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Workshop on the Open Archives Initiative (OAI) and Peer Review Journals in Europe: A Report

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http://documents.cern.ch/age?a01193

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Abstract

A workshop on the Open Archives Initiative and Peer Review Journals in Europe was held at CERN, in Geneva, from March 22nd to 24th. The purpose of this workshop was to mobilise a group of European scientists and librarians who want to play an active role in organizing a self-managed system for electronic scholarly communication. Such a system should be compliant with the technical standards proposed by the Open Archives Initiative (OAI). The immediate deployment of OAI-compliant e-print repositories was a concrete objective of the workshop. The workshop had a second (exploratory) objective, related to the certification of writings submitted to archives.

Introduction

Internet, and especially the Web (born at CERN) opened new prospects and brought new expectations regarding the dissemination of scholarly publications. The high-energy physics community was the first one to take full advantage of the new technologies: the first e-print server created in 1991 at the Los Alamos National Laboratory by Paul Ginsparg was a stimulating experiment and still is a very interesting model.
ArXiv today hosts over 160,000 full-text papers, and the monthly submissions are close to 3,000. Other important servers were created in the same field (e.g. CERN server, 170,000 fulltext documents), or in other fields: CogPrints (Cognitive Sciences Eprint Archive), RePEc (Research Papers in Economics), NCSTRL (Networked Computer Science Technical Reference Library), etc. The "Sante Fe Convention"(1) (October 1999) pointed out the need for cooperation; building heterogeneous archive servers would result in a very confusing scholarly communication schema. The Open Archives Initiative originated from this convention, and it's aim is to develop a protocol that would allow different archive servers to be interoperable.

The *Open Archives Initiative Protocol for Metadata Harvesting* *(version 1.0)* was released in January, and two meetings were held in the beginning of this year (Washington, DC and Berlin, Germany) in order to promote the *OAI* and present the protocol specifications.

The Geneva Workshop

The call for a European contribution to the "Open Archives initiative" originated from the Access Division of LIBER (Ligue des Bibliothèques Européennes de Recherche), in agreement with the activities of the OAI steering committee (2). The organizing commitee was composed of: Raf Dekeyser (LIBER, Access Division; Katholieke Universiteit Leuven), Herbert Van de Sompel (OAI Executive; Cornell University) and Corrado Pettenati (Head of CERN Library).
The workshop had both a concrete and an exploratory objective: it aimed to promote the creation of OAI-compliant preprint archives in the context of co-operative agreements among institutions, and to explore new ways of implementing the essential peer-reviewing process. The main point was to discuss innovative solutions for the self-archiving of refereed scientific literature.

Open Archives Initiative Protocol for Metadata Harvesting

As an opening, Herbert Van de Sompel made a presentation of the protocol he developped with Carl Lagoze, with the support of a small community of alpha-testers (3). The protocol was designed with easy implementation in mind. It's intentionally easy, in order to provide low-barrier interoperability solutions for the e-print community. The interoperability standards aim to facilitate the efficient dissemination of e-prints, and may even have a wider scope, for all kinds of digital materials. The harvesting process is based on "data providers", which choose to use the OAI protocol as a means to expose their metadata, and "service providers" which issue OAI protocol requests to data providers, in order to build value-added services (4).

Promote Scholarly Communication by Electronic Means

The first part of the workshop was dedicated to the presentation of some already existing archive servers (such as CERN, arXiv, RePEc, etc.), as well as the presentation of tools and services built to improve the processes of electronic publication (OpCit, the Open Citation Project; TIPS, Tools for Innovative Publishing in Science; MPRESS, Mathematics Preprint Search System; Roquade, Electronic Publishing Services for Scientists; etc.). The OAI protocol seems to be the key for a better coordination of all these resources. All the presentations made during the different sessions can be viewed: http://documents.cern.ch/age?a01193

The Certification of Scientific Publications

The Open Archives Initiative and it's underlying information technologies open new perspectives and may be the foundation stone of a new scholarly communication schema, but this change should not lead to the loss of what made the value of the previous, traditional model: certification through the peer-review process. The existing peer-review was an efficient way to validate scientific papers. Even though the electronic environment offers new possibilities, the new certification mechanisms should be very cautiously experimented (open peer-review, open comments, forums...). This important question was discussed by participants representing all the actors involved in scholarly communication: commercial publishers, learned societies, researchers, librarians.

Closing Session Report and Final Recommendations (5)

1. Peer Review

The certification of scholarly work remains a fundamental part of a system for scholarly communication. Even though the existing peer-review mechanism fulfils certification in an appropriate way, the electronic environment allows for novel approaches to accord quality stamps to scholarly works. Such novel mechanisms would still have to prove their validity; however, this burden of proof should not prevent experimental work being done in this area. Such work was actually strongly encouraged. The experimentation may lead to the reinvention of peer-review, but may also move the existing peer-review system outside of the realm of established publishers. Statistics could easily be extracted from a fully electronic communication system. They could be used to obtain quality assessments for scholarly works: usage counts of a work, automatically extracted citation information with a scope beyond the core journals, amount of discussion generated by a paper submitted in a system with open peer-review and peer-comment, etc. Learned societies as well as scholars have to take up their responsibility regarding peer review. A better rewarding of peer-reviewers could be a means to encourage scholars to take part in the quality assessment process (e.g. through publishing their name). Experiments in the area of certification of works in an electronic environment need to be funded.

