National Data Strategy

2021-06-18 NATIONAL STRATEGY OFFICE OF IT, CABINET SECRETARIAT



Background

Data is a key source of

- Knowledge/wisdom, value and growth
- Sustainability, increasingly competitive market, and innovation

Global <u>Leadership Competition</u>

- Paradigm shift geographical/technological changes in response to COVID-19
- Risks in digital society: privacy and security

Toward Digital Society

- International collaboration, Global by Design
- Promoting the DFFT (<u>Data Free Flow with Trust</u>) initiative

The story behind

- 2020-12-21 Data strategy 1st release
 - Proposed a basic structure of the strategy.
 - "Why and what is data strategy?"

Vision

Principle

Architecture

Pilers & Action items

- 2020-05-26 National Data Strategy (Data strategy 2nd release)
 - Proposed the goals and the processes.
 - "How can we realize/implement the data strategy?"

Concept of the national data strategy

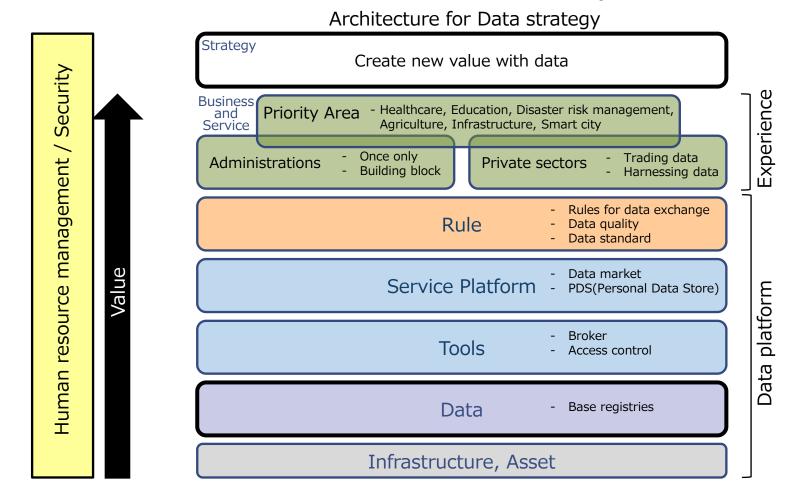
Cultural change

We will realize a citizen-centric society that balances efficiency and trust. We aim to realize a sustainable human society. It is the human-centric society that creates new value by achieving both economic development and solving social issues. Philosophy It is achieved through a digital twin by using data. It is consistent with the vision of Society 5.0 that is the future vision of Japan. Our society values trust and safety. It is essential to realize high efficiency and hospitality services at the same time. **Principle of Data strategy** Control your data Use Anytime, Vision Connect Safe Create together vourself anywhere controllability Interoperability Availability Security Co-creation Privacy Efficiency Quickness Trust Creation of new value Cross-boarder Quality Principle of ministry's action **Evidence Based administration** Data ecosystem Maximize the value of data Principle • Identify the priority data Data engineering for data Rule management for data ecosystems access • EBPM Data standards Chanel management for the Business transformation various data accesses • Data quality management Data management and open Open data data List of data asset in the

administrations

Architecture

- Data strategy is base of all social activities and industries.
 - The architecture is based on the Society 5.0 reference architecture.



OVERVIEW OF THE NATIONAL DATA STRATEGY

Vision

Humancentric society that creates new values through a system where cyberspace and real space are highly integrated (digital twin)

Data strategy architecture

Security

management

resource

Human

Strategy and Policy

Organization

(Public/Private)

Rule

(Data governance / Connection)

Service Platform / tools

Data

Implementation

Infrastructure

1st release

Philosophy Vision Principals

Social implementation and operational reform

Review of business processes from the digital twin point of view

Trust framework

Summary of the factors of trust (proof of declaration of intention, publisher certification, existence certification)

Develop platforms

Arrange common rules across sectors

Identify items to be studied on the platforms of individual areas (place of public-private study, rules and tools)

Base Registries
Open data
Data management

Long term Issues

Improve the environment for data utilization
Ways of utilization of privately owned data
Human resources / international cooperation / infrastructure

