

# Society 5.0: Aiming for a New Human-Centered Society



Author  
Mayumi Fukuyama

By Mayumi Fukuyama

The rapid evolution of information and communications technology (ICT) is bringing drastic changes to society and industry. Digital transformation will create new values and is becoming a pillar of industrial policy in many countries. In anticipation of such global trends, “Society 5.0” was presented as a core concept in the 5th Science and Technology Basic Plan, adopted by the Japanese Cabinet in January 2016. It was identified as one growth strategy for Japan. Society 5.0 is also a core part of “The Investment for the Future Strategy 2017: Reform for Achieving Society 5.0”. The basic concept and typical activities for Society 5.0 in Japan are discussed below.

## Digital Transformation

We are now in a new era, one in which globalization and rapid evolution of digital technologies such as the Internet of Things (IoT), artificial intelligence (AI) and robotics are bringing significant changes to society. The environment and people’s values are becoming increasingly diverse and complex.

*Chart 1* shows activities targeting new digital technologies throughout the world, which include Industry 4.0, also known as the “4th Industrial Revolution”, the Industrial Internet, and Made in China 2025. The wave of digital transformation is the common element that is driving such activities, and thus digital transformation becomes a pillar of industrial policy.

At the same time, the world is increasingly faced with challenges of global scale, such as depletion of natural resources, global warming, growing economic disparity, and terrorism. We are now in a challenging age of uncertainty, with growing complexity at all levels. Thus it is critical that we leverage ICT to its fullest to gain new knowledge, and create new values by making connections between “people and things” and between the “real and cyber” worlds, as an effective and efficient means of resolving issues in society, creating better lives for people and sustaining healthy economic growth. In order to realize such a society through digitalization, it will be vital to overcome these challenges through the inclusion of various stakeholders at multiple levels to share a common future vision.

In September 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, with Sustainable Development Goals (SDGs) as its core. It is a challenge to achieve a comprehensive system in which all nations work together toward a sustainable world that hopes to achieve both economic development and solutions to societal issues. The key guiding principle is to realize peace and

prosperity for all people and the planet, by responding to the challenges with an inclusiveness that “leaves no one behind”.

## Challenges Facing Japan

Turning our attention to Japan, there are many societal challenges that Japan will need to overcome from now on. With a declining birth rate coupled with an increasing senior population, Japan faces a shrinking labor force and increased social security costs. The current labor force, which is greater than 77 million people, is expected to shrink to about 70%, 53 million people, by the year 2050. On the other hand, the cost of social security will increase due to an aging population from 120 trillion yen in fiscal 2015 to 150 trillion yen in fiscal 2025.

Looking at social capital in Japan, much of the basic infrastructure was established as part of large-scale development during a period of high economic growth from 1950 to 1970. Now over 50 years later, much of that infrastructure such as roads, bridges, and water pipes is deteriorating, and it is expected that a total budget of 190 trillion yen will be necessary over the 50 years from fiscal 2011 to fiscal 2060 to replace them.

These societal challenges that Japan faces are challenges that many other countries will eventually face as well. From this perspective, Japan has been called “an advanced country with advanced issues”.

## Society 5.0

Society 5.0 put forward by the Japanese government is a clear concept. It was drafted in the 5th Science and Technology Basic Plan by the Council for Science, Technology and Innovation, and approved by Cabinet decision in January 2016 (<http://www8.cao.go.jp/cstp/english/basic/5thbasicplan.pdf>).

