

# INTEGRATED INNOVATION STRATEGY 2022

## MAKING GREAT STRIDES TOWARD SOCIETY 5.0

*Science, technology, and innovation are growing increasingly vital not only for sustaining economic growth, but for finding solutions to social problems and ensuring safety and security. Here are the three pillars of Japan's "Integrated Innovation Strategy 2022," which lays out the direction for such policies and the priority measures to be taken.*

As the situation in Ukraine, infectious disease, climate change, and other unpredictable crises and unprecedented social challenges sway the world, developments in science, technology, and innovation have become not only the drivers of economic growth, but also crucial lifelines for countries to solve social problems and ensure the safety and security of their citizens. In the 6th Science, Technology and Innovation Basic Plan, Japan set the goal of reaching

120 trillion yen in R&D investment between the public and private sector over the five years from fiscal 2021, aiming to realize Society 5.0—a model future society proposed by the Japanese government, in which both economic growth and the resolution of social issues can be achieved by making full use of advanced technologies. This June, the Kishida administration released the Integrated Innovation Strategy 2022, which outlines the process for

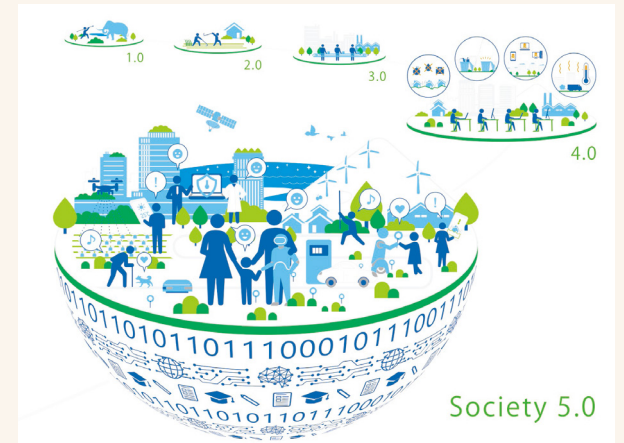
achieving this goal.

The strategy has three fundamental pillars. The first is strengthening research capabilities and developing human resources. Utilizing a 10-trillion-yen University Endowment Fund, long-term support will be provided to realize world-class research universities that generate outstanding results and foster talented individuals who can lead society. Inquisitive minds and critical thinking, essential for the age of rapid technological innovation, will be cultivated via efforts such as enhancing STEAM education—cross-sectional education prioritizing science, technology, engineering, and mathematics, with the addition of the arts—in elementary, middle, and high schools, and providing opportunities to experience high-level pursuits at universities and other institutes for higher learning. Through such initiatives, “knowledge”—a source of innovation and value creation for future generations—will be continuously created.

The second pillar is the strategic promotion of advanced and emerging technology. R&D in a wide range of technologies that can bring about transformational change, such as AI and quantum technology, will be advanced strategically to accelerate their practical application. For AI technology, deep learning is positioned as a priority area since its effective utilization is anticipated in a broad range of fields. Additionally, the creation of digital twins and applications for sustainability will be pursued to allow agile responses to impending crises, such as large-scale earthquakes and increasingly torrential rainfall. Regarding quantum technology, new targets of having 10 million users in Japan by 2030, achieving production on the scale of 50 trillion yen, and creating quantum unicorn startups have been set.

To that end, innovation hubs for industry, academia, and government collaboration at all levels from basic research to social implementation will be strengthened, and utilization of such cutting-edge technologies will be promoted. Moreover, centering on the launch of programs that provide powerful support for such development, bold investment in advanced science and technology will nurture world-leading technologies.

With research capabilities and the seeds of



Society 5.0 refers to the new society that follows the hunting society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0) and information society (Society 4.0). It is defined as “a human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space.” It was first proposed in 2016 by Japan as the future society it should aspire to be. Furthermore, Society 5.0 was redefined in 2021 as “a sustainable and resilient society that protects the safety and security of the people and one that realizes the well-being of individuals.” Key to its realization is the advancement of science, technology, and innovation. Incorporating AI, quantum technology, IoT, and other cutting-edge technologies in all industries and social activities, and creating new value from innovation, will both achieve economic development and find solutions to social problems in parallel.

technology developed through these two pillars, the creation of an innovation ecosystem—the third pillar—will be a game-changer in realizing the future society. By reinforcing initiatives for the advancement of the venture capital market, a stronger mechanism for the continuous birth and growth of startups that lead to innovation will be developed. In addition, public-private R&D investment will be expanded through measures such as R&D tax incentives and the Japanese SBIR (Small Business Innovation Research) program. While leading to new growth, the rewards will be given back to individual citizens and society as a whole in the forms of fulfilling diverse well-being needs and solving social issues.

The integration of these three pillars is essential to realizing Society 5.0. The complex social problems confronting the world today are difficult to overcome through sector-specific technologies and individual policies alone. By enhancing overall policy integration, new value will be created to sustain economic growth and solve global-scale issues, and the fruits of such efforts will be distributed to citizens, society, and the world. Japan will make strong strides toward its goal of becoming a science and technology nation for the new age that will achieve this virtuous cycle of growth and distribution.

At the meeting of the Council for Science, Technology and Innovation in June, PM Kishida received an explanation while observing a model of a quantum computer. He expressed his determination to collaborate with other nations and draw focused investment from the public and private sectors to accelerate initiatives for the social implementation and industrialization of quantum technology.