National Data Strategy

- Principle of the make use of data
- Principle of the administrative actions
- Roles and functions of public administration
- Promote with a digital government and technology strategy.
- Trust base (establish an authorization scheme)
- •Sort the points toward construction of the trust base
- Give shape to the common rules necessary for data coordination and develop tools for this purpose
- · Organize norms for facilitation of data flow and elimination of hindrances
- Construct platforms for the priority areas (disaster prevention, health / health care / care, education, etc.)
- Present the concept of a data market
- Designate base registries
- Extract issues toward development of base registries and study directions toward their solution.
- ·Strengthen data management and promote open data

Digitai
infrastructure
Human resources
and organization
Security

- Integrated development of the communication infrastructure (Beyond 5G: results to be presented in Expo 2025 Osaka, Kansai,) computation resources (use of Fugaku and other computer resources by the private sector, semiconductor digital industry strategy), data handling rules, etc.
- •Personalities needed for data strategy and assignment of Chief Data Officer (CDO)
- Promote Security by Design, construct an environment for safe and secure use of cyberspace.

International deployment

- Collaborate with countries espousing the same concepts and promote DFFT on various platforms (trade, privacy, security, trust base, data utilization and the next-generation infrastructure)
- Toward 2023 G7 in Japan

The role of government in this strategy

Role

- Government as a platform
 - The Government is the largest data holder in Japan, and its systems and actions will have a significant impact on Japan's society, economy and industries.
 - The Government plays a role as "a platform of platforms" in the digital society and contributes to society's sophistication.

Mission

- The Government will provide strategy, architecture, ID framework, base registries, essential data and the platform.
- The Government will reform the existing rules and establish new ones .

Structure of this strategy

Concept part :1 Core part :2,3,4,5,6

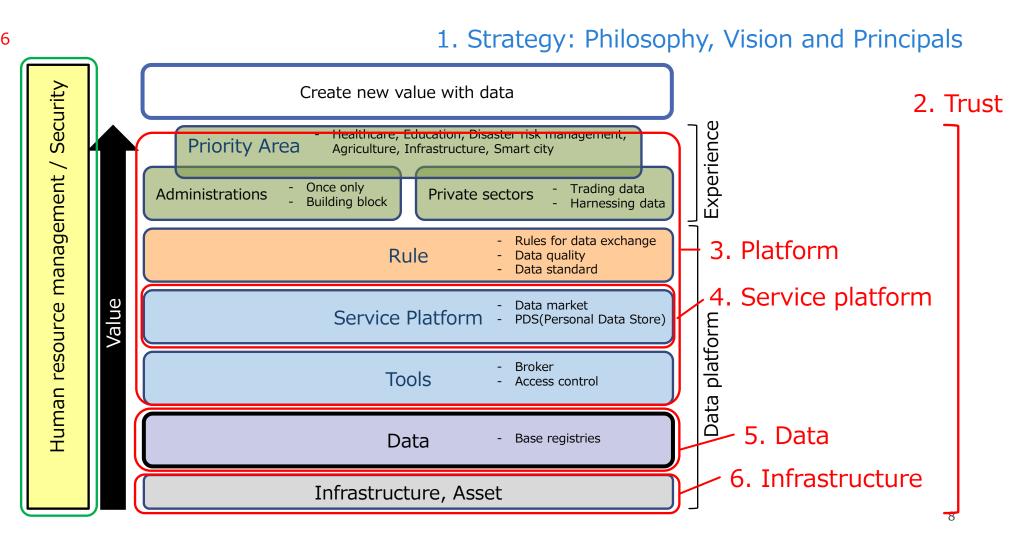
Environment part :7,8

International part ;9

7. HR & organization

8. Security

9. International cooperation



Action Plans

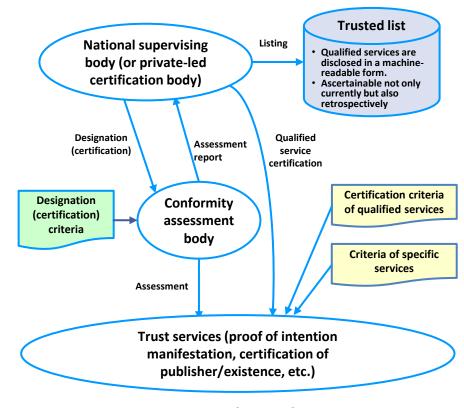
Trust

- Trust is an essential matter in a data-driven society. Trust includes social issues and technical issues.
- The Japanese government proposed a "DFFT" initiative in 2019. (DFFT: Data Free Flow with Trust)

- Open government, data and various activities foster trust.
 - ID systems, evidence-based policymaking, diverse, quantitative and high-quality data

