



Opportunities for Data Exchange



COMPILATION OF RESULTS ON DRIVERS AND BARRIERS AND NEW OPPORTUNITIES

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Sunje Dallmeier-Tiessen ^a, Robert Darby ^{b, *}, Kathrin Gitmans ^c, Simon Lambert ^b,
Jari Suhonen ^d, Michael Wilson ^b

EXECUTIVE SUMMARY

^a CERN. CH1211 Geneva 23. Switzerland

^b STFC Rutherford Appleton Laboratory, Harwell Science and Innovation
Campus, Didcot OX11 0QX, United Kingdom

^c Helmholtz Open Access Coordination Office, c/o Alfred Wegener Institute for
Polar and Marine Research, Am Handelshafen 12, 27570 Bremerhaven, Germany

^d CSC - IT Center for Science Ltd. P.O. Box 405, FI-02101 Espoo, Finland

* Corresponding author: robert.darby@stfc.ac.uk

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EXECUTIVE SUMMARY

Opportunities for Data Exchange (ODE) is a FP7 Project carried out by members of the Alliance for Permanent Access (APA), which is gathering evidence to support strategic investment in the emerging e-Infrastructure for data sharing, re-use and preservation. The ODE Conceptual Model has been developed within the Project to characterise the process of data sharing and the factors which give rise to variations in data sharing for different parties involved. Within the overall Conceptual Model there can be identified models of *process*, of *context*, and of *drivers, barriers and enablers*. The Conceptual Model has been evolved on the basis of existing knowledge and expertise, and draws on research conducted both outside of the ODE Project and in earlier stages of the Project itself (Sections 1–2).

The *process* model describes the functional logic of data sharing in terms of agents, actions and objects. The *context* model describes the systemic scholarly communication context in which data sharing occurs. This context is described in terms of stakeholder roles (researcher, funder, publisher, etc.), and key variables that qualify the generic model, including research discipline, research sector, and geopolitical context (national/regional policy and legislation, infrastructure, funding).

The model of *drivers, barriers and enablers* provides a comprehensive description of the factors that motivate, inhibit and enable the sharing of research data. Drivers, barriers and enablers are variously defined in terms of individual-psychological, social, organisational, technical, legal and political components. They affect *whether* data are shared, *how* they are shared, and *how successfully* they are shared.

The Conceptual Model was validated, refined and elaborated through a process of consultation and review with expert and interested members of the key stakeholder groups (Section 3). This validation process was conducted in two stages: a workshop on data sharing was held in appendix to the APA Conference in November 2011, in which a group of data sharing experts provided feedback on the Model; and between February and April 2012 telephone interviews based on the Model of drivers and barriers were conducted with 55 individual members of different stakeholder groups, including researchers in all the major disciplinary areas.

Discussions with informed and expert members of different stakeholder groups also served to identify salient issues and converging views in respect of the drivers and barriers that bear on data sharing activities. These have been discussed in thematic sections that provide interpretive summaries of the views and experiences of workshop participants and interviewees (Section 4). The following themes are discussed:

- The role of publishers in data sharing;
- Finance: funding infrastructure and data services;
- Data management: skills training and expert support;
- Standards and interoperability;
- Data citation and description for discovery and use;

- Public visibility of research data;
- Data sharing culture;
- National and regional policy and legal frameworks;
- Incentives in the academic reward system for good data practice;
- Quality assurance of data.

For each theme a summary of the views and experiences discussed is given, followed by a brief analysis of the most salient drivers and barriers and the enablers that stakeholders can implement to surmount or reduce the operative barriers.

Thematic analysis led to the formulation of a data sharing domain evaluation tool, which might serve to assess the maturity of a data sharing domain by the presence and strength of certain indicators (Annex 2). This is proposed as a high-level domain analysis tool that may be useful in identifying areas that need to be addressed in policy—though it is not part of the Conceptual Model itself.

In conclusion the outputs of this phase of the ODE Project are considered in the context of the European Commission's Horizon 2020 initiative for a global data infrastructure and a digital research area for Europe. The Conceptual Model of data sharing drivers, barriers and enablers and the data sharing domain evaluation are proposed as tools that could have practical value in elucidating the relationships between the Horizon 2020 goals and the conditions needed to bring them about, and could support those charged with formulation and implementation of policy in this area.

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