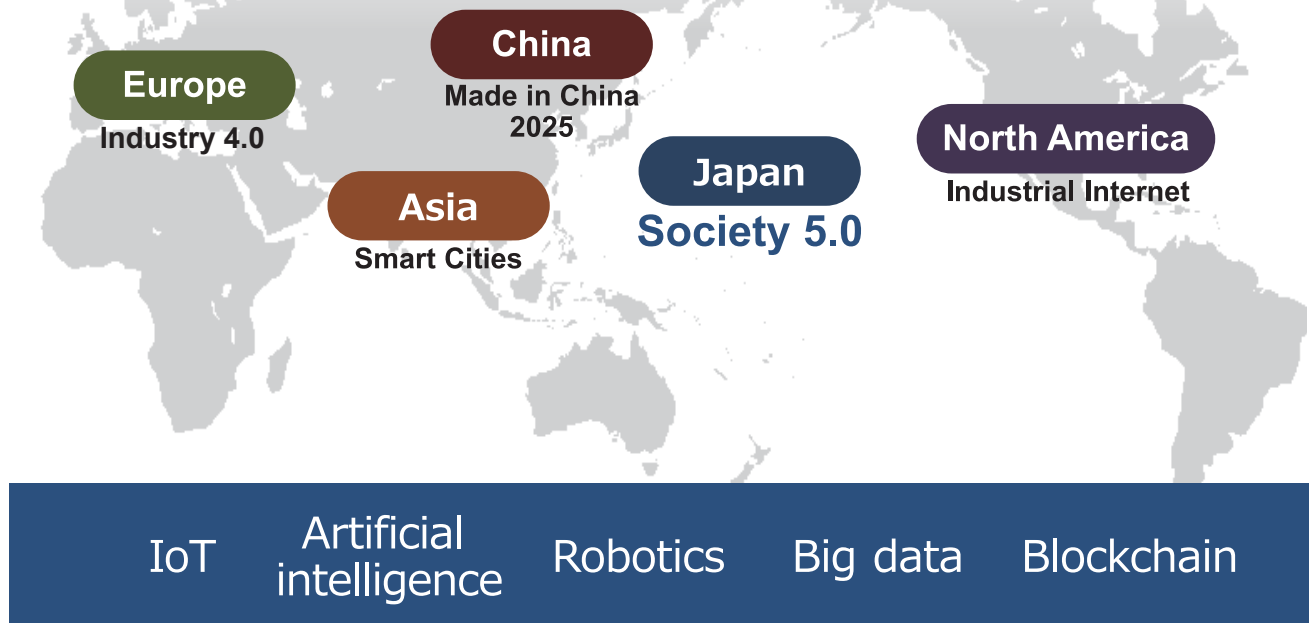
Looking back on human history, we can define different stages of societies. Society 1.0 is defined as groups of people hunting and gathering in harmonious coexistence with nature; Society 2.0 formed groups based on agricultural cultivation, increasing organization and nation-building; Society 3.0 is a society that promotes industrialization through industrial revolution, making mass production possible; and Society 4.0 is an information society that realizes increased added-value by connecting intangible assets as information networks. In this evolution, Society 5.0 is an information

CHART 1

## Digital transformation

The digitalization of industrial and social infrastructures is accelerating throughout the world.

Digital transformation becomes a pillar of industrial policy.



Source: Compiled by the author

society built upon Society 4.0, aiming for a prosperous human-centered society (Chart 2).

It is the goal of Society 5.0 to create a human-centric society in which both economic development and the resolution of societal challenges are achieved, and people can enjoy a high quality of life that is fully active and comfortable. It is a society that will attend in detail to the various needs of people, regardless of region, age, sex, language, etc. by providing necessary items and services. The key to its realization is the fusion of cyber space and the real world (physical space) to generate quality data, and from there create new values and solutions to resolve challenges. This national vision raised by Japan is to strive for a new, human-centered society, at the same time resolving a variety of societal issues.