Trust

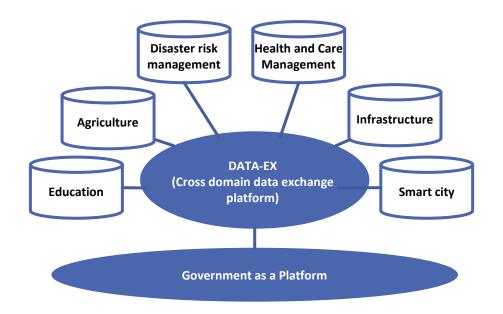
- Basic Concept
 - Comprehensive trust framework toward digital society
 - Trust service's general principles and common requirements
 - International mutual recognition
- Key Actions
 - 1. Establishment of authentication schemes
 - 2. Establishment of a trust framework
 - 3. Effects of certification
 - 4. Define the certification criteria
 - 5. Disclosure of qualified services as a trusted list
 - 6. International mutual recognition framework



Concept of Trust framework

Concept of the data platform

- Data Platform consists of
 - Functions, services, rules of data flow and connector
- DATA-EX: Cross-domain data exchange platform
- Government: Largest data holder, biggest player and platformer



Development of the common procedure

- 1. Identify the value, data and stakeholders
- 2. Architecture design
- 3. Ideal way of Business Process Re-engineering
- 4. Identify the base registries and priority data
- 5. Develop tools for interoperability: API, catalogue
- 6. Rule making
- 7. Define the data store and exchange platform, data marketplace, etc.

Rules for the platforms

 Develop rules to ensure that the platform is safe for everyone to use and can sustainably provide services.

Rules for data management

- Rules for trust management of data and the stakeholders
- Contraction rules for data trading
- Management rule for privacy information
- Standards for data exchange
- Data quality management framework

Rules to remove barriers to data management

- Set the stakeholders' mindset for datadriven society.
- Establish a governance mechanism for data.
- Prevent unintended data flow/use.
- Guarantee fair data transactions and use.
- Open the platform structure so that anyone can participate

Data platform priority areas

Example of priority areas



Healthcare / Care management

Relevant organizations, such as hospitals and care homes, work together to share information. Information held on individuals will also be used to ensure that citizens receive the most appropriate services.



Agriculture

Analyze existing agricultural systems and connect them based on data standards.

Create a smart food chain that includes not only agriculture but also supply chain.



Education

Promote the data standards and enable schools and private educational institutions to use the information they have.

We will make a new learning style for the digital age.



Infrastructure

The National Land and Transport Platform is at the core of the collaboration of related systems.

We will promote the platform for using in new businesses in the private sector.



Disaster Risk Management

Standardize data and rules and connect disaster response systems. Create an environment in which data can be effectively analyzed and utilized in the disaster situation.



Smart city

A new urban model is created by connecting the various types of information available in the city. We will develop rules for the use and sharing of data for this purpose.

Shape the common rules for the data platform

- Common rules for data management guidance
 - Data provider and authentication
 - Contract and template
 - Personal data management
 - Data standards and quality, etc.
- Element of promoting data flow and removing barriers in the private sector
 - Stakeholders' mindset as data driven society
 - Governance mechanism
 - Fair data exchange/trading
 - Avoid lock-in: negative effect on innovation, etc.

Service platform (Data market / PDS / Information Bank)

Data market

- Today, the data market trades data itself. In the future, the market will trade data access rights. A fair and neutral data intermediary platform is needed for the market.
 - We will decide rules and procedures for the market and evaluate the needs.
 - We will establish a data market.
- PDS (Personal Data Store) / Information bank
 - In a data-driven society, we will need a data-sharing mechanism and a personal data store. Some data stores will provide a new service by using anonymous data. We should define the rules and criteria for new services.
 - Primarily, we should ensure data safety in the PDS / information bank

Data (base registries / priority data and data governance)

- We will promote the base registries initiative to ensure that core data held by government agencies are used as a basis for society.
- The base registries will make it easier to carry out social activities and promote once-only administrative services.
- We selected 19 data in 6 fields. We will make the mechanism by 2025 and complete the dataset by 2030.
 - Other important data, "priority data," will be developed. We will also deploy this know-how to ensure efficient management and use of data across the government.

