

Libraries Can Make Open Access Happen Today by Simply Redirecting Subscription Funds: An Update on the SCOAP³ Initiative

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Abstract

This article reviews the SCOAP³ initiative which aims to redirect the subscription funds used for the core journals in High Energy Physics, to make them Open Access. This model re-interprets the role of librarians in the Open Access debate. As they are the pivot of the current system, by keeping the lifeblood of scientific information flowing to their scientists, the authors argue that they are the best placed to make it change and take advantage of it.

Key Words: SCOAP³; open access; libraries

The last few years have seen an unstoppable growth of the Open Access movement, from an ideological discussion into a reality in the world of scholarly communication. In library circles, the Open Access debate was from the outset fuelled by the price of journal subscriptions. Today, with mature Open Access business models proposed by many publishers, Open Access and subscriptions are even more interconnected and part of the daily working landscape of libraries.

From a different perspective, it is worth remarking that traditionally, libraries are charged to play a central role in the process of scholarly communication and they have a unique potential to realise the seemingly unavoidable transition to Open Access at the dawn of the e-Science era. This short contribution reviews an initiative which aims to achieve Open Access to the entire peer-reviewed *corpus* of scientific articles of a single discipline, and, as a pilot, inspire a sustainable model for Open Access which meets the expectation of scientists, librarians and publishers.

This initiative, the Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP³)¹ aims to redirect the subscriptions funds used for the core journals in High Energy Physics to make them Open Access. This model re-interprets the role of librarians in the Open Access debate. As they are the pivot of the current system, by keeping the lifeblood of scientific information flowing to their scientists, we argue that they are the best placed to make it change and take advantage of it. Indeed, by redirecting subscriptions funds to achieve Open Access, SCOAP³ will create a sound and controllable market that will not cost more than the present, and bears promise of savings in the medium and long term.

The SCOAP³ Initiative

The SCOAP³ model was proposed in 2007² following a two-years articulate debate involving libraries, funding agencies, research organisations and publishers involved in the field of High Energy Physics (HEP), also known as Particle Physics. Open Access is not new for the scientists of this field, and green Open Access is since long their main way of communication.³ In the paper era, they used to mass-mail their preprints around the world in order to disseminate their research results in a timely fashion, precluded by the delays involved in the peer-reviewing and journal distributing processes.^{4, 5} With the development of new technologies, they built arXiv, the archetypal repository, which first made preprints freely available electronically to everybody.^{6, 7} However, if the repositories play the role of information dissemination, the published journals keep an essential function: scientific validation through peer review and registration. Therefore, notwithstanding the success of repositories, there is consensus in the scientific community about the need for high-quality peer-reviewed journals to provide the crucial service of independent peer review.

It is against this background that the SCOAP³ initiative was born, aiming to convert high-quality peer-reviewed HEP journals to Open Access pursuing two goals:

- to provide open and unrestricted access to all HEP research literature in its final, peer-reviewed form.
- to contain the overall cost of journal publishing by increasing competition whilst assuring sustainability.

In practice, transition to Open Access will be facilitated by the fact that the large majority of HEP articles is published in just six peer-reviewed journals from four publishers. Five of these six journals carry a majority of HEP content. These (and their publishers) are:

- Physical Review D (American Physical Society)
- Physics Letters B (Elsevier)
- Nuclear Physics B (Elsevier)
- Journal of High Energy Physics (SISSA/IOP)
- European Physical Journal C (Springer)

The aim of the SCOAP³ model is to assist publishers to convert these ‘core’ HEP journals entirely to Open Access. In addition, a sixth journal, Physical Review Letters (American Physical Society) is a ‘broadband’ journal that carries only a small fraction (10%) of HEP content; it is the aim of SCOAP³ to sponsor the conversion of this fraction to Open Access. This list of journals is not exhaustive and the SCOAP³ initiative is open to all high-quality journals carrying HEP content, either completely or in part.

In this new model, the publishers’ subscription income for HEP journals from multiple institutions is replaced by income from a single financial partner, SCOAP³. Each SCOAP³ partner will recover its contribution from the cancellation of its current journal subscriptions.