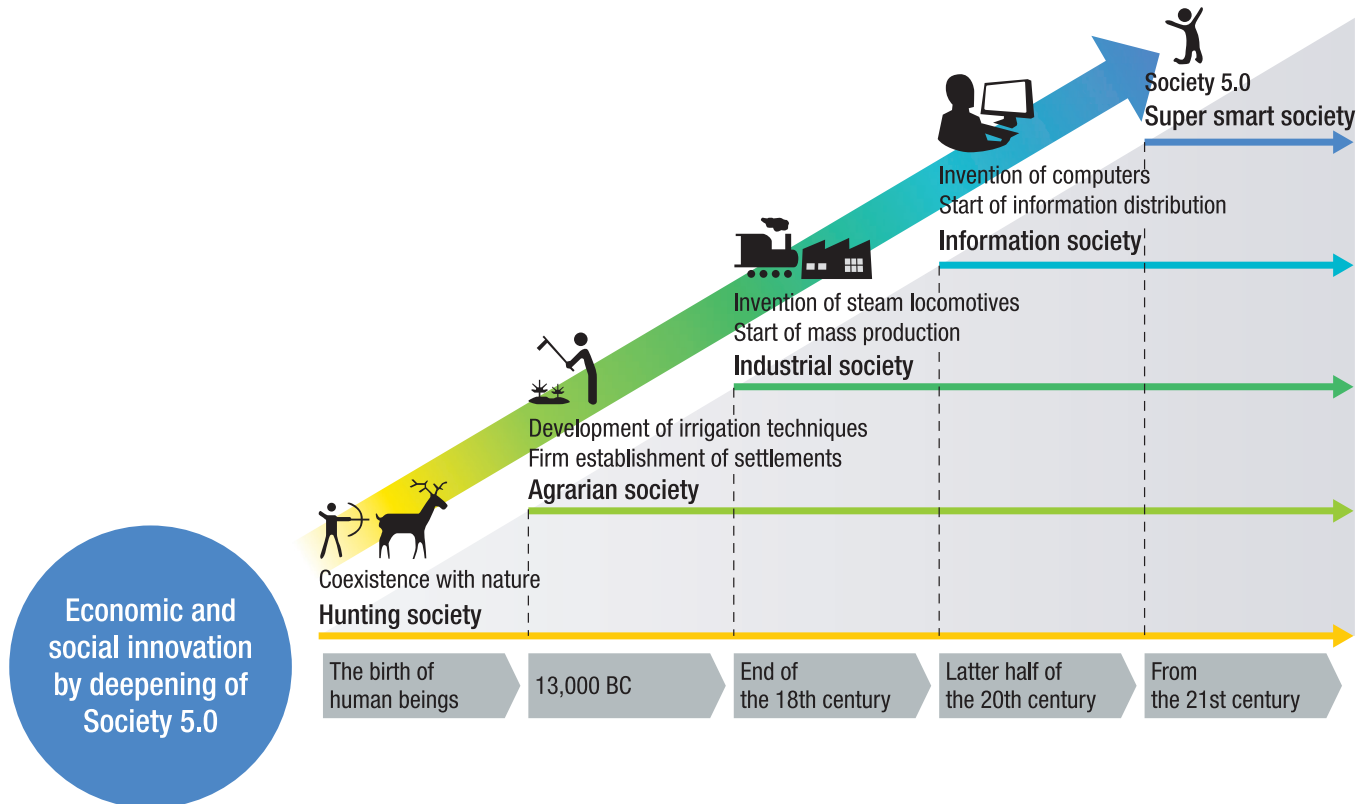
While Society 5.0 is Japan's growth strategy, it is not limited to Japan, as its goals are the same as those of the SDGs. The challenges that Japan faces, such as an aging population, declining birthrate, population decrease and aging infrastructure, are challenges that many other countries will eventually face. Japan is one of the first nations to face these challenges. By the early resolution of such challenges through Society 5.0, and by sharing those solutions with the world, Japan can contribute to resolving similar challenges worldwide and the achievement of the SDGs.

### Enhancement of Society 5.0

After the Cabinet decision on the 5th Science and Technology Basic Plan, the Headquarters for Japan's Economic Revitalization established a "Council on Investments for the Future" aiming to promote a growth strategy and accelerate structural reform to increase "investment for the future" (<https://www.kantei.go.jp/jp/singi/keizaisaisei/kettei.html>). In June of last year, the "Investment for the Future Strategy 2017" to realize Society 5.0 was adopted by the Cabinet as a concrete measure to achieve Society 5.0. ([http://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/miraitousi2017\\_summary.pdf](http://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/miraitousi2017_summary.pdf)). According to this strategy, the key to achieving mid- and long-term growth is to realize Society 5.0 that resolves various societal challenges by incorporating into every industry and social life the innovations of the 4th Industrial Revolution (e.g., IoT, big data, AI, robotics, sharing economy and so on) which have rapidly occurred.

