Advisory Opinion

Toward a Safe and Secure Digital Society

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Science Council of Japan

Subcommittee on Safety and Security Technologies

Supporting the Digital Society

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EXECTIVE SUMMARY

1. Current Status and Problems

The COVID-19 crisis revealed the importance of having necessary information and services always available to the people who need them and when they need them. In other words, it became clear that it is important for national and local governments, as well as for individuals, to build a digital society that leads to greater efficiency and sustainability of social activities. In the digital society, it is expected that flexible modification and creation of new organizational and business models, significant cost and time reductions, and solutions to various social issues using machine learning of digitized "data" will be possible to achieve future growth and strengthen competitiveness.

Since digitization is necessary in various industries such as healthcare, government, education, and industry, it is essential to build a system to overcome the challenges and promote a safe and secure digital society, rather than to hesitate in digitization because of the challenges.

On the other hand, digitized "data", "goods", and "services" pose new challenges such as cyber-attacks and other security risks and privacy breaches. In fact, with the rapid spread of remote and telecommuting operations during the COVID-19 crisis, the targets of cyber-attacks have spread to individuals. In addition, cyber-attacks target all industrial activities, regardless of company size or industry. In a digital society, various organizations and generations are connected by networks. Therefore, delays in digitization in some organizations and generations may lead to security problems and an unfair society. Therefore, it is important to build a safe and secure digital society for society as a whole.

2. Contents

Based on the premise that there is no absolute safety, this subcommittee examined the construction of institutions necessary for building a safe and secure digital society that takes security and privacy into consideration for Japanese society as a whole, and clarified four major issues to be addressed in order to build a safe and secure digital society. Based on the subcommittee's activity, we present our views on the four issues that should be addressed by the government and administration, academic and research institutions, and industry.

(1) Establish a system to strengthen digital personnel through recurrent education.

Cost, time, and the significance of relearning have been pointed out as factors that inhibit individuals from relearning. This advisory opinion suggests that, from the two perspectives of in-house education for employed persons and employment for those who have left the workforce, the government needs to establish a system for the following items.

① Visualization of occupational information.

② Enhancement of public support for individuals to relearn.

③ Establishment of a system through collaboration among companies, educational institutions, local governments, etc.

In addition, the following efforts are considered necessary for recurrent education at academic and research institutions.

A) Visualization of information and exchange of human resources to guarantee the quality of recurrent education

B) Cooperation on curriculum improvement

（2） Compatibility of Privacy Protection and Digital Society

Unlike personal information, privacy information is unclear as to what it is protected against, and risks and protection methods vary depending on the type of use. This advisory opinion suggests that governments should establish the system for the following items:

① Support for the establishment of privacy governance.

② Establishment of a joint use evaluation body for privacy information.

For academic and research institutions, the following measures should be considered.

A) Establishment of privacy governance

(3) Designing a Digital Society for Cyber Attacks

Factors hindering cyber security measures at companies, local governments, etc. include the cost of the measures and the lack of visibility of the effectiveness of the measures. This advisory opinion suggests that the government should establish systems for the following items.

①. Public support for cyber security measures

②. Visualization of cyber security measures

(4) Designing a digital society with incident information sharing and assistance mechanisms.

As cyber attacks become more complex and sophisticated, it is becoming increasingly difficult for victim organizations to analyze and implement countermeasures on their own, and delays in taking appropriate action and preventing recurrence will lead to further damage. This advisory opinion suggests that the government should establish the system for the following items.

① Promotion of incident information sharing and operation

② Cyber security-related human resource exchange

③ Public support for cyber security

④ Visualization of cyber-attack countermeasures, awareness-raising and public relations activities.

In addition to the above four issues, this advisory opinion also suggests that the following two issues should be considered: (5) social acceptability of digital technology and (6) strengthening research capabilities as issues to be considered when building a safe and secure digital society.