Standardization activities on "Society 5.0" in Japan

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Society 5.0 Standardization Promotion Committee
(supported by METI)

So what is Society 5.0?

Society 5.0 represents the 5th form of society in our human history, chronologically following hunting, farming, industry, and information. The Fourth Industrial Revolution is creating new values and services one after another, bringing a richer life to all.

Our daily life will change. Our working style will change. Let's sneak a peek at Society 5.0.

So what is Society 5.0?

Every day, in every way, the future is just a half-step away.

Could this be your future, too?
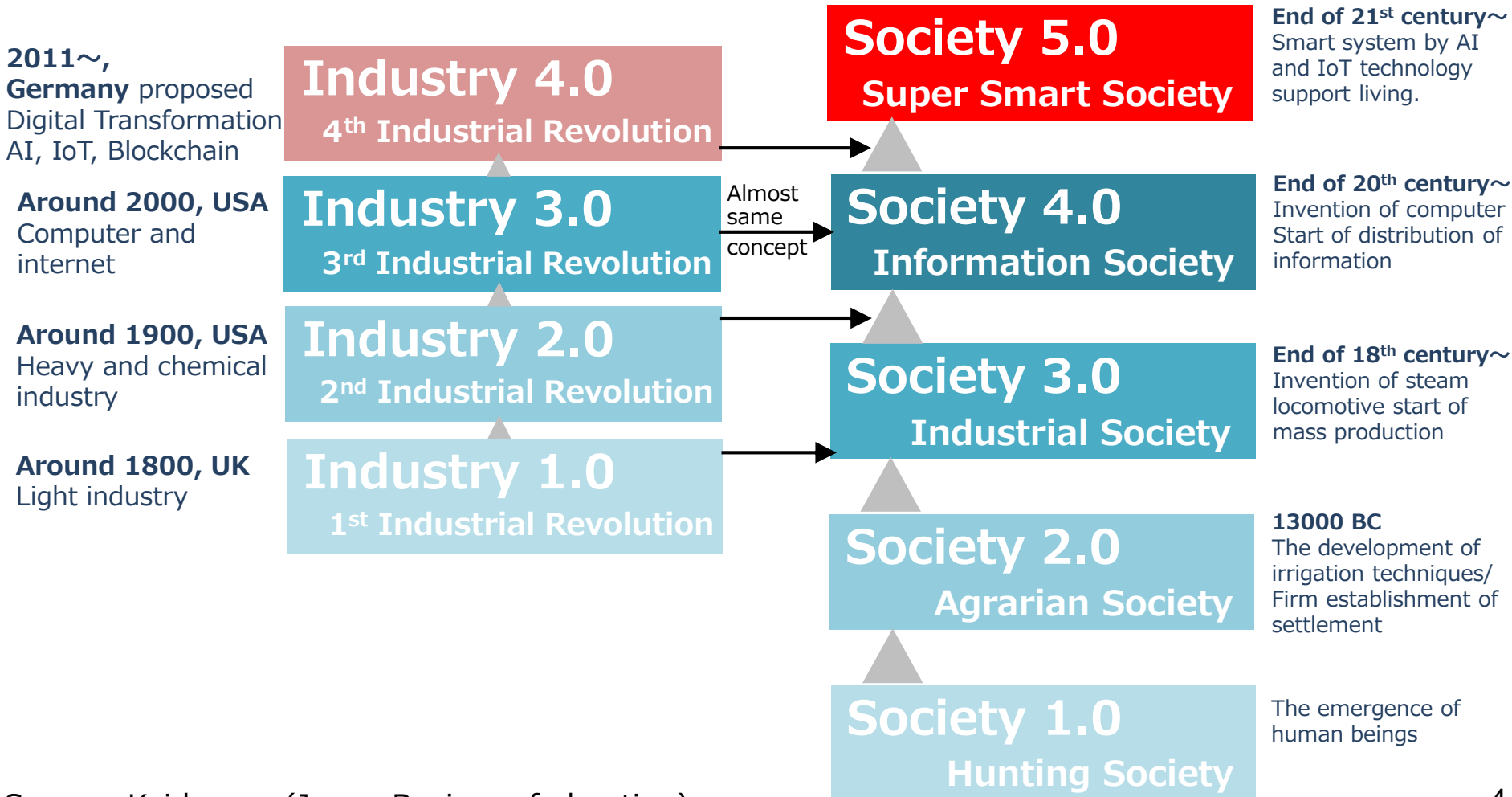
Enjoy each scene of our special WEB movie.

https://www.gov-online.go.jp/cam/s5/eng/index.html

Contents

Industry 4.0 and Society 5.0

Scope	Industry	An entire society
Category	Means	Results

**2011~,
Germany** proposed
Digital Transformation
AI, IoT, Blockchain

Industry 4.0
4th Industrial Revolution

Society 5.0
Super Smart Society

End of 21st century~
Smart system by AI
and IoT technology
support living.

