The Open Access Surge

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This article follows the development of Open Access and adumbrates the importance of mandates from funders and others in increasing the number and proportion of Open Access materials. Two current supporting European FP7 projects, PASTEUR4OA and FOSTER, are discussed.

The Rise and Rise of Open Access

In 2011 a study by Mikael Laakso et al. (p.8) identified three earlier cycles in the development of Open Access (OA) publishing: the "Pioneering Years" (1993 to 1999), the "Innovation Years" (2000 to 2004), and the "Consolidation Years" (2005 to 2009).

The Pioneering Years were characterised by innovation by individuals or small groups of scholars, using simple technologies. There was rapid growth from, obviously, a small base: in 1993, it is estimated that 20 open access journals published 247 articles; by 2000, 741 journals are estimated to have published 35,519 articles. Many of these early journals did not survive.

The Innovation Years coincided with the wholesale movement of journal content to electronic delivery. In terms of OA they were characterised by burgeoning advocacy of OA and the development of economic models for Gold OA, notably article processing costs (APCs). BioMed Central and PLoS demonstrated the viability and high quality of Gold OA. There was significant growth of both titles and articles: by 2005, 2,837 journals published 90,720 articles, an increase of 155% on 2000.

The Consolidation Years saw the growth of infrastructure to support OA, such as open source publishing software, the DOAJ, and Creative Commons licences. Discovery was enhanced and enabled by Google and Google Scholar. Growth was not as spectacular, but still very strong: in 2009, 4,767 journals published 191,851 articles, an increase of 111% on 2005. One might add that the Consolidation Years also saw the adoption by funders of policies on deposit and public availability of the results of the research they fund. The first was the Wellcome Trust, followed by the National Institutes of Health and many others.

If Laakso's cycles run at 5-yearly intervals, we are standing near the start of a new leap forward. Recent developments support this assumption. In the UK we have seen the Finch Report (Working Group on Expanding Access to Published Research Findings), which:

- Emphasised the benefits of OA for all sectors, including health
- Gave an impetus to Gold OA
- Raised the profile of OA generally

We have also seen the introduction of the requirement of deposit on acceptance by the publisher of Green OA for articles to be considered in the next (ca. 2020) Research Excellence Framework.

The European Perspective

Widening the scope to Europe, we now also have the European Commission Recommendation of 17.7.2012 on access to and preservation of scientific information a policy that applies to the Horizon 2020 (H2020) €80 billion research funding programme and to research projects and programmes across all ERA (European Research Area) countries.

The main elements of the policy are:

- Open Access is mandatory for peer-reviewed publications
- The policy is a Green OA mandate (repositories): publish as normal in subscription-based journals; place author's copy in OA repository
- For Gold OA, the policy permits payments from grants for OA journal publication fees where they are levied
- The policy says nothing about OA for monographs, but there may be some attention to this issue as time goes on
- The policy is very definite about Open Research Data, announcing an Open Data pilot for the H2020 programme

The European Commission has recommended that Member States follow its example and make OA policy where they have not already done so, and that these policies should emulate the H2020 one. It is also funding two major FP7 projects in support of these aims: PASTEUR4OA and FOSTER.

It is worth noting that since the publication Finch Report the pendulum has swung back towards Green OA: the policies mentioned above accommodate Gold OA, by offering funding, and may betray support for Gold. It is however Green deposit that is required.

PASTEUR4OA

PASTEUR4OA (Open Access Policy Alignment Strategies for European Union Research), is a two-year project focusing on Open Access policy developments; so far main activities relating to policy include mapping policies and policy-related activities, and engaging with policymakers to provide them with information about the general policy picture and what makes a policy effective. Work in the first year included:

- Describing and enumerating the policy picture in Europe and around the world
- Rebuilding ROARMAP, the registry of OA policies, to include the development of a new, detailed classification scheme that describes policy elements
- Collecting data on the levels of Open Access material in institutional repositories around the world

- Measuring policy outcomes and analysing which elements of a policy contribute most to its effectiveness

The total number of policies globally is now (January 2015) 624; 55% of them are from Europe. Of these, approximately two-thirds are institutional policies and about 10% are funders' policies. Over half are mandatory, requiring some action rather than simply requesting it; nearly 60% of these mandatory policies are European.

Across all institutions, more than three-quarters of published articles are not deposited at all, 8% are Metadata-Only, 3% Restricted Access and 12% Open Access. The rates vary by discipline. Deposit of Open Access material was over four times higher (14%) for institutions with a mandatory policy than for those without (3%).
Statistical examination or the deposit rate in relation to different policy criteria showed:

- Positive correlations between Open Access and Restricted Access deposit rates and the following policy criteria: **Must deposit, Cannot waive deposit, Link to research evaluation, Cannot waive rights retention, Must make item Open Access**
- Significant correlation was found between Open Access deposit rates and **Must deposit** and **Cannot waive deposit**

As of January 2015, there are not yet enough OA policies to test whether other policy conditions would further contribute to mandate effectiveness. However the analysis provides a list of criteria around which policies should align to maximise OA:

- Must deposit (i.e. deposit is mandatory)
- Deposit cannot be waived
- Link deposit with research evaluation

FOSTER

FOSTER (Facilitate Open Science Training for European Research) is a 2-year project, carried out by 13 partners across 8 countries. The primary aim is to produce a Europe-wide training programme that will help researchers, postgraduate students, librarians and other stakeholders to incorporate Open Access approaches into their existing research methodologies.

Many researchers or other staff working at research institutions are not confident of the practical steps they may need to take to comply with the EC's recommendations, to deposit articles in a repository, or to train other members of their institutions to do the same. FOSTER is a project designed to equip young researchers, established scholars, librarians, library managers, and other stakeholders, with the skills to function effectively as the range of open access policies are refined and aligned across the EU. It can therefore be seen as sister-programme to PASTEUR4OA, which concentrates on maximising the effectiveness of the polices.

FOSTER is preparing online teaching materials and face-to-face training packages to help researchers comply with Open Access policies in line with the recommendations and

expectations of the Horizon 2020 framework. FOSTER will enable its stakeholders to contribute to the growing holdings of freely accessible research papers in Europe, to share and preserve their data productively, and will prepare them to engage with and develop new knowledge communities in the digital age. The main activities are:

- Identifying already existing content that can be reused in the context of the training activities and repackaging, reformatting it to be used within FOSTER, and develop/create/ enhance contents if/where they are needed
- Creation of the FOSTER Portal to support e-learning, blended learning, self-learning, dissemination of training materials/contents and Helpdesk
- Delivery of face-to-face training, especially training trainers/multipliers that can carry on further training and dissemination activities, within their institutions, countries or disciplinary communities

Conclusion

The initiatives discussed above, both national and transnational, concentrate on:

- Maximising the effectiveness of policies in terms of increasing the number and proportion of OA scholarly communications
- Harmonising policies where possible, in order to avoid the perceived burden of multiplicity of requirements
- Practical support for all involved in the stages of the research process.
- It seems clear that these initiatives have the potential to move OA forward, and signal another five years of development

References

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