

## Policy Focus Overview of the final report on “Information and Communications Policy with a View to 2030”

### 1. Background and history

The role of information and communications in citizen's lives and economic activities, and securing the security associated with their use, have become more important due to the progress of digital technologies during the COVID-19 pandemic. Meanwhile, issues such as the growing presence of overseas platform operators and supply chain risks in the information and communications field have become apparent against the backdrop of recent changes in the international situation, such as tensions between the United States and China.

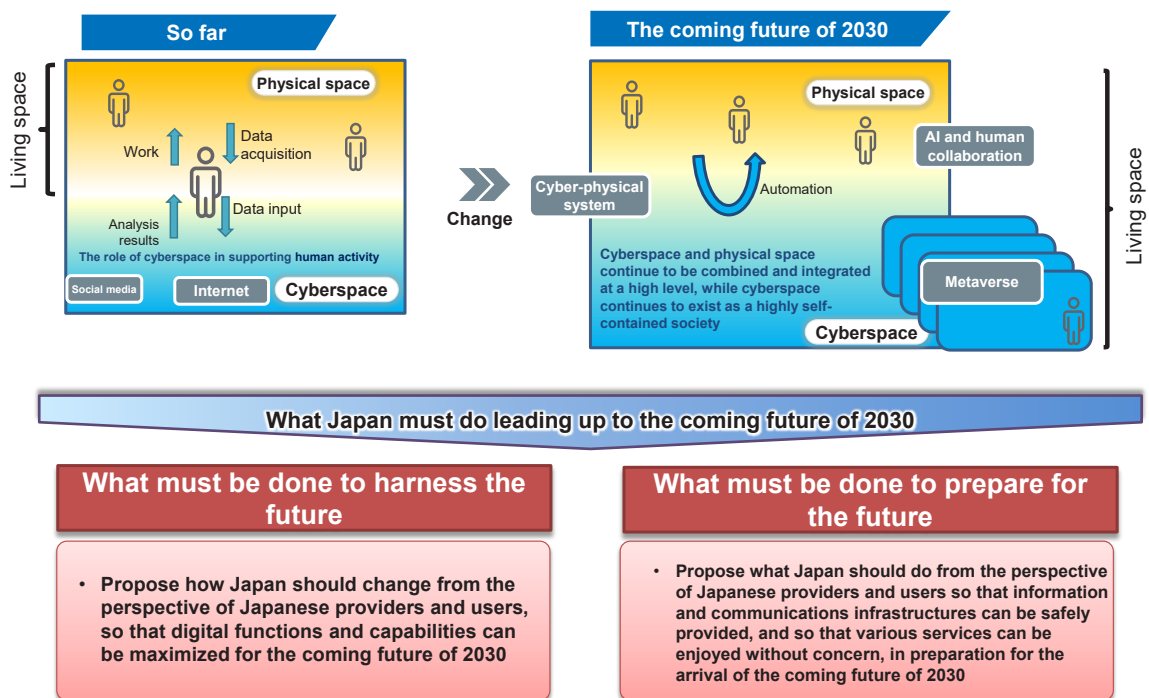
With this in mind, the Ministry of Internal Affairs and Communications consulted with the Information and Communications Council on Information and Communications Policy with a View to 2030 in September 2021, and held discussions on the direction of ICT policy to realize Society 5.0 and ensure economic security during a meeting of the General Policy Committee of the Information and Communications Policy Subcommittee, and its first report was presented in June 2022.

Japan is expected to face labor shortages and a shrinking domestic market, so the use of digital technology will become increasingly important. However, digital usage in Japan dropped to 29th place out of 63 countries

and regions ranked in the 2022 IMD Digital Competitiveness Ranking, and dropped to 63rd place in the data utilization category. The situation where Japan cannot make full use of digital technology has been continued. Meanwhile, cyberspace environments have entered a new phase due to advances in AI, robotics, and other technologies, and hardware technology (which has been a strength of Japan) is becoming more important in realizing cyber-physical systems.

In order to ensure that Japan's ICT industry can continue to grow so that Japan can increase its international competitiveness to help realize a prosperous life for its citizens and achieve a sound Internet environment, the committee resumed deliberations in January 2023 in order to consider the direction of ICT policy in light of future socioeconomic and technological changes. The committee deliberated on the direction that Japan should take in order to forecast the coming future of 2030 and demonstrate its digital functions and capabilities, and to safely provide information and communications infrastructures in preparation for 2030 so that citizens can enjoy various services with peace of mind. In June 2023, the final report on Information and Communications Policy with a View to 2030 was presented.

