Promoting Open Science in Japan

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New concept “Open Science”

- **Underway to became a concept**

  The need for increasing access to publicly funded research, including peer-reviewed published research and research data.

- **Discussions in various forums worldwide**

  ① Statement and reports form the G8 Science Ministers Meeting and OECD meetings.
  ② Funding Agencies increasing access to the results of publicly funded Scientific Research
  ③ International Organizations （WDS, RDA etc.） discussing on Open Access and Open Data
  ④ Includes the openness for the Citizen Science movement
  ⑤ A new approach to promote innovation

World Discussions on Open Science

G8 Science Ministers Statement London UK, 12 June 2013

G8 Science Ministers approved a statement which proposes to the G8 for consideration new areas for collaboration and agreement on global challenges, global research infrastructure, **open scientific research data**, and **increasing access to the peer-reviewed, published results of scientific research**.

ICSU WDS Goals

- Enable universal and equitable access to quality-assured scientific data, data services, products and information
- Ensure long term data stewardship
- Foster compliance to agreed-upon data standards and conventions
- Provide mechanisms to facilitate and improve access to data and data product

RDA Outcomes

- New data standards or harmonization of existing standards.
- Greater data sharing, exchange, interoperability, usability and re-usability.
- Greater discoverability of research data sets.
- Better management, stewardship, and preservation of research data.

GRC Action Plan towards Open Access to Publications

endorsed during the 2nd Annual Global Meeting, 27 – 29 May 2013, Berlin / Germany

What do we mean by “Open Science”

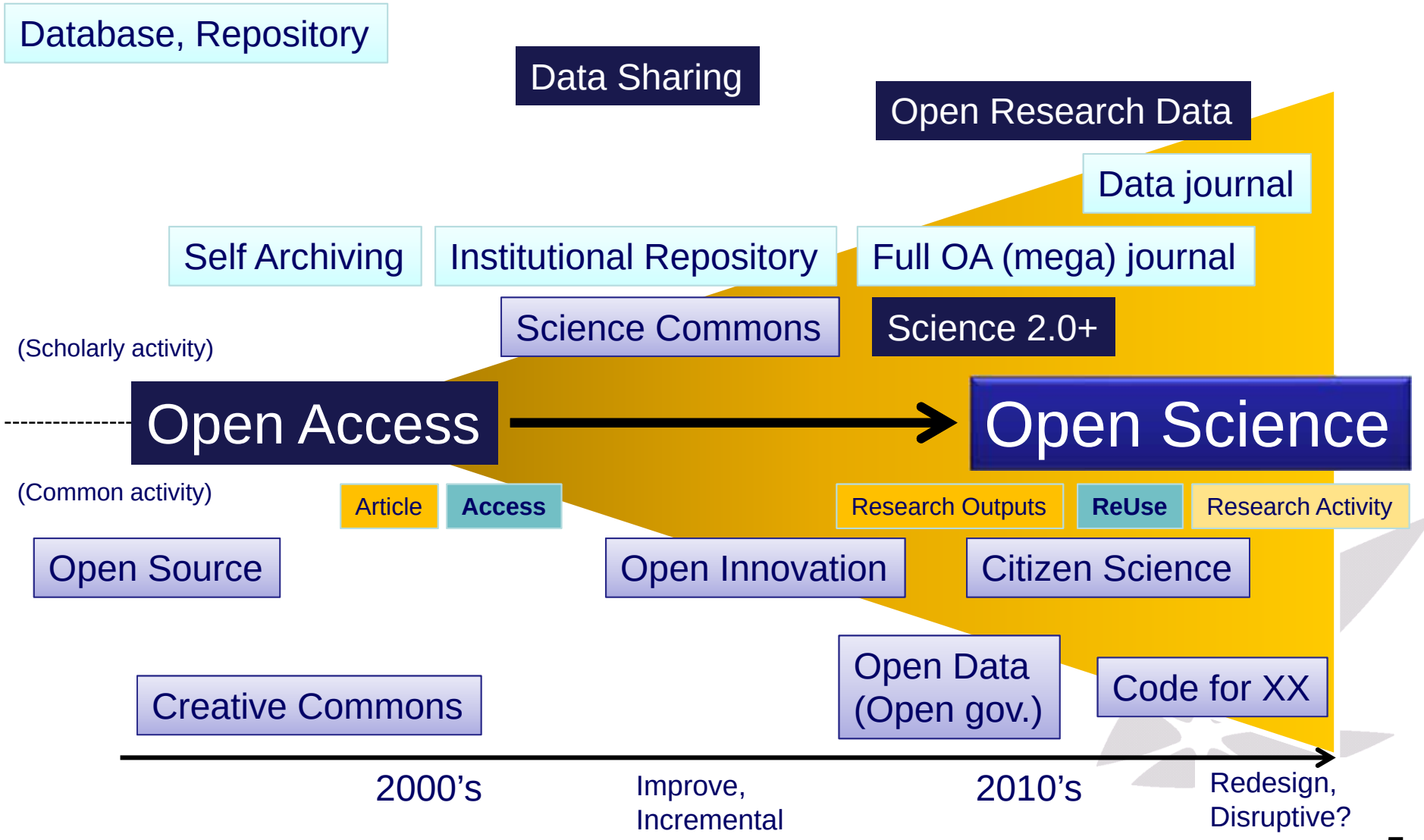
- **Common understanding (tentative!)**
  - “Open” in the way to produce knowledge
    - e.g. Citizen science, Networked science
  - “Open” for anyone to access to scientific publications
  - “Open” for anyone to access to and use scientific data

