Section 2 New Challenges Accompanying the Advancement of AI

While being likely to bring convenience to our social and economic lives, AI may have a wide range of risks. When it comes to technological innovation surrounding AI, it is important to simultaneously promote innovation and address risks.

In addition, Japan is lagging behind the world's advanced AI countries in terms of technology, industry, and usage. If this trend continues, there is a risk that Japan will fall behind in the various economic and social changes that will be driven by AI. In order to promote Japan's economic growth and utilization in the socio-economic domain, as well as from the perspective of economic security, there is an increasing need for efforts to promote AI-related innovation, such as promoting AI technology, advancing industries that utilize AI, and utilizing AI in social life.

1. Overview of key challenges

(1) Balancing AI risk management and innovation

While the benefits of AI are growing, as AI use expands and new technologies emerge, the risks they pose are also increasing. The AI Guidelines for Business (Version 1.1), published by the MIC and the METI in March 2025 after discussions at the "Joint meeting of Conference toward AI Network Society / AI Governance Review Committee" and the "Study Group on AI Business Guidelines" outlines not only technical risks but also social risks (risks related to ethics and law, economic activity, information space, and the environment).

(2) Japan's declining presence in the AI field

The current situation is that Japan's research and development in the field of AI is not highly regarded compared with companies leading AI development overseas, such as those in the U.S.

For example, according to the 2023 Global AI Vibrancy Ranking released by Stanford University's HAI (Human-Centered Artificial Intelligence) in November 2024, Japan is ranked 9th overall[1].

There are various possible reasons behind this, but some of the reasons why overseas AI-advanced countries are leading the way include, for example, in terms of investment, data, and human resources, the fact that in the U.S., big tech companies and others who can utilize their enormous financial resources, data, and advanced technological development capabilities have made long-term investments in companies, including start-ups; and the fact that the U.S. has an advantage in each layer of the generative AI-related market, from applications to models and infrastructure (computing resources, specialized human resources, data), by utilizing the business foundations it has built through its past businesses; and in China, the existence of a system that enables technology development and investment by large platform operators and others[2].

2. Direction of response

In order to simultaneously promote innovation and address risks related to AI, it is necessary to take steps that will further promote innovation and utilize AI, such as formulating rules regarding AI both in Japan and overseas, working on risk management, and international collaboration, as well as promoting AI technology development, securing human resources, and utilizing AI in companies and society.

(1) Formulation of domestic rules in Japan

In Japan, in light of the rapid changes in AI technology and international discussions, the government established the AI Strategic Council in May 2023 as a control tower and is conducting intensive discussions. Based on the "Tentative Summary of AI Issues" compiled by the AI Strategic Council (May 2023), the MIC and the METI formulated and published the 1.0 version of the "AI Guidelines for Business" in April 2024[3]. In November of the same year, it was updated to version 1.01, and in March 2025, it was updated to version 1.1, taking into account the latest trends both in Japan and overseas.

Furthermore, as the development of rules regarding AI continues both in Japan and overseas, the first AI Institutional Research Group was held in Japan in August 2024 under the AI Strategic Council. "Interim Report" was compiled in February 2025, and based on the "Interim Report," the "Act on Promotion of Research and Development, and Utilization of Artificial Intelligence-related Technology" was enacted at the 217th session of the Diet (ordinary session) (Act No. 53 of 2025)[4].

[1] Refer to "Trends in AI development and business expansion in Japan" in Section 2, 1 (3), Chapter 1, Part I
[2] Refer to "Leading the field of generative AI" in Section 3, 1 (2) (iii), Chapter 1, Part I
[3] AI Guidelines for Business
https://www.soumu.go.jp/main_sosiki/kenkyu/ai_network/02ryutsu20_04000019.html
https://www.meti.go.jp/shingikai/mono_info_service/ai_shakai_jisso/20240419_report.html
[4] In addition, with regard to AI safety assessment, in February 2024, in light of growing international interest in AI safety, the AI Safety Institute (AISI) was established within the Information-technology Promotion Agency (IPA) as an agency to study methods for assessing AI safety. In addition, the "Guide to Evaluation Perspectives on AI Safety" has been published, which outlines the basic concepts for evaluating the safety of AI systems, and indicates the risks and evaluation items anticipated in safety evaluations.

In addition, in order to promote the use of generative AI in various government operations and manage risks in tandem, the Digital Agency conducted studies in cooperation with the MIC, the METI, and others, and [5]formulated the "Guideline for Japanese Governments' Procurements and Utilizations of Generative AI for the sake of Evolution and Innovation of Public Administration" (decided by the Council for the Promotion of a Digital Society Executive Board Meeting on May 27, 2025).

(2) Promotion of international collaboration

Given that the rapid development and spread of generative AI has become an important issue for the international community as a whole, the "Hiroshima AI Process" was launched at the G7 Hiroshima Summit in 2023, with the aim of discussing international governance regarding generative AI. As part of this series of events, various international collaboration efforts are being undertaken[6].

(3) Promoting AI research and development, business development, and social implementation in Japan

As seen in Section 2, Chapter 1, research and development in the field of AI is being actively pursued by various Japanese organizations and companies, and a variety of initiatives are underway, ranging from the development of LLMs and business development utilizing such LLMs to efforts to utilize general-purpose and large-scale LLMs in collaboration with foreign business operators.

Meanwhile, while foreign business operators are far ahead in AI development, various policy measures are being taken to improve research and development at Japanese companies and organizations. For example, as a measure to support LLM development, the MIC is implementing measures at NICT to develop and expand the training data required for LLM development in order to strengthen AI development capabilities. [7]Going forward, measures that contribute to promoting and supporting AI research and development in Japan will remain important.

Furthermore, in addition to research and development of AI, it is necessary to actively promote its use in companies and other organizations, its application to business, and its social implementation. At the same time, it is necessary to secure, develop, and improve the literacy of human resources who can develop and utilize AI to support these efforts. Therefore, efforts to further promote innovation in AI and contribute to its utilization are required.

[5] https://www.digital.go.jp/resources/standard_guidelines
[6] Refer to the "Hiroshima Process" in Section 8, 5 (2), Chapter 2, Part II
[7] Refer to "LLM research and development trends" in Section 2, 1 (3) (i), Chapter 1, Part I