Figure 1 Direction Japan must take toward the coming future of 2030



## 2. Overview of the final report on “Information and Communications Policy with a View to 2030”

### (1) The coming future of 2030

In light of changes in the socioeconomic environment, such as the decrease in the working population due to the declining birthrate and aging population, and the advancement of information and communications technologies such as AI and robots, cyberspace and physical space are expected to have converged and become high-

#### a AI and human collaboration (AI agents)

Mutual cooperation between AI and humans, AI and the environment, and AI and AI will support life and eco-

#### b Advanced convergence of cyber-physical systems

[1] Improve safety and efficiency by using robots and other technologies to provide feedback from cyberspace to physical space

#### c Emergence of new life and economic activities (metaverse, etc.)

Through avatars, people can live or conduct socioeconomic activities in cyberspace, free from the various

ly integrated in 2030. Cyberspace is also expected to become a new form of “society,” and that existing living spaces will expand. Society 5.0 is expected to be realized in such a way that people will be able to concentrate on more essential activities and live rich lives that suit their lifestyles and needs, wherever they happen to be.

conomic activities in physical space, enabling a richer life

[2] Participate in remote physical space activities (life and economic activities) through cyberspace to compensate for mutual shortfalls, or participate in socioeconomic activities free from physical space constraints (increase remoteness of existence)

constraints unique to physical space.



**Figure (related data): Coming future of 2030**

Source: Final report on “Information and Communications Policy with a View to 2030”

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00359](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00359)  
(Data collection)

### (2) Challenges facing Japan toward 2030, and future direction

#### a Response to the rapid evolution of AI

Generative AI is now developed and provided mainly in the U.S., and so there is a bias in the learning data. There are therefore problems with this technology, such as reduced prediction accuracy and regional bias. It is also important for all citizens, not just young people, to be able to use AI to a certain extent, as mastery of AI will have an effect on convenience and productivity in social

and economic activities.

Therefore, it is necessary to engage in efforts to contribute to the creation of environments that allow Japanese people to easily make use of generative AI (AI foundation models in Japanese that reflect Japanese culture and norms), and to help citizens acquire the ability to skillfully utilize digital tools such as AI.

#### b Response to the promotion of business transformation and carbon neutrality

As values change from ownership to use, and as businesses come under pressure to transform their businesses and achieve carbon neutrality, it is necessary to realize DX and GX by upgrading cyber-physical systems in a manner that assumes global expansion. In order to truly realize cyber-physical systems, “actuators” that serve as contacts from cyberspace to physical space will play a crucial role.

It is necessary to engage in efforts such as active cooperation between the public and private sectors to develop rules in Japan.

Due to the globalization of supply chains, international standardization (such as ensuring interoperability) is another important factor in realizing an ecosystem that transcends regional, business, and industry boundaries. In that case, it is also necessary to have a strategy for what is standardize for. In recent years, standardization at higher layers (including service standards and social issues such as the environment) have become important, in addition to standardization activities linked to products such as ensuring compatibility and quality.

Although Japan has taken a leading position in developing technology, there are indications that it will fall behind in product and service development and lose out in business development. Outside of Japan, there are a number of efforts now in place to spread global standards in favor of certain countries as a national strategy.

It is important for innovative startups to continue to

maintain growth speed in order to realize cyber-physical systems. For example, late-stage investments and partnerships between startups and agile operating compa-

nies boasting technology and human resources can be effective.

**c Response to environmental changes in information and communications infrastructures**

In order to strengthen and accelerate efforts toward realizing Beyond 5G (which will serve as a social infrastructure in 2030), it is necessary to strategically promote R&D aimed at social implementation and overseas expansion, focusing on technological fields where Japan has strengths.

As providers of information and communications infrastructures become more diverse and equipment becomes more complex, it is necessary to consider how future information and communications infrastructures based on the user's perspective should be built, so that

users can enjoy the advantages of end-to-end high speed and low delay, and so that information and communications infrastructures are dependable.

In order to ensure economic security, the government must actively engage in both support and regulation, as a stakeholder. It is also important for us to reduce and eliminate cybersecurity and procurement risks. In order to improve autonomy by strengthening supply chains, it is necessary to develop methods to reliably procure devices and parts such as diversifying suppliers, while taking economic rationality into consideration.

**d Response to the development of the new social space of cyberspace**

The international community must commonly recognize that the metaverse is an online public space where freedom of expression and privacy are protected, and that its operation must be conducted democratically.

It is also necessary to promote the formation of international rules in cooperation between the public and private sectors and ministries and agencies, while deter-

mining and verifying the portability of rules and avatars applied within the metaverse.

Given the abundance of technology and intellectual property related to content such as avatars, Japan will need to actively engage in rulemaking in the global metaverse market.

**e Response to ensuring sound cyberspace environments**

Concerns are growing over state intervention, the concentration of data in big tech companies, the fragmentation of the Internet due to filter bubbles and echo chambers, and the distribution of false information and misinformation due to the “attention economy.”

In order to ensure freedom of expression, it is necessary to strengthen cooperation among stakeholders and the international community and promote constant efforts throughout society, including voluntary efforts

among a wide range of stakeholders and national measures based on explanations including evidence from operators, such as platform operators ensuring appropriate responses as well as transparency and accountability, existing media engaging in collaborative fact-checking efforts, and improving the ICT literacy of citizens. False information and misinformation tend to spread easily among those with low literacy, so it is necessary to take measures to improve literacy for all generations.



**Figure (related data) Overview of the final report on “Information and Communications Policy with a View to 2030”**

Source: Final report on “Information and Communications Policy with a View to 2030”

URL: (Data collection)