SCOAP³ Funding Model

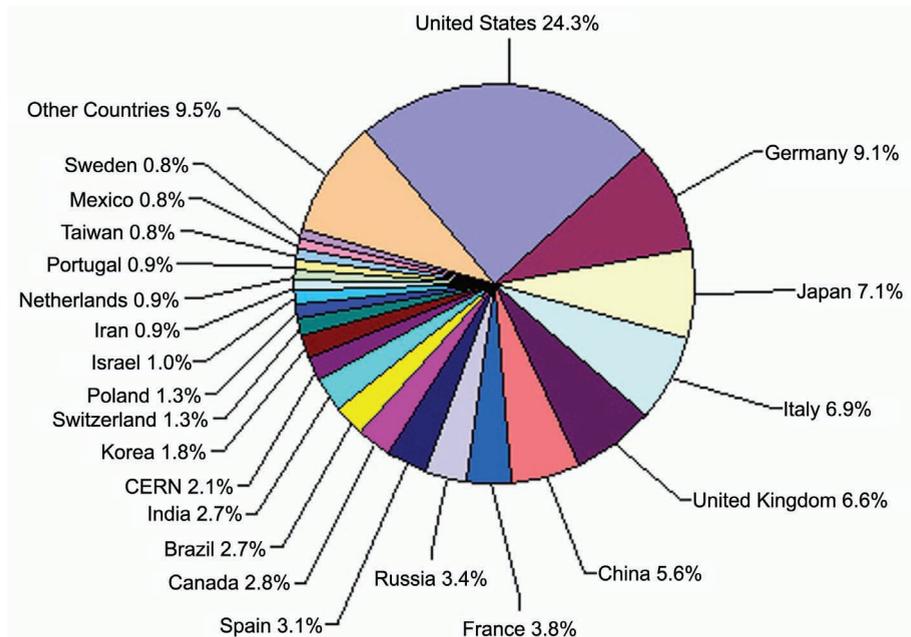
The price of an electronic journal is mainly driven by the costs of running the peer-review system and editorial processing. Most publishers quote a price in the range of 1,000–2,000 euros per published article.² On this basis,

taking into account the yearly volume of HEP articles, the estimate of the annual budget for the transition of HEP publishing to OA would amount to a maximum of 10 million euros per year.

In the SCOAP³ model, each country would contribute towards this budget envelope according to the number of its scientific publications.⁸ This is inspired by the fact that, effectively, the participants will be supporting peer review and other editorial services and therefore take a proportional share of the costs. This model is perceived to be somewhat more fair than the one where access is paid for, irrespective, sometimes, of the real utilisation of a resource. To cover publications by scientists from countries that cannot reasonably be expected to contribute to the consortium at this time, an allowance of not more than 10% of their contribution is foreseen from partners who join the consortium.

The expected contributions from most countries are presented in Figure 1.

Fig. 1: Distribution of HEP articles by country, average 2005–2006. Krause et al., 2007 [8].



SCOAP³ is now collecting Expressions of Interest from partners worldwide to join the consortium. Once it will have reached a critical mass, and thus demonstrated its legitimacy and credibility, it will be formally established, and its governance put in place. SCOAP³ will then issue a call for tender to publishers, aimed at assessing the exact cost of the operation, and then move forward with negotiating and placing contracts with publishers.

Thus, the annual budget for the SCOAP³ operation will be really established through the tendering procedure, which is currently in preparation. The tender and the subsequent contracts with publishers will address the use of Open Access articles, the conditions for un-bundling Open Access journals from existing subscription packages, and the reduction of subscription prices for 'broadband' journals following the conversion of a fraction of articles to Open Access.

The concept behind this call for tender is the re-interpretation of the subscription funds as funds used to provide at the source the services which are usually paid for at the end of the life cycle of a scientific article. In this way, such services can be tendered for, and contracts will link quality and price as well as volume and total price, two concepts present in many business transactions, but which are not present in the current subscription model.

Current Fundraising Status

The actual pledging of funds towards SCOAP³ started only in July 2007. At the time of writing, in November 2008, only 16 months later, 49.5% of the SCOAP³ budget has now been pledged.

