France - Open science country note

Open science and the national context

Two policy initiatives are currently under way concerning the underlying infrastructures for open data and sharing of scientific results. First, France is revising its research strategy and, for the first time, data management plans and compliance with international open data standards have become selection criteria. A second initiative concerns the elaboration of a national digital strategy that encompasses open access, open courseware, open public data and the underlying data infrastructures that are needed to accomplish these.

Open science research and innovation actors

1. France's National Research Agency (ANR) (Labcom programme).
2. The Ministry for Education and Research (Directorate-General for Research and Innovation [DGRI], Directorate-General for Higher Education and Professional Insertion [DGESIP])
3. Higher education institutions: Paris-Dauphine, École des Hautes Études Commerciales (HEC), Polytechnique, Centrale, and the Institut des Hautes Études Scientifiques [1] (IHES).
4. Public research organisations and other government labs, such as the Alternative Energies and Atomic Energy Commission (CEA), the Institute for Research in Computer Science and Automation (INRIA), and the National Center for Scientific Research (CNRS).
5. The Ministry of Economics and Industry (Direction Générale des Entreprises).

Policy design - Open data

Open data and open government are at the heart of French policy for modernising public action. The country's efforts have included the establishment of a substantial legal framework for open data based on Act No. 78-753 of 17 July 1978, regarding freedom of access to administrative documents and the reuse of public information; the creation of the *Commission d'accès aux documents administratifs* (CADA) and the European directive No. 370 of 2005, relating to access to information, public participation in decision making, and access to justice in environmental matters.

Since 2001, the French Prime Minister's task force for open government and open data, Etalab, invested EUR 500 000 for the creation of a platform for co-operation between government and citizens.

Paving the way for open social data, www.data.gouv.fr [2] is the first French government website open to citizens' contributions: any user can improve the data, interact with them, and share new datasets. Alongside data shared by administrations and local authorities, it hosts data of general interest shared by (among other groups) civil society, NGOs, universities and research, businesses and journalists, counting a total of over 13 000 datasets and 1 000 reuses so far.

Enriching or completing data is the major objective of the French open data initiative. The data.gouv.fr [2] platform enables government to publish public data but also allows civil society to enhance, modify, interpret and even co-produce information of general interest (Base d'Adresses Nationale Ouverte - BANO [3]). As registration and use of the platform is free, citizens, public services (national government, local government and private/public body sectors) or any organisation registered under the identity of an individual or a corporation can use it.

Public data generated or received in connection with a public service mission can relate to taxes, budgets, grants, costs, planning, unemployment, housing renovation, measures of air quality, addresses of public services, crime, tourism statistics, election results, social security, agricultural policy, or discharge of pollutants into the air from industrial installations.

However, personal data (fiscal or legacy data, medical data, etc.) and data whose publication is against the law (medical, national defence or statistical confidentiality, trade secrets, etc.) are not accepted. For more information on best practices in publishing, Etalab has a Guide to publication. [4]

With respect to copyright, public administrations systematically publish open public data under Open Data License [5]**,** which allows them to reproduce, distribute, adapt and operate the data – including for commercial purposes – and provides appropriate mention of paternity. The *établissements publics à caractère industriel et commercial* (EPIC) and local authorities can choose for themselves the particular licence: whether Open License (the state's recommendation) or an Open Database Licence (ODbL). Finally, individuals, associations and companies publish and reuse data, including for commercial purposes (applications, visualisations, web services, etc.) through the Open License of their choice.

Recently this initiative received an award from the Open Government Partnership (OGP), in which France has been elected a member of the Steering Committee [6]. This award honours efforts to build a platform for and with the civil society.

Policy design- Open/increasing access to scientific publications

On 24 January 2013, the Minister of Higher Education and Research stated that France is unequivocal in its support of open access as well as the roads to it: green, gold, and others. A national policy on open access is currently being implemented; it comprises a program of seven important actions:

1) Develop green open access. Launch a consultation on embargo times.

2) Monitor the evolution of the gold open access: establish principles for controlling gold open access publishing costs. Accord a larger share of gold access to, for example, the Public Library of Science (PLOS) and the open access publisher BioMed Central.

3) Develop hybrid economic models combining public investment in infrastructure and marketing of services with high added value (e.g. revues.org [7]).

4) Optimise the national open archive repository HAL (Hyper Article in Line), in connection with institutional repositories.

5) Offer researchers a national publishing contract model.

6) Engage in a discussion on the use of scientific outputs in research evaluation modes.

7) Initiate collaboration with national publishers to support their actions abroad.

The political choices for France for open access

Aware that today no one can predict with certainty what will prove the best model, or which model will prevail in a globalised society and knowledge economy, the French position seeks a balance. In agreement with the Commission, the country advocates implementation of a pragmatic and coherent policy, guided by the concern to reach even-handed solutions to the principal problems encountered when implementing open access:

· The financing of journals up front by the authors, the gold solution

· Self-archiving by the authors, the green solution.

