

The intention of Open Science and Research initiative in Finland

Summary

This memo describes the background and targets of Open Science and Research Initiative (ATT), established in 2014 by the Finnish Ministry of Education and Culture to incorporate open science and research to the whole research process to improve the visibility and impact of science and research in the innovation system and society at large. To foster the research system in Finland towards better competitiveness and higher quality, transparent, collaborative and inspirational research process should be promoted. The measures promote open publications, open research data, open research methods and tools, as well as increasing skills and knowledge and support services in open science domain. Contributions from all research system actors are welcome to change the research culture towards openness. Finland will engage in international collaboration to promote open science and research.

Introduction

Open access to the results of publicly funded scientific research is subject to many expectations and pressures from both political and scientific funding organisations. The EU and many international research funders have laid out their strategic targets and standpoints in a number of documents. Recently, national policies to promote information availability and open up access to public sector data have also been made in Finland.

Increased and broader access to both the results and raw data of publicly funded research is desired, as it is understood to be beneficial in many ways. Open access to data and research results enable new business operations and further innovation, such as the creation of new services and applications. Openness is also **economical and efficient**: previously collected data and the conclusions drawn from it will be available for use by all interested parties (such as decision-makers, citizens and companies) **globally, quickly and equally**.

Openness also improves **the quality of research**: results and data enable scientific observations to be verified or questioned, so that science will develop and correct itself faster, and overlapping work will be avoided. Transparency raises the quality of research, and results may be verified by others. Openness also **promotes the faster transfer of information** to not only other researchers but also decision-makers, companies and others who use scientific information; and **ensures equal access to research data**. Using an information network to provide open access to research results and data **increases** researchers', research institutions' and research organisations' **visibility** and **improves** their **impact**. (For example, Swan, A. (2010). *The Open Access citation advantage: Studies and*



results to date. Technical Report, School of Electronics & Computer Science, University of Southampton. [http://eprints.ecs.soton.ac.uk/18516/.](http://eprints.ecs.soton.ac.uk/18516/))

In addition to open access, measures to promote availability (such as electronic permit processes or anonymisation) are also required, for example, when complete openness is not possible for ethical reasons or when current tools and infrastructure services do not meet the requirements.

Investigation

Finnish Ministry of Education and Culture set up a working group (WG) within the Finnish Research Data Initiative (TTA) in 2013, to clarify the key factors for promotion of research information availability, open science and citizen science nationally. The WG investigated earlier reports and work on the area, and evaluated the current situation accordingly. As a result, a main objective was formulated, with suggestions for actions. The WG considered the promotion of open access to be the key factor in increasing the availability of information, and its policies and recommendations will therefore focus on promoting open access to publications and research data. The WG was chaired by Annikki Roos from Helsinki University.

The resulting report, the referral, statements (51 in total) and summary (documents are in Finnish) are located at: <http://www.tdata.fi/dokumentit>. The statements endorse common information infrastructure services to support openness and information availability. Some statements argue for national guidelines on openness, some see it as additional level of bureaucracy. The recommendations for open availability of publications are largely accepted. However, open access to research data and methods is seen as a complicated issue, and conceptual clarifications are required.

Openness is about combining information, tools and people to support innovative thinking. As the next step, Ministry of Education and Culture establishes an Open Science and Research Initiative (ATT), to compile a national roadmap to promote open science and research. The main targets include development of the research system and upgrading the openness in everyday working culture within science and research. The actions are focused on six different sections: publications, data, methods, research environments, tools and skills. The process will be guided by Open Science and Research Strategy Group, and supported by an expert group. A comprehensive collaboration forum reviews the results each year.

Main objective

Research data and publications are openly available in an information network via an open interface with the following clarifications:

Clarifications

- A. All stakeholders in the Finnish research system share the scientific publications and research data they produce through an open information network. This principle of openness also governs research methods and the tools required to produce results, such as computer models.
- B. Openness will, however, adhere to ethical principles and respect the judicial operating environment. Open access to research data will always be the goal when it is legally and contractually possible.
- C. The further use of research data and publications is not unnecessarily restricted, and the terms and conditions of their use are clearly stated. Standard, generic, machine-readable licences are complied with. For

- example, CC BY 4.0, which will be receiving a Public Administration Recommendation in Finland (JHS).
- D. The contracts and funding decisions that govern research support open access to publications and data.
 - E. Researchers have the opportunity to engage in open publication irrespective of their scientific field or financial position.
 - F. It is up to research organisations and researchers to ensure the open availability of their publications. The choice between gold and green open access (OA) will be determined on a case-by-case basis and depends on where the results are to be published. The most important criterion in choosing a primary publication channel is to ensure the greatest possible impact for a research project. As OA is known to increase impact, if a non-open publication channel is chosen, parallel availability should also be ensured through open archive channels. Researchers will be supported in their efforts to ensure open access – the processes used to promote availability are simple and their support services user friendly.
 - G. The contents of research publications are openly accessible via an information network immediately, or as soon as possible, after publication. The EU Commission recommends open access no later than six months or twelve months (humanities and social sciences) after publication. (Commission recommendation of 17 July 2012 on access to and preservation of scientific information: http://ec.europa.eu/research/science-society/document_library/pdf_06/recommendation-access-and-preservation-scientific-information_en.pdf.)
 - H. The storage and dissemination of research data and publications will employ the kind of infrastructure that enables long-term preservation and open access to materials.
 - I. Research data and publications are described and documented in sufficient detail, and this information is openly accessible in the network.