Five strategic fields were selected as being able to leverage Japan's strengths and appeal to the world: "Extension of healthy lifespan", "Realization of mobility revolution", "Creation of next-generation supply chains", "Building and development of pleasant infrastructure and towns", and "FinTech". Taking "Extension of a healthy lifespan" as an example, Japan is among the very first in the

CHART 2  
**Society 5.0**



Source: Prepared by the author based on material from the Japan Business Federation (Keidanren) “Japan’s initiatives — Society 5.0”; Y. Harayama, “Society 5.0: Aiming for a New Human-centered Society”, *Hitachi Review*, vol. 66, no. 6, 2017, pp. 556–557

world to head towards an aging society but have rich data from a universal healthcare system and nursing care insurance system. Therefore the establishment of a “new system of health” to further extend a healthy life span will be realized through medical care, nursing care with an emphasis on health management, prevention of sickness, and self-support. Specific activities have already begun incorporating important cross-cutting themes such as human resource development and value creation through promotion of digitalization.

In December 2017, the “New Economic Policy Package” was adopted in order to implement measures in the “Investment for the Future Strategy 2017”. This includes a human resource development revolution and supply system innovation as key policies. By promoting human resource development, the Japanese government aims to build a society in which all citizens, including the young and elderly, women and men, people with disabilities, and people with intractable diseases, can lead a fulfilling life and demonstrate their abilities to the full, that is, a society in which all citizens are dynamically engaged. In the supply system revolution, target fields in which new value will be created by innovations such as IoT, big data,

robots and AI are automated driving, health, medical care, long-term care, financial and commercial transactions, construction, transportation, agriculture, forestry and fisheries, and tourism, sports, culture, and art ([http://www5.cao.go.jp/keizai1/package/20171208\\_package.pdf](http://www5.cao.go.jp/keizai1/package/20171208_package.pdf)).

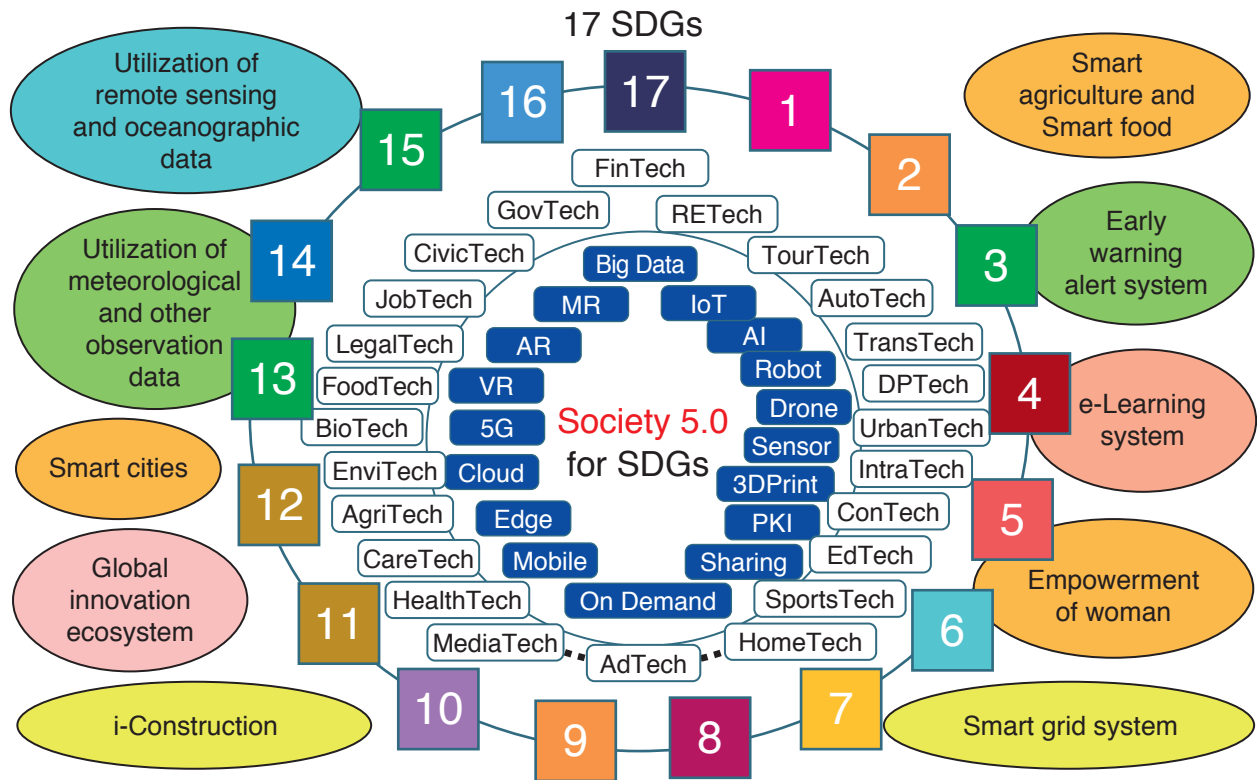
Japan is promoting Society 5.0 by introducing digital technologies in a variety of systems, as well as accelerating its implementation to achieve a society in which all citizens are dynamically engaged.