Standard data model |

- Quality management Livers
 standard
- Data management standard

Data in the government and municipalities

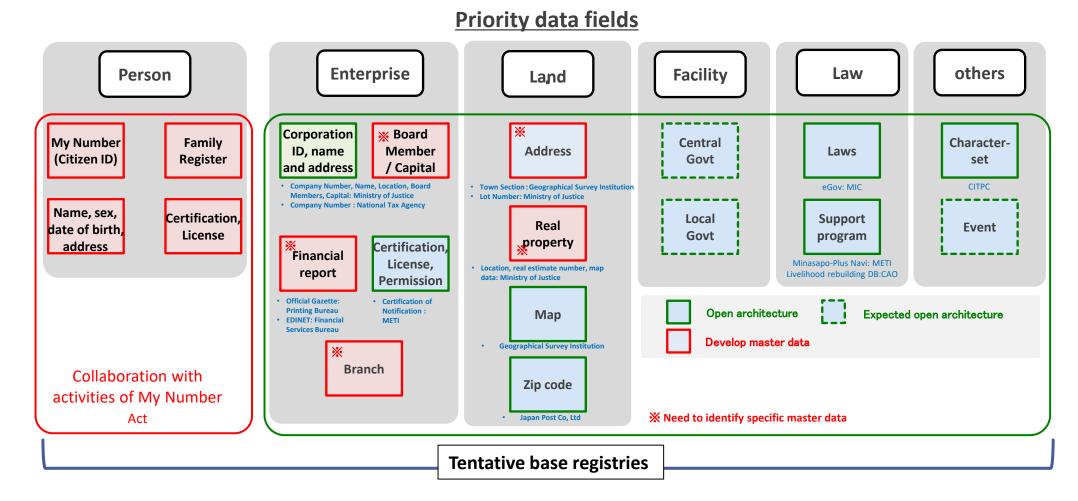
Priority data

Base registries

Person, Enterprise, Land, Public Facilities, Law, Event Infrastructure Weather Mobility ... Application Services

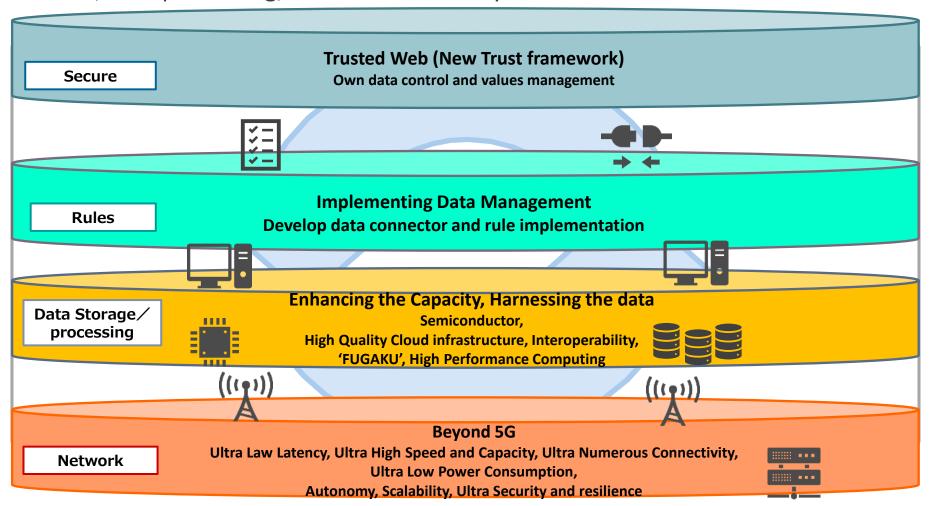
Data: base registries

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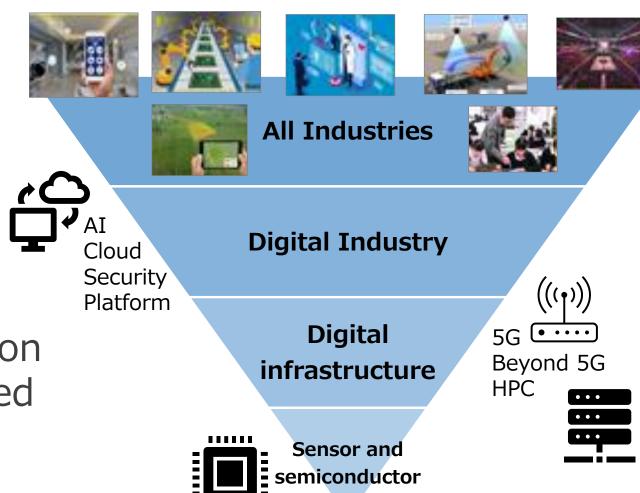


Digital Infrastructure

- The structure of the elements
 - Network, data processing, rules and secure layers



Infrastructure/assets



 We need not only communication infrastructure but also integrated development of factors from computation resources to implementation of data handling rules.

