European Commission - Open science country note

Open science and the national context

The Commission is involved with open access in its capacities as a policy maker (proposing legislation), a funding agency (the Seventh Framework Programme for Research and Innovation [FP7] and Horizon 2020 framework programme for research and innovation) and a capacity builder (through funding of specific projects for open access infrastructure and policy support actions).

The European Commission sees open access not as an end in itself, but as a tool to facilitate and improve the circulation of information and transfer of knowledge in the European Research Area (ERA) and beyond.

The Commission has met with and listened to all the main stakeholders and communities interested in open access. These efforts culminated in its publication of *three major policy documents* on 17 July 2012:

· Firstly, the Commission adopted the ERA communication entitled A Reinforced European Research Area Partnership for Excellence and Growth. The ERA is a unified research area open to the world where researchers, scientific knowledge and technology circulate freely. One of the key actions foreseen to achieve a reinforced partnership is to optimise the circulation, access to and transfer of scientific knowledge. On the same day that the Commission adopted the ERA Communication, the European Commissioner also signed Memoranda of Understanding with key stakeholder organisations.

· The second policy document, a communication entitled Towards Better Access to Scientific Information, set out the state of play in 2012, identified barriers, and provided a number of measures to ensure that the results of Europe's publicly funded research are fully accessible to researchers, businesses and the general public.

· The third policy document published by the Commission is a Recommendation to the Member States on Access to and Preservation of Scientific Information. This recommendation covers improvement of policies and practices on open access to scientific publications and research data, as well as the preservation and use of scientific information. The aim is not to harmonise national policies but to co-ordinate them, in order to make sure that Member States are all on the same page.

The European Commission continues to work with all stakeholders to implement and promote open access. As concerns its own research framework programme, the Commission implemented a pilot for open access in the Seventh Framework Programme for Research and Innovation (FP7), which covered 20% of the budget for seven research areas of FP7 and proved to be an effective tool to further the development of open access. The Commission also funds several projects to support and provide further insights into open access and related issues. Most notably, the Open Access Infrastructure for Research in Europe (OpenAIRE) project supports the implementation of open access in Europe by providing an infrastructure and national helpdesks. The European Research Council has also published open access guidelines.

The European Commission will also engage with "Science 2.0" during the course of 2014. Science 2.0 defines the current systemic changes in the way the science and research system functions. It is characterised by an open, collaborative, networked way of doing research employing "big data" and multi-actor input. Science 2.0 is enabled by digital technologies, and driven by the globalisation and growth of the scientific community as well as by the need to address the great challenges of our times. Science 2.0 impacts the entire research cycle, from the inception of research to its publication, as well as the way this cycle is organised. It also affects evaluation of the quality and impact of research.

During 2014, the Directorate-General for Research and Technological Development (DG RTD)

conducted a stakeholder consultation process (involving publishers, academia, research funders, etc.); online public consultation was followed up by multi-stakeholder workshops during the autumn of 2014, with the following aims:

· Assess the degree of awareness of Science 2.0 among the stakeholders.

· Identify possible policy implications and actions that would strengthen the competitiveness of the European science and research system by enabling it to take full advantage of the opportunities offered by Science 2.0.

· Identify any policy action that would foster in the long term a process of making science more reliable, efficient, and responsive to the great challenges of our times.

Open access to publications and data is not the subject of this consultation process, as there are established Commission policies on the topic. However, open access is an element of Science 2.0. Open access policies are expected to co-evolve with the Science 2.0 process.

Open science research and innovation actors

The European Commission works together with the 28 EU Member States, as well as key stakeholder organisations such as the European University Association (EUA), Science Europe, the European Association of Research and Technology Organisations (EARTO), the League of European Research Universities (LERU) and NordForsk.

Open science and business sector actors

The European Commission works with representatives from publishers (“traditional” and open access), libraries, universities and infrastructure providers.