Recommendations on implementation

1. Ministries will ensure that research organisations and funders in their own administrative sector have a policy or standpoint that promotes open access to research data.
 - A. Research organisations and funders' policies and mandates will be revised to ensure that they require open access to publications and data.
 - B. Research organisations will have both a data policy and organisation-specific guidelines relating to it.
 - C. Political policies governing the openness of research data will be prepared, taking into account the differences between scientific fields.
2. Stakeholders/organisations in the research system will be supported, encouraged, and given responsibility.
 - A. Ministries will consider open access when setting performance targets and allocating resources.
 - B. When providing funding, Finnish research funders will take the costs of OA publication into consideration.

- C. The Ministry of Education and Culture will support open access to Finnish scientific publications. A funding model to support OA publication will be developed. The total costs incurred by international publication will be determined. Information will be collected on, for example, the OA fees paid to publishers. Options for managing authors' fees/royalties will also be analysed. A working group, which consists of representatives from the National Library (KK) and Federation of Finnish Learned Societies (TSV), will prepare a presentation on the OA funding model for Finnish scientific publications and its pilot project for the Ministry of Education and Culture by the end of April 2014.
 - D. Referencing to data and methods will be encouraged, and those researchers, research teams and organisations whose data or methods are referenced will be rewarded.
 - E. Comprehensive guidelines and advice on open publication will be made available.
 - F. When planning their educational and supplementary training programmes, institutions of higher education will consider competence development and professional skills relating to research data.
 - G. Debate on the new opportunities offered by open access to research data and open research methods will be encouraged in a variety of fields (for example, Digital Humanities).
3. Services that support open access and promote information availability will be developed.
- A. The national information infrastructure's service range must be built on a durable foundation, and must offer services for the storage, retrieval and preservation of data, methods and publications. Compatibility between infrastructures must be ensured when materials or methods cannot be freely opened up for use.
 - B. Services are designed in complete collaboration. Publications, data and methods (and their metadata) will be disseminated via open interfaces that enable, for example, text and data mining.
 - C. Content users and producers will be provided with training and marketing, support and advisory services.
 - D. A national coordination service will be established to promote open publication and parallel storage.
4. Practices and working methods that promote open access will be developed.
- A. When describing and storing publications and data, national and international standards will be followed where possible to enable the combination and further use of data produced by different organisations.
 - B. Researchers will be instructed to consider questions concerning the ownership of data during the early stages of their research projects.
 - C. A data management plan will form a mandatory part of every research plan.
 - D. The terms and conditions for the further use of data (such as CC BY) will be clearly stated.
 - E. The working group recommends either an institutional Green mandate or publication on the Gold OA forum. If a scientific field already has an



established practice of open publication or archiving, this will remain the primary channel. The working group does not recommend hybrid OA publication, as this causes overlapping costs.

5. Amendments to copyright legislation will be promoted.
 - A. The use of research data should be promoted by restricting copyright with the so-called research exception, which should also govern the use of cultural heritage materials. (For example, data mining in full or part from copyrighted materials.) Copyright legislation will contain a restriction clause that enables copyrighted materials to be used for non-commercial research, thereby removing the prevailing legal uncertainty concerning research work. Once legislation in Finland enables research data to be used to the same extent as in those countries in which Finland has significant collaboration connections, Finnish research will gain a wider global audience and productivity will improve.
 - B. Copyright legislation will be amended so that text and data mining will be permitted for research purposes.

6. Both the increase in information availability and its impact on improving the visibility of Finnish research will be monitored.
 - A. The Ministry of Education and Culture will be responsible for the benchmarks used to monitor the availability and openness of research publications, data and methods (such as the OECD's Open Governmental Data) and will also set the necessary benchmarks for collecting indicator information from institutions of higher education.
 - B. During performance target negotiations, research institutes will report to the relevant ministry on how they have promoted the availability of research data and publications during each period.
 - C. When defining their performance targets, organisations will use more comprehensive benchmarks to describe the impact and visibility of researchers (altmetrics).
 - D. The TSV/KK working group (see Section 2) will determine how to measure the openness of Finnish scientific publications and their impact.

7. Finland will engage in international collaboration to promote the availability of information.
 - A. Finland will participate in international efforts to promote open access in all of the aforementioned areas.