Around 2000, USA
Computer and
internet

Industry 3.0
3rd Industrial Revolution

Almost
same
concept

Society 4.0
Information Society

End of 20th century~
Invention of computer
Start of distribution of
information

Around 1900, USA
Heavy and chemical
industry

Industry 2.0
2nd Industrial Revolution

Society 3.0
Industrial Society

End of 18th century~
Invention of steam
locomotive start of
mass production

Around 1800, UK
Light industry

Industry 1.0
1st Industrial Revolution

Society 2.0
Agrarian Society

13000 BC
The development of
irrigation techniques/
Firm establishment of
settlement

Society 1.0
Hunting Society

The emergence of
human beings

Source: Keidanren (Japan Business federation)

4

Society 5.0

"Society 5.0" is the concept that Japan proposed.
   It was initially proposed by Keidanren (Japan Business Federation) and incorporated in the 5th Science and Technology Basic Plan in Japan as a concept for the future society to which we should aspire in **January 2016**.

Society 5.0
   Society or the relevant approach, through advanced data utilization to connect diversified industries and cultures, to promote multi-sectoral innovations and to establish a symbiotic society of human and natural ecosystems which efficiency facilitates the achievement of Sustainable Development Goals (SDGs) adopted by the United Nations (UN).

The purpose of Society 5.0

Economic advancement	Resolution of social problems
● The demand for energy is increasing ● The demand for foodstuffs is increasing ● Lifespan is becoming longer, and the aging society is advancing ● International competition is becoming increasingly severe ● Concentration of wealth and regional inequality are growing	●Reduction of GHG emissions ●Increased production and reduced loss of foodstuffs ●Mitigation of costs associated with the aging society ●Promotion of sustainable industrialization ●redistribution of wealth, and correction of regional inequality

Incorporating new technologies such as IoT, robotics, AI, and big data in all industries and social activities, provide goods and services that granularly address manifold latent needs without disparity

to **balance** economic advancement **with** the resolution of social problems

Society 5.0 and SDGs

Society 5.0 efficiency facilitates the achievement of SDGs.

Society 5.0 and SDGs

Society 4.0
Information society

Individual optimization through application of ICT
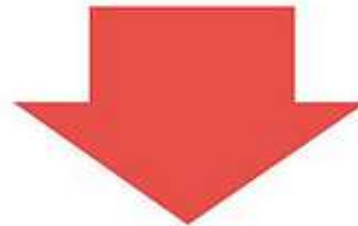
Efficient use of natural resources

World bound by various constraints (temporal, spatial, etc.)

Seeking solutions to individual problems Making individual industries more efficient

Society 5.0
Super-smart society

Optimizing society as a whole through integration of cyberspace and physical space

Use of new resources (data)

World released from various constraints

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD

Source: Keidanren (Japan Business federation)

8

Society 5.0 as an Ecosystem
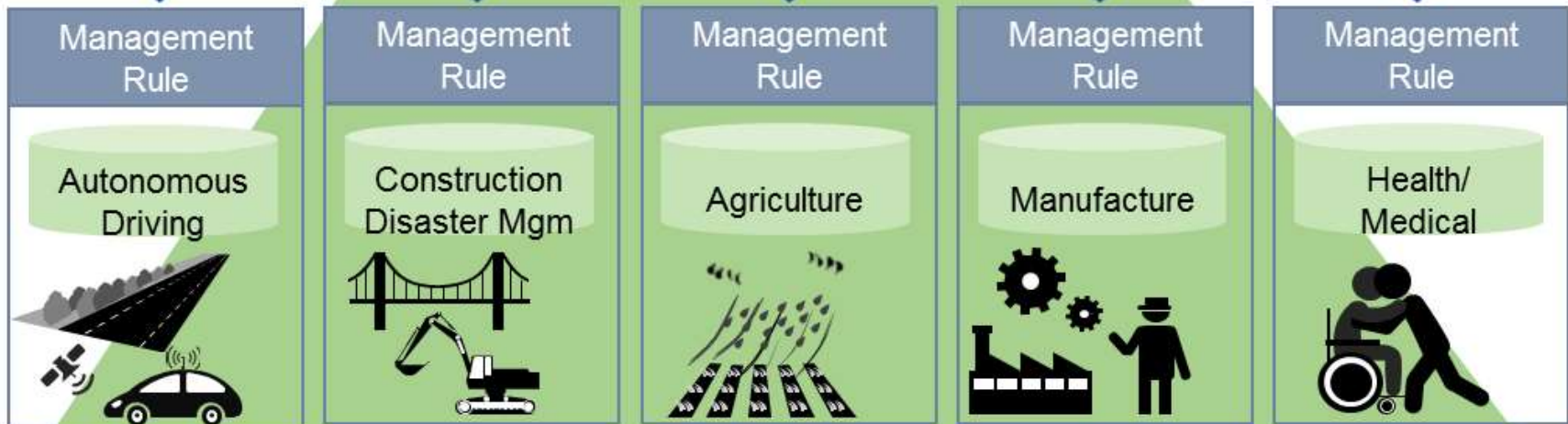
Standardization of Society 5.0