Human resources and organization

Human resources

- We will develop a data-related workforce through schooling, higher education and professional training. We will make the framework for human resource management.
- Furthermore, to promote digital transformation, we will develop the digital human resoudigital transformation of local companies and industries.
- All staff should have fundamental data skills in the government, and there will be professionals to analyze and design data.

Organization

- We will assign a CDO (Chief Data Officer) at the Digital Agency to take responsibility for the data stratrces necessary to accelerate the egy from changing public administration through data.
- And we will assign data officers at ministries to create new value in collaboration with the Digital Agency CDO and the data officers.

International collaboration

- Shape the concept of DFFT (Data Free Flow with Trust)
 - Trade, Privacy, Security, Trust, Data harnessing and Infrastructure
- Collaboration with like minded countries: sharing the common value
- Concrete actions before the G7 meeting in 2023

- Collaboration with like minded countries by sharing the concept of DFFT
- Working with the above countries to share the concept with them



- Government surveillance
- Conflict with freedom and democracy

Further Actions

Trade

- Pursue high-quality discipline in WTO
- Pursue high-level data discipline to the bilateral and among like-minded countries by sharing the way of thinking based on the data discipline in the JAP-US and JAP-UK frameworks
- Discuss with EU rules on free flow of data under EPA
- Ensure steady operation of RCEP and TPP agreement

Privacy

- Share a higher strategic target of opposing the government surveillance system
- JAP- US-EU framework: globally acceptable company certification system
- Cooperation with like-minded countries for discussions toward development of principles on government access (Note 1) at OECD (Note 2)

Note 1: public use of personal data held by the private sector

Note 2: cooperation with like minded courtiers to discuss development of principles in line with data flow in general

Security

- Identify specific areas of international collaboration and proper organizations
- Formulate leading projects to collaborate with like-minded countries

Trust

- Develop a national trust base framework
- Collaboration with US and EU by consideration of their trust systems

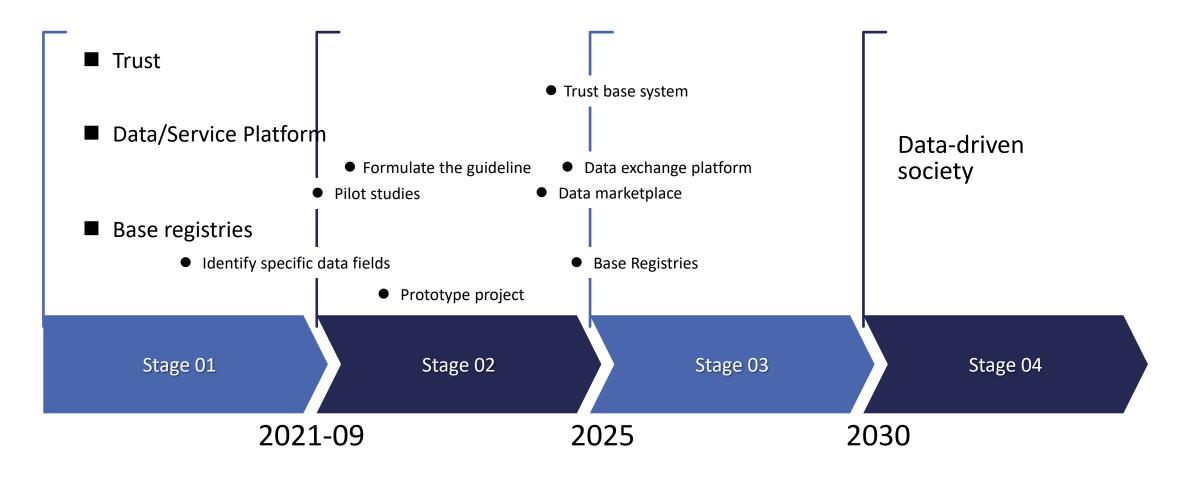
Data harnessing

- Research the global trend of international standards in the field of smart cities
 - Research the trends of data standards and quality, and work with other countries

Infrastructure

Research national and global policy trends (including semiconductor and quantum technology strategies)

Roadmap



A sustainable society through trust and quality