- **Japan’s Perspective**

- A new approach to promote **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.

Open access to Open Science



Current Situation in Japan

- ***In place:***
  Japan has not formulated its position on open science and has held very few officially organized discussions on research data.

- ***But still catching-up global trends, if not:***
  - Unprepared for international discussions on the future framework of open science.
  - In the absence of guiding principles,
  - The international visibility of Japan's science and technology may be weakened
  - Loss of opportunities for Japanese researchers in the global research community

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To keep pace and leading with the global advancement of Open Science

Actions by Cabinet office

- **An Expert Panel on Open Science (12/2014 – 3/2015)**
  - Mandate
    - To identifying guiding principles to promote Open Science based on the whole-of-government approach
  - Members
    - Stakeholders from universities, R&D institutions etc.
    - Observers from relevant ministries and funding agencies
  - Hearings
    - From Stakeholders Including research institutions & publishers
  - Schedule
    - A report to be finalized by March
    - To be integrated in the 5th S&T Basic Plan (FY2016-2020)

Basic view regarding the promotion of Open Science

Objective and Significance: Innovation

Consequently leading to; new discoveries, research concepts, industries, as well as reinforcing competitiveness, promoting global-scale research, and boosting economic growth.

Scope: Publicly-funded research

- Publications & underlying data ➡ Open
- Other digitalized research data ➡ Open wherever possible

Definition of "Publicly funded" and Scope of Research Data

"*Publicly funded*"

- research funding raised by the government or via an open call.

"*Research data*"

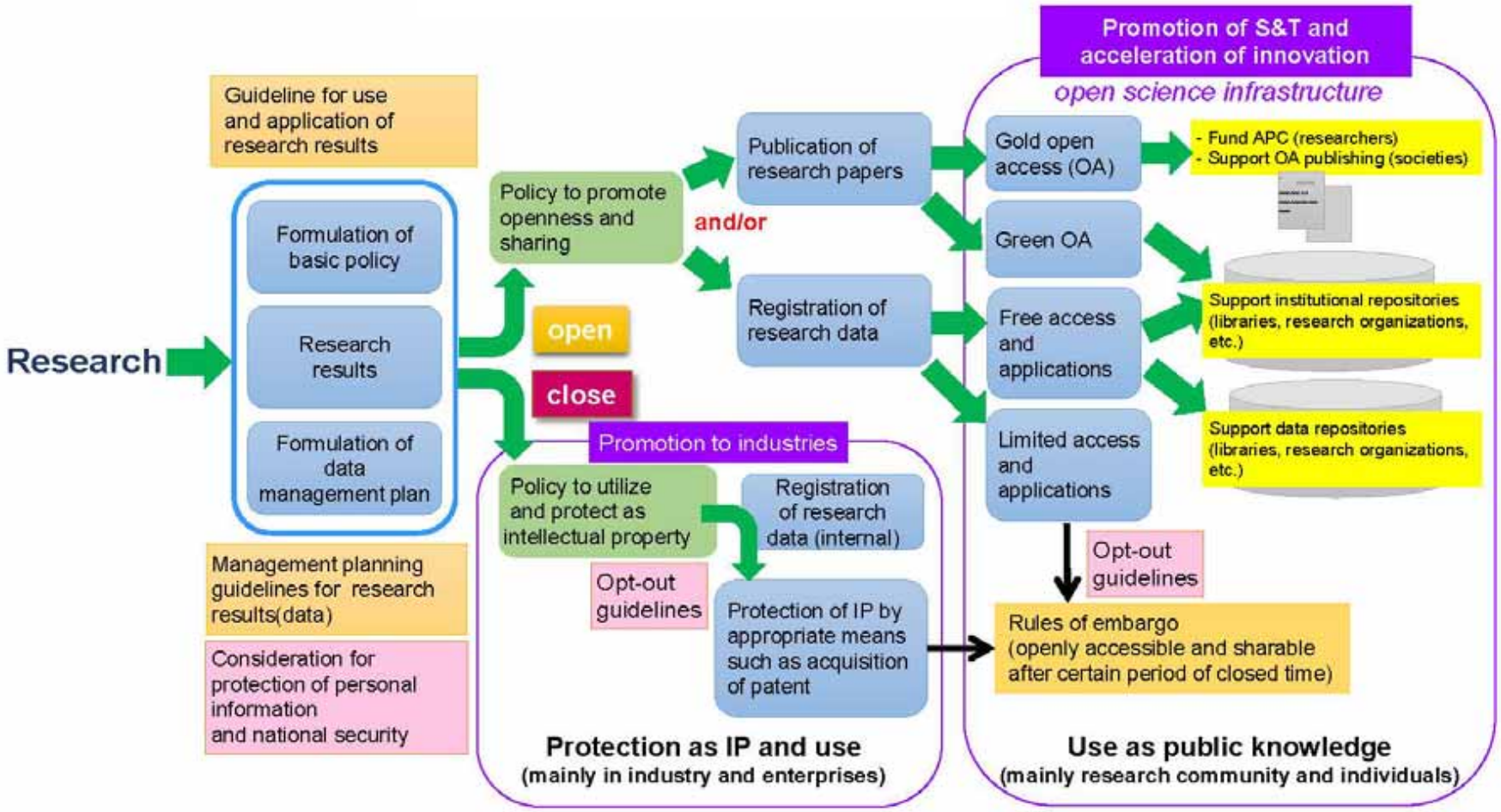
- includes meta data, numerical data, text records, images and visual data.