Society 5.0

Feature

We incorporate advanced technology in all industries and social life. Everyone (inclusive) can live a comfortable, irrepressible and high-quality life by creation of new value from innovation. Realization of human-centered society "Society 5.0" leads to achievement of Sustainable Development Goals (SDGs).

Main issue

Advanced data utilization is typically represented by the use of such technologies as Internet of things (IoT), Big Data and AI.

Standards

Title

Principles and general requirements for integrating responsible data utilization contributing sustainable societies - Society 5.0

Principles

- Inclusivity
- Sustainability
- Human-centered
- Innovation
- Governance

History of Society 5.0 standardization in Japan

Sep. 2017	• Discussion started among Private-sector in Japan.
Feb. 2018	• Private-sector led informal group was formed and approached to CSTI*1 of COJ*2.
Mar. 2018	• Society 5.0 standardization Task Force was held by COJ and the standardization was discussed. The TF concluded that formal organization on standardization should be established.
Oct. 2018	• Establishment of Society 5.0 standardization promotion committee supported by METI*3
Mar. 2019	• Approval of JIS*4 preliminary draft in the committee

*1 Council for Science, Technology and Innovation
*2 Cabinet Office Japan
*3 Ministry of Economy, Trade and Industry
*4 Japanese Industrial Standards

11

Society 5.0 standardization promotion committee

Medium-term objective

Consideration of definition, principle, reference model and standardization of each application area those are the basis of "Society 5.0".

International proposal to ISO etc. is assumed in promotion of standardization

Immediate action

- Drawing out of JIS preliminary draft on "Society 5.0"
    * Premise of international standard proposal
- Drafting guideline of international activities in future on international standardization including international proposal of JIS preliminary draft
- Research on "Society 5.0" in and out of Japan

Society 5.0 standardization promotion committee

Chair: Dr. Masahide OKAMOTO, Hitachi Ltd.
Secretariat: Nomura Research Institute (NRI)
Support: Ministry of Economy, Trade and Industry (METI)
Member

Private sector
Keidanren[1]
Tokyo Electric Power
Japan East Railway
DTA[2]
Mitsubishi Heavy Industries
NEC
Fujitsu
Hitachi
JEMA[3]
JEITA[4]

Academia
Keio University
University of Tokyo
Tama University

Government agency
NEDO[5]
JSA[6]
METI

*1 Japan Business Federation
*2 Data Trading Alliance
*3 Japan Electrical Manufacturers' Association
*4 Japan Electronics and Information Technology Industries Association
*5 New Energy and Industrial Technology Development Organization
*6 Japanese Standards Association

Summary of **JIS** preliminary draft on Society 5.0

Title

Principles and general requirements for integrating responsible data utilization contributing sustainable societies - Society 5.0

Introduction

1. Scope

This document provides and specifies requirements for the responsible use of data and related technologies to contribute to achieving societies.

2. Normative reference

3. Terms and Definitions

Society 5.0, SDGs, sustainability, sustainable development, sustainable society, interoperability, AI, IoT, Big data, cyber-physical-system (CPS), responsible data utilization, cross-sectoral

Summary of JIS preliminary draft on Society 5.0

4. Overview
  - Review of relevant initiatives, regulations and standards
  - Possible users and their benefits

5. Principles
  General
  - Inclusivity
  - Sustainability
  - Human-centered
  - Innovation
  - Governance

6. General requirements
  General
  - Requirements for organizations
  - Requirements for products and services

Annex A (informative) collaboration and Complementarity Principle
Annex B (informative) Existing standards

Standardization of Society 5.0 – What's next?

Summary

1) Realization of Society 5.0 leads to achievement of Sustainable Development Goals (SDGs)

2) "Responsible data utilization" was proposed as main issue or original matter of Society 5.0 to be standardized.

3) Inclusivity, Sustainability, Human-centered, Innovation and Governance were proposed as principles of Society 5.0 to be standardized.

4) JIS preliminary draft on "Society 5.0" has just been completed.

5) International standardization (in ISO etc.) of "Society 5.0" is planned as a next step, first; Generic high-level standard, second; Specific business level standard.

Thank you very much.