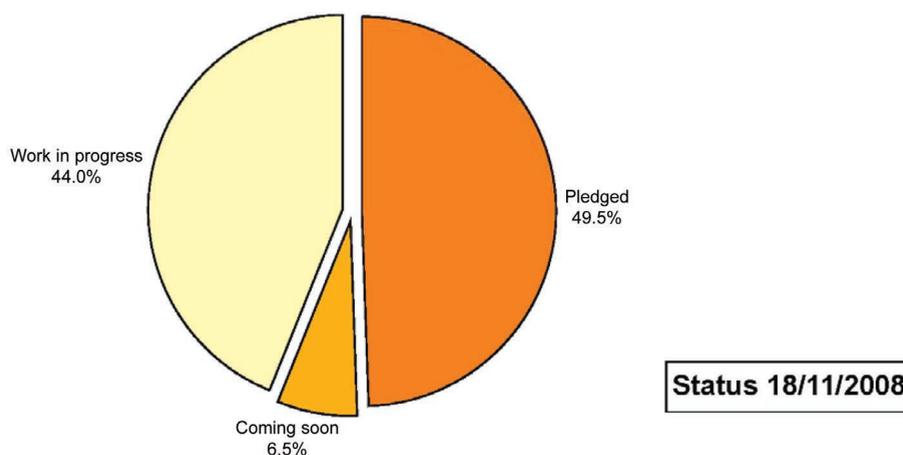
Most European countries have joined the consortium so far.⁹ Two main avenues are mostly followed for the financial coverage of the consortium. The first applies to countries where High-Energy Physics is centrally funded by institutes who also provide the scientific information to their researchers. This is the case of two large SCOAP³ partners, Italy and France, where the relevant institutes, INFN and CNRS/IN2P3, have pledged to re-direct their subscription expenditures to cover for the contribution expected from these countries to SCOAP³. The second avenue, most relevant to the LIBER community, is the pro-active role of libraries and consortia to either

pledge the re-direction of their centralised expenditures on subscription of HEP journals to SCOAP³, or organise structures which can do so. This is the case in Germany, where an alliance between the Max Planck Gesellschaft, the Helmholtz Gemeinschaft and university libraries, represented by the Technische Informationsbibliothek backed by the Deutsche Forschungsgemeinschaft, will re-direct their current subscriptions to provide the SCOAP³ contribution.

At the same time, SCOAP³ is today a truly international initiative. The United States, which are the largest SCOAP³ partner with a projected contribution of about 25% of the SCOAP³ budget envelope, have already pledged about half of this contribution to the consortium, through leading US libraries, library consortia and HEP laboratories.¹⁰ Beyond Europe and North America, Turkey, Israel and Australia have also joined the consortium.

The present status of fundraising is summarised in the Figure 2.

Fig. 2: Fundraising status of SCOAP³ in November 2008.



Discussions are in progress within the countries that are not yet members of SCOAP³, the largest of which, in terms of their contribution, being Japan, China, Russia, Brazil and Canada.

The Pro-active Role of Publishers

In the SCOAP³ model publishers will continue to have the primary responsibility of ensuring the highest standards of quality for the published articles through independent editorial boards and peer review. They will ensure the dissemination of Open Access articles by posting them on their websites, without any access barrier, and by feeding them to a SCOAP³ repository, which will in turn be harvested by all other repositories interested in the subject, at an institutional or a disciplinary level.

Publishers will benefit from a more sustainable business model than in the traditional subscription schema, which is becoming increasingly fragile. Furthermore, they will continue to meet the demands from libraries, research collaborations or any other potential group of users and charge these groups individually for 'premium' services and products outside the scope of SCOAP³.

The formal discussion with the publishers did not start yet, as the tendering process has not been launched. However, the publishers show already great support to Open Access in HEP.

The APS has since long supported author self-archiving of publisher-formatted post-peer review articles on the author's institutional repository, and its support for discipline repository extends to even hosting a mirror of arXiv. Furthermore, since 1998 the APS publishes an Open Access instrumentation journal based on sponsorship.

Since 2007 SISSA/IOP offers an Open Access institutional membership model for its Journal of High Energy Physics as well as the Journal of Instrumentation. This model allows member institutions to publish all their papers in Open Access. In 2008, meeting a strong request for Open Access from international collaborations building the LHC accelerator and detectors at CERN,¹¹ JINST published in Open Access their first seminal articles.