### Industry Initiatives

Keidanren (Japan Business Federation) is Japan’s most important federation. It is well aligned with this game-changing initiative. On Nov. 8, 2017, Keidanren revised its Charter of Corporate Behavior, including a section on the “Realization of a Sustainable Society”, with the primary aim of proactively delivering on SDGs through the creation of Society 5.0 (<http://www.keidanren.or.jp/en/policy/csr/charter2017.html>). *Chart 3* summarizes the concept of “Society 5.0 for SDGs” and the image of key technologies and systems for 5.0 and the 17 SDGs.

CHART 3

### Sustainable development goals



Source: Prepared by the author based on material from the Japan Business Federation (Keidanren) "Society 5.0 for SDGs".

It is often pointed out that digital transformation has had a drastic impact on conventional industries, and it has also increased social complexity, and some negative aspects of a digital society, such as security risks and privacy issues, are now becoming apparent. At the same time, the trend towards creating new value through digital technologies and contributing to future society can now be seen throughout the world. The evolution of digital transformation is not a path that can be avoided. Therefore, these negative aspects should be shared and recognized, and we try to accelerate the participation of multi-stakeholders and share best practices. Society 5.0 is able to address and provide approaches to reduce these negative aspects. However, this will require, in the words of the position paper, a breaking down of the "five walls" of the ministries and agencies, legal system, technologies, human resources, and social acceptance ("Toward Realization of the New Economy and Society", April 19, 2016, [http://www.keidanren.or.jp/en/policy/2016/029\\_outline.pdf](http://www.keidanren.or.jp/en/policy/2016/029_outline.pdf)).

This will be our global challenge — in which not only government but also industry and academia are expected to play a leading role, involving the creation of innovation and ecosystems.

### Conclusion

The goal of Society 5.0 is to realize a society where people enjoy life to the fullest. Economic growth and technological development exist for that purpose, and not for the prosperity of a select few. In accordance with this concept proclaimed by the government, various activities have begun in Japanese academic circles and in industry. And, although Society 5.0 originates in Japan, its purpose is not just for the prosperity of one country. The frameworks and technology developed here will no doubt contribute to resolving societal challenges worldwide. **JS**

Mayumi Fukuyama is a general manager and chief information officer of the Technology Management Center, Technology Strategy Office, Research & Development Group, Hitachi, Ltd.