※unless they interfere with personal privacy, national security or direct commercial interests.

Responsibilities of Institutions Engaging in Research

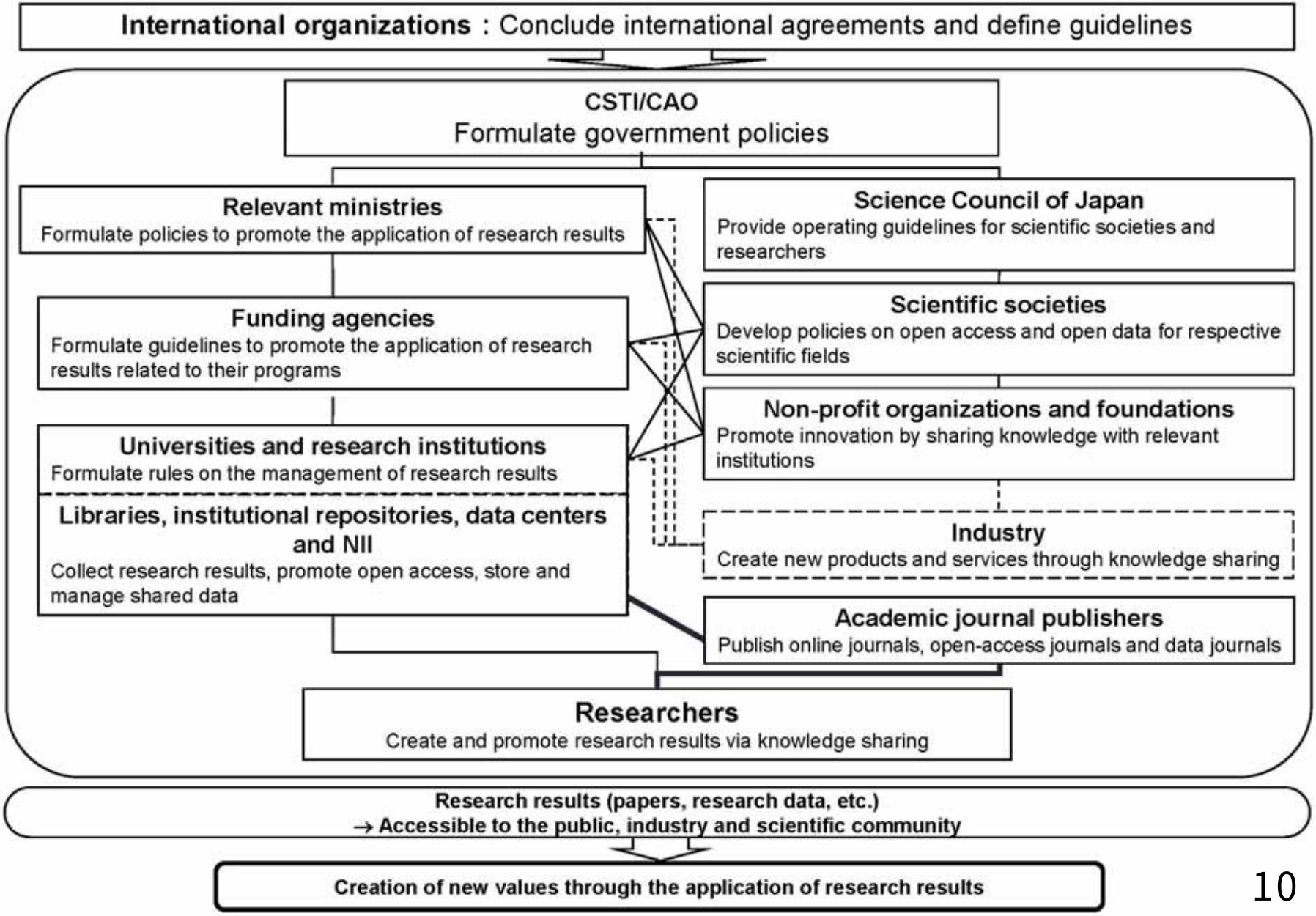
Must formulate regulations on the management of research results.
Esp. for prevention of damage to or disappearance of research results.

