

Promoting Open Science in Japan

Opening up a new era for the advancement of science

Executive Summary

Report by the Expert Panel on Open Science, based on Global Perspectives
Cabinet Office, Government of Japan

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It is vital for Japan to participate in international discussions and to demonstrate a proactive approach to the promotion of open science. The Expert Panel on Open Science based on Global Perspectives has discussed various relevant issues of immediate importance for Japan. Based on these discussions, the Panel presented the guiding principles for promotion of open science in Japan.

I. The Importance of Open Science

“Open science” refers to a new approach to promoting innovation through knowledge creation in science and technology. This will be realized by facilitating access to and use of publicly funded research results such as scientific papers and their underlying data by the scientific community, industry and the general public.

The concept of open science is spreading rapidly. At the G8 Summit held in June 2013, G8 Science Ministers issued a joint statement that endorsed the need for increasing access to publicly funded research, including peer-reviewed published research and research data. The statement triggered discussions in various forums worldwide.

Meanwhile, Japan has not formulated its position on open science and has to date held very few officially organized discussions on research data.

Consequently, Japan may be unprepared for international discussions on the future framework of open science. In addition, in the absence of guiding principles, the international visibility of Japan’s science and technology may be weakened, which may lead to the loss of opportunities for Japanese researchers in the global

Research community, and to the decline of Japan’s international competitiveness.

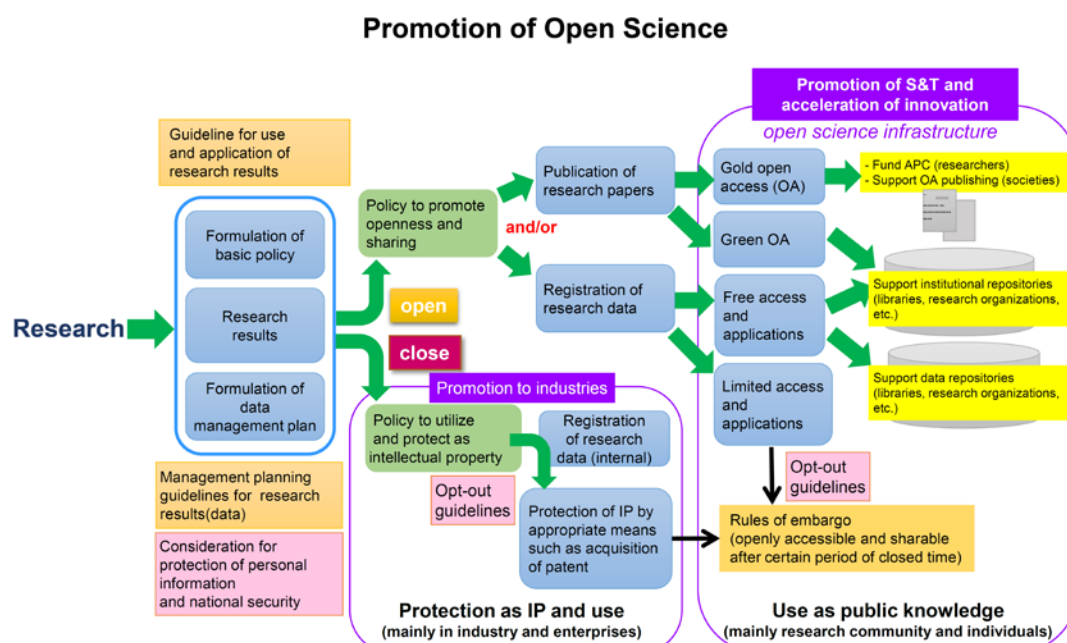
Japan should keep pace with the global advancement of open science in a collaborative yet also strategic manner, so that the value of Japan’s latest research and development activities can lead to business activities at the next stage.

II. The Need to Promote Open Science

Open science may change scientific research. It will not replace traditional research methods, but will add new tools that help to advance science. It will make research results widely available in digital formats to all users including the scientific community, industry and the general public. This will enable additional value to be extracted from science and technology information, which will not only improve our knowledge, but will also reform innovation strategies.

For the scientific community, the acceleration of data-driven activities is expected to lead to new collaborations and to the prevalence of new research methods among researchers within the same research discipline and beyond. Industry and individuals are also expected to gain as they develop new products and services as a result of better use of scientific result data.

Japan is a country that is poor in natural resources. Therefore, to continue its sustainable development, it is vital to keep creating new values by combining science, technology and innovation. Open science provides a framework for this combination, which is why it is necessary to form a shared view on open science among stakeholders.



III. Response to the Global Trend in Open Science

1. Guiding principles of the Japanese Government

The core principle of promoting open science in Japan is to enhance the utility of publicly funded research, including research papers and research data.

Stakeholders such as relevant ministries, funding agencies, universities and research institutions should be responsible for the implementation of open science, and for the formulation of implementation plans and policies. For their reference, common items and points of attention are listed below.

The Cabinet Office and the Council for Science, Technology and Innovation will coordinate the promotion of open science within the government and follow the progress of each stakeholder.

2. Basic View regarding the Promotion of Open Science

(1) Objective and Significance of Promoting Open Science

The results of publicly funded research contain new discoveries and insights that help advancing areas such as health, energy, environment and agriculture. Improving access to these results will make them better known and understood, and will consequently lead to the generation of new discoveries, research concepts, industries, as well as reinforcing competitiveness, promoting global-scale research, and boosting economic growth.

(2) Scope

The outcomes of publicly funded research, such as published results and underlying data, should be accessible, unless they interfere with personal privacy, national security or direct commercial interests.

(3) Definition of "Publicly funded" and Scope of Research Data

"Publicly funded" refers to research funding raised by the government or via an open call.

"Research data" includes meta data, numerical data, text records, images and visual data.

(4) Responsibilities of Institutions Engaging in Research

Each respective institution must formulate regulations on

the management of research results.

In particular, they must prevent damage to or disappearance of research results.

3. Implementing Policies at Relevant Institutions

(1) General Principles

Plans and Policies on open science must contain the following elements:

- a plan for reinforcing innovation and competitiveness
- a transparent process for stakeholders
- a method for locating and accessing digital data resulting from publicly funded research
- an approach for optimizing search, archival and dissemination of information
- a plan for notifying publicly funded researchers of their obligations (new guidelines, revision of relevant regulations, etc.)
- a strategy for evaluating and enforcing compliance with the plan
- procurement of resources within the existing agency budget to implement the plan
- the formulation of roadmaps for implementing the plans
- a plan for developing data infrastructure such as repositories

(2) Access to Scientific Papers

Open access should be promoted in accordance with the Budapest Open Access Initiative of 2002.

Scientific results arising from publicly funded research should be stored for long-term preservation and accessible by any users for search, retrieval and analysis.

(3) Access to Digitized Research Data

Different scientific disciplines have varying methods of preserving and sharing research data. This should be considered when providing public access to digitized outcomes of publicly funded research.

(4) Implementation of Open Science Plans

Each respective institution should publicize its open science plans by posting them on its website. This activity will be monitored by the Cabinet Office and the Council for Science, Technology and Innovation.

Correlation diagram of policy making and implementation