In November 2007, Springer waived the publishing fees for all HEP experimental papers to be published in Open Access in the journal European Physical Journal C. It reinforced this support in October 2008, stating clearly that this agreement was concluded in anticipation of developments of viable Open Access models.¹²

In September 2008, Elsevier has also announced that it will join Springer and SISSA/IOP in publishing Open Access without any author fees the first articles describing the physics results of the LHC.¹³

Some weeks ago, EPL, published under the scientific policy and control of the European Physical Society by EDP Sciences, IOP Publishing and the Italian Physical Society (SIF), announced free of charge Open Access to all authors submitting experimental and theoretical letters in research areas focusing on the High-Energy Physics community.¹⁴

These commitments to Open Access in HEP bear promise to a successful conclusion of the tendering procedure that SCOAP³ can initiate as soon as librarians worldwide will have pledged their support for the initiative.

Conclusions

SCOAP³ is a unique experiment of redirecting subscription costs of journals for an entire discipline to make them Open Access. By this very same principle is implied that this new model will not cost more than what is currently paid by the community. In addition, by linking quality and price, as well as volume and price, the SCOAP³ model bears the promise of additional savings.

Since the 2007 LIBER conference, where the project was first presented¹³ the progress which has been accomplished is enormous: half of the budget is now collected from a truly international pool of libraries and SCOAP³ is already preparing the second phase of its programme, the tendering towards publishers.

This achievement bears witness to the vision and involvement of librarians worldwide, who not only debate Open Access but do Open Access. The most remarkable is that this can be done without additional cost — it just requires a strong vision on one way in which librarians will continue to serve the scientific community in the digital era. The ultimate future and stability of scholarly communication is actually in the hands of the libraries, and Open Access is the opportunity to achieve their basic objectives of access at a fair and sustainable cost. SCOAP³ offers librarians the possibility to experiment with a new Open Access model with full backing of the scientific community, and we hope more colleagues worldwide will stand up and seize this opportunity.

Notes

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- ¹ SCOAP³ website, <http://scoap3.org>
- ² *Towards Open Access Publishing in High Energy Physics : Report of the SCOAP³ Working Party*, April 2007, <http://www.scoap3.org/files/Scoap3WPReport.pdf>
- ³ L. Goldschmidt-Clermont, *Communication Patterns in High-Energy Physics*, 1965; published in High Energy Physics Libraries Webzine, issue 6, March 2002, <http://library.cern.ch/HEPLW/6/papers/1/>
- ⁴ R. Heuer, A. Holtkamp, S. Mele, *Innovation in Scholarly Communication: Vision and Projects from High-Energy Physics*, 2008, arXiv:0805.2739.
- ⁵ R. Aymar, *Scholarly communication in High-Energy Physics: past, present and future innovations*, 2008, CERN-OPEN-2008-015. To appear in *European Review*.
- ⁶ P. Ginsparg, *Computers in Physics* 8 (1994) 390.
- ⁷ P. Ginsparg, *The global-village pioneers*, 2008, Physicsworld.com.
- ⁸ J. Krause et al, *Quantitative Study of the Geographical Distribution of the Authorship High-Energy Physics Journals*, July 2007. CERN-OPEN-2007-014. <http://www.scoap3.org/files/cer-002691702.pdf>
- ⁹ Austria, Belgium, CERN, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Romania, Slovak Republic, Sweden, Switzerland and the United Kingdom (JISC).
- ¹⁰ California Digital Library, California Institute of Technology, Argonne National Laboratory, Fermilab, Los Alamos National Laboratory, Lawrence Berkeley National Laboratory, Pacific Northwest National Laboratory, Stanford Linear Accelerator Center, Thomas Jefferson Laboratory, Emory University, Greater Western Library Alliance, Johns Hopkins University, Lewis and Clark College, Maine InfoNet, NERL — North East Research Libraries consortium, Northwestern University, OhioLINK, Purdue University, TRLN — Triangle Research Libraries Network, University of Illinois at Urbana-Champaign, University of Wisconsin at Madison, VIVA — Virtual Library of Virginia.
- ¹¹ Statement of the LHC collaborations in support of Open Access, <http://www.scoap3.org/community/lhc.html>
- ¹² Open Access Publishing in the European Physical Journal (EPJ), http://www.epj.org/open_access.html
- ¹³ Elsevier statement on Open Access for LHC papers, http://www.elsevier.com/framework_products/promis_misc/nuclearadcolour80x210RGB.pdf

¹⁴ EPL statement on Open Access for Experimental and Theoretical HEP Articles, <http://www.iop.org/EJ/journal/EPL>

¹⁵ J. Vigen, *A sustainable business model for Open-Access journal publishing: a proposed plan for High-Energy Physics*, 2007, *Liber quarterly*, 17.