possible. A leader – Balki - with both knowledge and the influence to decide and implement, and Rajashekar had the skills and the willingness to act rather than merely talk. NCSI had the infrastructure built with the support of DSIR

The trigger came five years ago when I conducted two three-day workshops on electronic publishing (for editors from all over India) at NCSI, with Leslie Chan and Barbara Kirsop as facilitators.

There are about 30 institutional archives in India. NCL fills its archive mostly with theses. They also have a repository of industrial micro organisms. NIT-R has about 300 papers in its archive and they have mandated self-archiving of all papers and theses. NIC has a central archive (OpenMED) for biomedical research. IIM-K has an archive but author reluctance seems to be high. All these archives were set up and run by people trained at the MSSRF workshop. DRTC has an archive for LIS papers. Both RRI and NAL have omnibus repositories. IITs at Delhi, Bombay and Chennai have started work on their archives. OWSA has an archive on ICT4D.

NCSI has created CASSIR, a cross archive service for Indian repositories. It harvests metadata from registered OA repositories. As of 27 March 2006, the tally was close to 7,850 papers in 13 repositories. For a country of more than a billion people, we have very little to show.

In early March ROAR has included about 8,500 records from nine Indian repositories, and not all of them are full text.

## **Digital Libraries**

Million Books Digital Library led in India by Prof. N Balakrishnan of IISc is doing well: 22 partner institutions, high speed scanning, multilingual, translation software. It has 57,000 books in 14 languages (March 2006).

Vidyanidhi at the University of Mysore, supported by DSIR and Ford Foundation, digitises theses from seven universities and a research lab. So far 3,000 full-text theses, 100,000 metadata records (including 1,000 in Kannada and 7,000 in Hindi).

## **Secondary Service for OA material**

Informatics India launched more than a year ago Open J-Gate, a free search service for material available via OA. It covers about 3,000 serials, 1,500 of them STM journals.

They also have a subscription product called J-Gate, which covers many thousands more journals. DOAJ, Lund, is discussing with Informatics possible cooperation.

Mahiti, a FOSS-based ICT support agency, has developed an offline text only version of Wikipedia.org available on DVD for Rs 2,000 under FOSS license.

I have been writing to many policy makers – including the President and members of the Science Advisory Council - about the need for India to embrace OA whole-heartedly. In early January 2006, Alma Swan was in India for a week and met a few key officials and delivered the keynote at the special session on OA at the 93<sup>rd</sup> Indian Science Congress, where we recommended mandating OA for all publicly-funded research. **Now the National Knowledge Commission has recommended OA to the government.**

Ms Leila Fernandez, a Canadian librarian spent six months in India looking at and evaluating the growth of OA in India. She concludes that faculty non-compliance and lack of institutional commitment as key impediments to progress.

## Concerns

No funding agency in India has so far talked about OA and no research institution or university has mandated OA. There is reluctance (or indifference) among institutions, scientists and librarians (not to speak of policy makers) to adopt OA archiving. There appears to be a mental block more than technical hitches. Also, few scientists talk about OA and they have apprehensions about copyright violation and are not clear about what OA is. Some think OA archiving is a poor alternative to publishing in journals. Even where there are archives, archiving is often done by intermediaries.

## Action

- Continue advocacy [for scientists and policy makers].  
Help evolve institutional and national policies in favour of OA.
- Encourage Indian researchers to take part in OA discussion lists. Persuade them to sign the EU and US petitions.
- Train new cadres to set up and run archives.
- Encourage scientists and editors to carry out studies similar to the ones carried out by Dr Sahu

- Encourage the Ministry of Culture and classics scholars to follow the European example of digitizing cultural heritage.
- Encourage archive managers to register their archives in ROAR and OpenDOAR.
- Unite advocates of open source, OA and e-Science.
- Mobilize the DCs – in particular India, China and Brazil - to come together to create a level-playing field.
- Persuade heads of funding agencies and apex bodies such as DST, DBT, CSIR, ICAR, ICMR and UGC to adopt (if not mandate) OA archiving in their institutions.

Before I close ....

Let us congratulate all the institutions represented here for their interest in institutional archives. More importantly, let us upload each one of our papers as soon as we publish and fill the archives quickly.

**Thank you**