Policy map for Promotion of Open Science



Reference:
Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020 Version 1.0 11 December 2013 p.4
http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

Correlation diagram of policy making and implementation



Guiding Principles of the Japanese Government

CSTI／CAO

To present whole-of-government principles on Open Science

Next Step

Relevant Ministries/Funding Agencies

To formulate a specific implementation plan for Open Science

⇒ The Ministry of Education, Culture, Sports, Science and Technology (MEXT) is discussing how to formulate policies by the Scientific Information Committee.

The Science Council of Japan (SCJ) has started to discuss how to promote open science towards scientific communities and researchers.

CSTI／CAO

Follow-up on the implementation status and progress of relevant ministries and institutions

CSTI: Council for Science, Technology and Innovation
CAO: Cabinet Office

Implementation plans

- **Implementing policies at relevant institutions**

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

  - a plan for reinforcing innovation and competitiveness
  - a method for locating and accessing digital data resulting from publicly funded research
  - 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

- **Access to Scientific Papers**

  Inline with the Budapest Open Access Initiative of 2002

- **Access to Digitized Research Data**

  Specificity of disciplines
  Accessible, searchable, readable, re-usable

- **Implementation and follow-up**

Need to have a common understanding of…

- Definition of “Open” (“free” and “gratis”)
- Copyright policy
- Definition of large-scale dataset
- Establishment of coexistence with academic journal community
- Incentives for scientific community
- Consideration for the characteristics of research disciplines
- Skills for Open Science
- Technological infrastructure and human resources
- Appropriate and sustainable funding model

Future Task

- **To clarify**
  - ***Scope***
    - Research articles and data to be open (or not to be open)
  - ***Mechanism for data storage***
    - Including data repositories
  - ***Selection of data for storage and storage periods***
  - ***Mechanism for quality assurance of the research data***
    - e.g. “Peer review” system
  - ***Incentives for researchers***
    - e.g. “data-citation” system
  - ***HR to support data-driven research***
    - In particular data-scientists

Next Stage

- Progress of world discussion on Open Science
- Promotion of the Open Science in each organization

Lessons

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Changing mind set

Good practice

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Shaping up STI ecosystem

The 5th S&T Basic Plan

(FY2016-2020)

The Comprehensive STI strategy 2015

(June 19, 2015 The Cabinet approved)

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An follow up expert panel (07/2015 ～)

Follow up

- **An follow up expert panel (07/2015 —)**

  —Mandate

  - About the way of a future examination problem and Future follow-ups

  —Members

  - Stakeholders from universities, R&D institutions, Academic community and attorney etc.
  - Observers from relevant ministries and funding agencies

  —The following contents

  - To formulate a specific implementation plan development situation in ministries and Funding Agencies, hearing from the organization concerned, overseas pulse-taking

Outreach Activities

- Expert Panel on Open Science (Science Council of Japan) , Apr. 2015
- Science & Technology Diplomacy Circle in Japan, Jul. 2015
- 3rd EU-Japan Joint Committee on Science and Technology Cooperation, May.2015
- EU Conference A NEW START FOR EUROPE OPENING UP TO AN ERA OF INNOVATION, Jun.2015
- 15TH JAPAN-AUSTRALIA JOINT SCIENCE AND TECHNOLOGY COMMITTEE MEETING, Aug.2015
- The 13th Japan-U.S. Joint High-Level Committee on Science and Technology Cooperation, Oct.2015
- Meeting of the OECD Committee for Scientific and Technological Policy at Ministerial Level, Oct.2015

Thank you very much for your attention