2. Economic Aspects

Preprint servers storing uncertified material introduce marginal costs, that can be paid for by the authors, the research institutions and/or by the public, as has generally been the case in the paper-based communication system. Offering an open access to uncertified materials souldn't be very difficult.
However, the peer-review process, as it is currently conducted, still has a cost, even in a fully electronic scholarly communication system. New models may reduce the costs, since cost elements would mainly be e-mail costs and small incentives for the reviewers.

There seemed to be consensus that the document producer (author, laboratory, research institute...) should cover these peer-reviewing costs:
- It is the author who gets the intellectual reward for the publication.
- Covering the costs should make the author more aware of the publication cost.
- The dissemination of scholarly work should be considered to be an essential part of the process of publicly funded research.

This model seems to be reasonable, but might be problematic in some poor countries. There is a need for an inventory of current economic models for electronic journals. Different models should be investigated.
Digital communication actually increased the libraries' expenditure, that's why libraries should play an active role in helping to build a new scholarly communication system. Funding could be obtained from savings on current expenditures: redundancy elimination, a better selection of the purchased journals on the basis of the quality of the peer-review process.

3. Protocol for Certification

Concrete actions were suggested to address the exchange of certification-related metadata using the OAI protocol in a trusted environment. The representatives from the American Physical Society and the Los Alamos arXiv volunteered to participate in a prototype. The OAI representatives will work to facilitate such a prototype and involve technical experts from the US and Europe. The OAI will also pay full attention to related standardization work conducted by other organisations such as the W3C, the Dublin Core, the German certification metadata effort, etc.
Libraries should both establish technical systems to support scholarly communication and increase the awareness of the academic community regarding ongoing issues in scholarly communication. LIBER especially, as a research library organization in Europe, should take some responsibility and help in the determination of the required metadata standards for efficient interoperability of the archives. LIBER could also be of help in creating an integrated environment for the use of classification schemes. Furthermore, LIBER could organize some concerted action for supporting the technical framework brought forward by the OAI.
LIBER and the individual libraries, in collaboration with other organizations like SPARC(-Europe?) or ICOLC, should also be more active in raising awareness regarding the OAI and how the OAI framework can play a role in the reform of scholarly communication.

5. Organizational Structure

As the activity of e-print servers grows in Europe, there may be a need for a European coordinating organization. Taking into account SPARC's activities so far, it is uncertain whether SPARC(-Europe) could play a facilitating role in the promotion of e-print-centred systems. More recent SPARC activities at least suggest this possibility. The need for a new coordinating organization is not evident; the coordination could also be a new task for LIBER. The OAI itself will seriously look into having a broader European involvement both in its Steering Committee and in its Technical Committee.

Final Recommendations

Challenged to name the three most urgent recommendations, the audience suggested the following:
- Conduct work in the area of using the OAI protocol for certification-related metadata. Create certification schemes building on existing efforts, where possible.
- Some credible library organizations should get in touch with scholarly publishers to promote the concept of exposing metadata of the materials (articles, books...) they publish via the OAI protocol.
- Increase the amount of institutional and/or departmental OAI-compatible e-print servers and take action to promote submission of scholarly work to those servers.

Conclusion

The Open Archives Initiative is far from being just an interesting concept. The OAI Protocol offers a very powerful technical framework, and will widely contribute to the rise of a new scholarly communication system. Its success depends on the implication of libraries, publishers, learned societies and researchers. The Workshop on the Open Archives Initiative and Peer Review Journals in Europe was a very stimulating one, and showed that we are not too far away from a new scholarly communication model, more efficient and fair.

References

1 Van de Sompel, Herbert and Carl Lagoze. "The Santa Fe Convention of the Open Archives Initiative". **D-Lib Magazine**. February 2000, Volume 6 Number 2. ISSN 1082-9873 (http://www.dlib.org/dlib/february00/vandesompel-OAI/02vandesompel-OAI.html)

2 And with the support of the European Science Foundation and EBSCO.

3 http://www.openarchives.org/OAISC/alpha-testing-press-release.htm

4 http://www.openarchives.org/faq.htm

5 The following conclusions are a slightly abridged version of the original closing session report: http://documents.cern.ch/archive/electronic/other/agenda/a01193/a01193s5t16/text/geneva-final.html (by Raf Dekeyser, Corrado Pettenati, Herbert Van de Sompel; Session Chair: William Y. Arms; Session Scribe: Thomas Krichel)

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