Basic Concept of the Integrated Innovation Strategy 2024

< Situation surrounding science, technology and innovation >

- Science, technology and innovation are driving forces in Japan's economic growth, and their importance is growing even more in solving social issues and responding to disasters.

- As the global security environment increases in severity, such as the situation in Ukraine and the situation in Israel and Palestine, competition for leadership over advanced science and technology intensifies, and supply chains are fragmenting on a global scale.

- On the other hand, there are concerns that the decline in relative research capabilities and the delay in the formation of an innovation ecosystem will significantly impact Japan's economic growth and future job creation.

< Direction of the Integrated Innovation Strategy 2024 >

- It is important to further strengthen research capabilities, industrial competitiveness, and responses to economic security from a global perspective, and to strengthen cooperation with the international community, including our ally and like-minded countries, including the G7, as well as the Global South, including ASEAN and India.

- In Japan, automation and labor-saving through AI and robotics are urgently needed as manpower shortages worsen, and preparedness and response to frequently occurring disasters are also urgent issues. As science, technology and innovation play even more important roles in these areas, the social implementation of technology shall be accelerated.

< Three strengthening measures and three cornerstones >

- The three strengthening measures are to promote **integrated strategy for key technologies**, **strengthening cooperation from a global perspective**, and **enhancing competitiveness and ensuring safety and security in the AI field**.

- In addition, continuing to steadily promote policies based on the three traditional cornerstones of **strategic promotion of advanced science and technology**, **enhancement of knowledge bases (research capabilities) and human resource (HR) development**, **and creation of innovation ecosystem**.

Three strengthening measures of the Integrated Innovation Strategy 2024

Integrated strategy for key technologies

- R&D by developing <u>core technologies</u> and <u>integrating technologies</u> with other strategic areas (Collaboration between industry, academia, and government; promotion of R&D through AI, robotics, IoT, etc.)
- Establishment of <u>domestic industrial infrastructure</u> and promotion of innovation through <u>startups, etc.</u> (Early creation of use cases, strengthening of hub and base functions, etc.)
- <u>Developing and securing human resources through industry, academia, and government</u> (Developing and securing human resources for industrialization, market development, and R&D)

Strengthening collaboration from a global perspective

- <u>Leading and participating in international rulemaking</u> on key technologies, etc. (Promotion of development and use, ensuring safety, ensuring presence, etc.)
- <u>Strengthening coordination</u> between science, technology and innovation policies and <u>economic security policies</u> (Strategic R&D including international cooperation and collaboration, prevention of technology leakage, etc.)
- <u>Active use of resources</u> from a global perspective and <u>strategic cooperation</u> (Formation of a base for international talent mobility and circulation, participation in top international scientific circles, etc.)

Enhancing competitiveness and ensuring safety and security in AI field

- <u>AI innovation and AI accelerated innovation</u> (Strengthening R&D capabilities, promoting the use of AI, upgrading infrastructure, etc.)
- <u>Ensuring AI safety and security</u> (Governance, safety considerations, countermeasures against false information and misinformation, intellectual property, etc.)
- <u>Promoting international cooperation and collaboration</u> (International cooperation based on the outcomes of the Hiroshima AI Process, etc.)

Three cornerstones of the Integrated Innovation Strategy 2024

Strategic promotion of Advanced Science and Technologies

● **Strategic promotion of key fields**

- R&D in AI, fusion energy, quantum, biotechnology, materials, and other fields
- Promotion of securing/R&D of semiconductor production infrastructure as digital social infrastructure, ICT infrastructure development, Beyond 5G (6G), etc.
- Promotion of the fields of health and medicine, space, ocean, food, agriculture, forestry and fisheries, and environmental energy

● **Strengthening initiatives related to economic security**

- Continuous support through the Key and Advanced Technology R&D through Cross Community Collaboration Program（K Program）
- Ensuring research security and integrity at universities and research institutions
- Strengthening surveys and research functions, including preparatory work for the establishment of a think tank related to safety and security

● **Promotion of R&D and social implementation**

- Promotion of value creation using Convergence Knowledge (So-Go-Chi)
- Promotion of social implementation of science and technology that contribute to automation, labor saving, and disaster prevention/mitigation
- Acceleration of R&D and social implementation through integrated operation of Strategic Innovation Promotion Program（SIP）phase 3 and BRIDGE, and promotion of the Moonshot R&D Program

Enhancement of Knowledge bases (research capabilities) and HR Development

● **University Endowment Fund, regional core universities,etc**

- Accreditation of Universities for International Research Excellence, funding from the investment income of a 10-trillion-yen University Endowment Fund, and the opening of the next call for proposals
- Support through the Package for Comprehensive Promotion of Research Universities with a Regional Core and Distinctive Characteristics
- Enhancement of research infrastructure and human resources to strengthen the functions of National Research and Development Agencies, and strengthening of cooperation among National Research and Development Agencies
- Achieving a research environment conducive to research, and strengthening research capabilities through basic expenses for universities and other institutions, and competitive research funds such as KAKENHI

● **Strengthening research facilities and open science**

- Upgrading the advanced large-scale facilities, and promoting their use in industry and academia
- Promotion of open access to publicly funded scholarly publications and scientific data, management and utilization of research data,etc.

● **Enhancement of HR development and education**

- Promotion for the activities of and creation of opportunities for young researchers, female researchers, and doctoral personnel, and support for doctoral students
- Establishment of an ecosystem that supports Inquiry Based and STEAM education throughout society based on a policy package for education and HR development

Creation of Innovation Ecosystem

● **R&D startup support**

- Enhancing support through the Small/Startup Business Innovation Research（SBIR）System
- Promoting public procurement from startups

● **Cooperation among cities, regions, universities, etc.**

- Embodying the Global Startup Campus Initiative
- Supporting Startup ecosystem hub Cities and globalization thereof
- Improving intellectual property governance at universities
- Promoting Industry-Academia-Government Collaborations, open innovation, etc.

● **Promoting a virtuous cycle of human resources, technology, and funds**

- Identifying and nurturing CxO and other management and innovation human resources
- Promoting the mobilization of human resources, technology, and funds from large companies to startups
- Expanding R&D investment in the public and private sectors

Enhancement of surveys and research functions to support science, technology and innovation policies, and analytical functions through e-CSTI