Policy design - Open data

A new feature of Horizon 2020 is the Open Research Data Pilot, which aims to improve and maximise access to and reuse of research data generated by projects. The legal requirements for projects participating in this pilot are contained in the optional article 29.3 of the Model Grant Agreement. Other relevant information, such as the scope of the pilot, is provided in the introduction to the Horizon 2020 Work Programme. The Open Research Data Pilot will be monitored throughout Horizon 2020, with a view to further developing EC policy on open research.

For the 2014-15 Work Programme, the areas of Horizon 2020 that participate in the Open Research Data Pilot are:

· future and emerging technologies

· research infrastructures, including e-infrastructures

· leadership in enabling and industrial technologies – information and communication technologies

· societal challenge: secure, clean and efficient energy, including smart cities and communities

· societal challenge: climate action, environment, resource efficiency and raw materials

· societal challenge: Europe in a changing world – inclusive, innovative and reflective societies

· science with and for society.

Note that individual projects funded under Horizon 2020 and not covered by the scope of the pilot may participate on a voluntary case-by-case basis (opt in).

The Commission acknowledges that there are valid reasons for not making data openly available. Projects may therefore, at any stage, opt out of the pilot for a variety of reasons, namely:

· if participation in the pilot is incompatible with the Horizon 2020 obligation to protect results, if they can reasonably be expected to be commercially or industrially exploited

· if participation in the pilot is incompatible with the need for confidentiality in connection with security issues

· if participation in the pilot is incompatible with existing rules concerning the protection of personal data

· if participation in the pilot would jeopardise the achievement of some major goals of the project

· if the project will not generate/collect any research data

if there is any other legitimate reason not to take part in the pilot (at the proposal stage – a free text box is provided).

Policy design - Open/increasing access to scientific publications

Open access to scientific peer-reviewed publications is an underlying principle in Horizon 2020.

Beneficiaries will be asked to i) deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications, and ii) ensure open access as follows:

· For open access publishing (gold open access researchers can publish in open access journals, or in journals that sell subscriptions and also offer the possibility of making individual articles openly accessible hybrid journals). Article processing charges are eligible for reimbursement in the Horizon 2020 grant. As regards APCs incurred after the end of the grant agreement, a mechanism for paying some of these costs is being piloted. In the case of gold open access, the access must be granted on the date of publication at the latest. Note that in case of gold open access, a copy must also be deposited in a repository.

· For self-archiving (green open access), researchers can deposit the final peer-reviewed manuscript in a repository of their choice. In this case, they must ensure open access to the publication within six months of publication (twelve months for the areas of social sciences and humanities).

Beneficiaries must also ensure open access to the bibliographic metadata that identify the deposited publication.

The concept of *publication* has rapidly evolved in recent years and in the context of the digital era. The term is increasingly understood to include the data underpinning the publication and results presented, also referred to as underlying data. These data are needed to validate the results

presented in the deposited scientific publication, and are therefore seen as a crucial part of the publication and an important ingredient enabling scientific best practice. This is why beneficiaries must aim to deposit the research data needed to validate the results presented in deposited scientific publications, ideally via a data repository. They may also aim to grant open access to these data, but there is no obligation to do so. Rather, this provision in the Model Grant Agreement refers to the need to ensure sound management of the data generated in a project. In this sense, it is different from the Open Research Data Pilot elaborated above.

In all cases, the Commission would like to encourage authors to retain their copyright and grant adequate licences to publishers.

Skills for open science and open data

A lack of data scientists has indeed been identified as a major challenge for Europe.

In a broader context, the European Commission is leading a multi-stakeholder partnership to tackle the lack of digital skills in Europe and the several hundred thousand unfilled ICT-related vacancies. For more information see http://ec.europa.eu/digital-agenda/en/grand-coalition-digital-jobs-0 [1].

Open science and international co-operation

Science is a global endeavour and so is open access, with over 200 organisations mandating open access in one form or another around the globe. The Commission is therefore actively reaching out and interacting with key stakeholders in order to exchange knowledge and identify lessons learned and best practices. The Commission is advocating open access in a wide range of policy forums, including the Global Research Council, the G8, UNESCO, the Berlin Open Access Conferences, and the Research Data Alliance.

Links
[1] http://ec.europa.eu/digital-agenda/en/grand-coalition-digital-jobs-0