Each of these ways has its advantages and disadvantages that vary as a function of the scientific community concerned. Each must serve as a stimulus but also as a safeguard against the other.

Immaterial infrastructure

The *Bibliothèque scientifique numérique* (Digital Scientific Library, the BSN) was launched in 2009 as a national infrastructure for all stakeholders in higher education and research. Its aim is to structure the field of scientific and technical information on a national scale, and to explore its different underlying challenges with ten fields of activities.

Development of the BSN has focused on two activities: recasting the Open Archives division, which now becomes the Open Access division, dealing with all aspects and components of free access to publications; and creating a new division devoted to research data: (www.bibliothequescientifiquenumerique.fr/ [8]).

Digital infrastructures

France also develops and supports several digital infrastructures, in order to ensure access to and dissemination, preservation and interoperability of data. The overall financial support in 2013 is about EUR 1.8 million. It includes:

· HAL, the national open archive repository, which is trans-disciplinary and interoperable with local platforms and international thematic archives such as the e-print repository ArXiv and the free full-text archive of biomedical and life sciences journal literature PubMed Central.

· Thèses.fr, a portal for consultation of on-going theses (30 000 currently).

· Open Edition, a national platform of books and journals, that publishes over 380 journals in the social sciences and humanities, as well as research blogs: www.openedition.org/?lang=en [9]

· Persée, a free access portal of retrospective collections (currently over 140) in the social sciences and humanities, with close to 3 million visits per month: www.persee.fr/web/guest/home [10]

· CINES (National Computing Center for Higher Education), a permanent archive warehouse for all the platforms and later for research data: www.cines.fr/en/ [11].

Implementation of open access policies

ANR (the French research funding agency) announced its support of open access in 2007. ANR has since reaffirmed its commitment as a signatory of the new partnership agreement in 2013 in favour of open archives and the HAL platform, alongside more than 25 educational and research institutions.

Some establishments, such as INRIA (Institute for Research in Computer Science and Automation) are implementing a policy of mandatory deposits of publications in open archives, such as HAL. They use a model where assessments of researchers for funding purposes only consider publications from specific repositories.

Skills for open science and open data

Local actions

Local open access policy is accompanied by training, so that most research organisations have implemented a mechanism to support open access research, training and consultation. They have some form of training in place, and special assistance with the management and use of open access repositories. Several organisations also support research into various aspects of open access. They have also carried out consultations, surveys and studies among communities of researchers, librarians and administrators.

National actions

In the frame of BSN (see Section 4b), a working group on "Skills" is focusing on new professions and essential skills connected with open access, such as data librarians and data scientists.

Also, training in the national open access platform HAL is provided by the CCSD (*Centre pour la Communication Scientifique Directe*), which supports and develops the platform.

France has also a network of seven regional training units for scientific and technical information (URFIST) that aim to train researchers and Ph.D. students in problems relating to the development of science (publications, open access, data research, etc.). Each year these regional units train nearly 5 000 students and about 700 teachers and researchers. They assist the efforts of institutions of higher education and research to promote dissemination of scientific and technical information (IST) and collaborate with bodies such as the Institute for Scientific and Technical Information (INIST) within the CNRS. A renovation of this networking was launched to bolster its effectiveness and meet the increasing need for training of researchers and Ph.D. students in IST.

Open science and international co-operation

France actively participates in the development of European and global open science data policies. France contributes – through the European Commission programme e-IRG (e-Infrastructure Reflection Group) and the global alliance RDA (Research Data Alliance), co-funded by the EU, the US National Science Foundation (NSF) and the Australian National Data Service (ANDS) – to working groups that are currently elaborating new standards and modalities for e-infrastructure commons, and more generally promoting open science.

Links
[1] http://www.google.fr/url?q=http://fr.wikipedia.org/wiki/Institut_des_hautes_%25C3%25A9tudes_scientifiques&sa=U&ei=9zXXVPGDJ4qeggS0_YLQAg&ved=0CDAQFjAH&usg=AFQjCNFm3AcGtAhFREt6-6TXZh5FC7VnPw
[2] http://www.data.gouv.fr/
[3] http://openstreetmap.fr/bano
[4] http://wiki.data.gouv.fr/wiki/Guide_de_publication
[5] https://wiki.data.gouv.fr/wiki/Licence_Ouverte_/_Open_Licence
[6] http://www.opengovpartnership.org/about/steering-committee/steering-committee-2014-rotation-results
[7] http://www.revues.org/
[8] http://www.bibliothequescientifiquenumerique.fr/
[9] http://www.openedition.org/?lang=en
[10] http://www.persee.fr/web/guest/home
[11] https://www.cines.fr/en/