Funding scientific open access

In order to reduce the knowledge divide, more OAJs are needed in all languages and scholarly subject areas.

As of March 2006, the Directory of Open Access Journals (DOAJ) (www.doaj.org) contains more than 2000 quality controlled scientific and scholarly e-Journals that are freely accessible via the Internet. Of these, 48 Open Access Journals (OAJ) are in the field of Physics and Astronomy. These still represent only a small fraction (less than one percent) of the published research. The Public Library of Science (PLoS) being the first initiative that promoted open access to medical literature (www.plos.org). OAJ uses a funding model that does not charge readers or their institutions for access (www.soros.org/openaccess/read.shtml).

An alternative approach is the one proposed by the Open Archives Initiative (OAI), (www.openarchives.org) which encourages researchers and their institutions to establish repositories of research literature freely accessible on the Web as Open Access Archive (OAA). The OAI develops and promotes interoperability (Dublin Core, IEEE LOM) and metadata standards (PMH) to make articles’ level content easily searchable. All of this started in the early 90s at Los Alamos with the first open physics pre-prints archive, now hosted at Cornell University: ‘arXiv.org’.

Supportive system

A distinctive OAA has been recently created to support scientists in developing countries (http://eprints.ictp.it). The repository allows scientists to upload their papers and CVs along with information about the region and country they operate in. In this way, scientists from developing countries may have a clue to who the other countrymen scientists are and what they do. Scientists may also now know what colleagues from neighbouring countries do or which have similar interests. This idea is ready to forge ahead, although it may tread slowly.

The benefits of adopting open access is to increase the visibility, accessibility, usage and impact of researchers’ own findings among the scholarly community. Scientists in developing countries still have difficulty in publishing their work due to the lack of access to the network (http://sdu.ictp.it/pinger/africa.html) and to their institutional economic difficulties. Hence, OAJ can offer new possibilities as an alternative to subscription-based e-Journals in which institutions via Libraries (or sometime even authors themselves) pay for the publication charges, the so-called hybrid model. Anyway, either OAJ or OAA require a business model which needs to be profitable to survive.

Most of the OAJ impose charges on the published materials. For example, commercial publishers like BioMed Central (www.biomedcentral.com) adopts this policy: authors from low-income countries or in a case-by-case basis can get waived charges, while authors do not have to pay the article-processing charge, if it is covered by their own institution or by a supporting entity. This publisher releases original research papers, using the open-access model.

Scientific progress in developing and emerging countries is greatly hampered by their inability to afford for essential journals. At the same time, research generated in these regions is missing to the international scientific community because of financial restrictions affecting its publication and distribution. In order to reduce the knowledge divide, more OAJs are needed in all languages and scholarly subject areas that exercise peer-review or editorial quality control. To finance all costs to run a scientific e-Journal, there is reason why to sell advertising space within an OAJ by associating ads to given key words within every article. The proliferation of freely

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accessible OAA and OAJ provides a very valuable supplement of scientific knowledge to the existing types of published scientific information (books, journals, databases etc.), (www.doaj.org). The technology to implement an OAA or a OAJ is mature and low-cost. Today more than 200 repositories are based on the Southampton University open source software ‘EPrints’.

Financial sustainability

OAJs are more expensive to sustain financially than OAA due to higher running costs, such as referee process, editorial and secretarial board, article processing, etc. Advertising can communicate an effective message to the targeted scientific audience.

Serving ads that are relevant to what is being read on-line is not new. ‘Ads by Goooolgle’ (http://services.google.com) is an example of this implementation. Just as a search on Google connects to the information one is looking for, ‘Ads by Google’ provides links to products and services that are relevant to the search results. It uses technologies that grasp the nuances of language and closely matches or targets ads to the specific content of web pages. ‘Ads by Goooolgle’ has been adopted by some OAJ: the Free Software Magazine (www.freesoftwaremagazine.com) in the technical area and AmericanScience (www.americanscience.org) in the scientific field.

Funding Scientific OAJ within our proposed approach is different. Each article could carry an advertisement within its layout related to its contents not a generic Google Ads. The ads can be dynamically created advertising some related products, events like conferences, instruments, scientific services etc. A charge is to be levied to the advertiser and not to the author or its institution. The payment received from these targeted ads could well be used to fund a Physics OAJ. To the best of the knowledge such an approach has not yet been adopted by any of the available on-line scientific scholarly e-Journals (www.doaj.org). Multiple benefits is meant for all. Authors can get the possibility to publish their results for free after the referee and editorial acceptances. In turn, institutions may reduce their expenses, publishers of OAJ can make profits, and advertisers themselves can reach a bigger scientific market, bringing readers to their websites.

Target specific advertisement

To implement these ideas, it is necessary to have an appealing way to get advertisers to pay for the advertising of single scientific articles. To set out, how to get advertisers, is in the nature of doing science itself. Advertising to a scientific audience, which is notoriously exclusive and therefore difficult to reach, will persuade advertisers on the benefits from placing their ads. Most companies not only buy ads for competitive reasons, but also to communicate something. The later implies to potential product or to let scientists know about new services provided for doing research. Even more important advertisers can advertise to help a community of scientists to save some money.

Advertised OAJ offers to companies more exposure and most cost effective forms of (targeted) advertising to the right audience. For example, in doing experiments and measurements, trusted important advertisers can advertise to help a community of scientists with the objective of developing Information Processing Tools and Techniques to facilitate human-machine interaction without language barrier, creating and accessing multilingual knowledge resources and integrating them to develop innovative user products and services. Government is all set to provide the following products and solutions in public domain over the next one year.

- Free fonts (TTF and OTF) and word processors in all Indian languages.
- Optical Character recognition (OCR) in all Indian languages for information extraction, retrieval and digitisation.
- Speech Interfaces for Systems such as Railway Information, Healthcare, Agriculture, Disaster Management and other public utility services.
- Internet access tools for Indian languages like Browsers, Search Engines and email.
- Online translation services tools amongst Indian languages and English. It will help people to translate content in English and any Indian languages to target Indian language of their choice.
- The products/services are being made available through TDIL Data Centre with online helpdesk.

The government is on a mission, and time bound by an activity plan for TDIL-DC (Language Technology Utilities Distribution Channel) to boost research, productisation, deployment and support through:

- Opening developed technologies to the market,
- Upgrading or refining technologies to formulate products,
- Developing need based new technologies.

Source : www.ildc.in/introduction.htm