

Japan in 2025

In his policy speech last September, Prime Minister Abe Shinzo pledged to draft and execute a long-term strategic initiative for Japan, called "Innovation 25," which looks towards 2025. Five months later, in February this year, the Innovation 25 Strategy Council, led by Minister of State for Innovation Takaichi Sanae and chaired by Kurokawa Kiyoshi, a special advisor to the Cabinet, compiled an interim report on the sessions. The following is a summary of that report.

There are a number of forces at work surrounding Japan and the world in the next twenty years. Japan will face a rapidly declining population and aging society, and the world will enter an age that humanity has never experienced, an age characterized by a knowledge-based network society, explosive progress in globalization, population growth that threatens the sustainability of humanity, environmental degradation, and an increase in the so-called North-South disparity. We can never create a bright future unless we dedicate ourselves to changing our ways of thinking and conventional attitudes. To sustain economic growth even in an era of population decline, each one of us has to strive to develop our potential to the fullest, integrate and collaborate with the world outside and with differences, and improve our productivity.

It is of paramount importance that we view the current issues as opportunities rather than as threats, so as to strengthen Japan's international competitiveness and its contribution, and that the benefits of science and technology rapidly reach the people of Japan and the world through our investment in diverse forms of science and technology, and through the strengthening of human resources and systems that put those benefits to maximum and speedy effect. The "Great Competition Era of Knowledge" today is the time when we must strengthen our international competitiveness in science and technology.

It is also necessary to reduce the fundamental differences arising among people by enabling the benefits of technological innovation to rapidly reach as many people as possible. Medical innovations such as the development of new therapeutic techniques will enable people to be free of illness and to share the same opportunities that healthy people receive, or prevent old age from becoming a physical disability in comparison to youth.

This innovation must be more than

technological innovation alone; it must be a broad innovation that, when combined with the creation of a new social system that provides the benefits of the technological innovation to society, changes society and the way people live. It must play a major role in improving productivity, strengthening Japan's international competitiveness and contribution, and improving people's lives.

Building a Model Nation

Foreseeing Japan and the world twenty years from now based on opinions of citizens and scientists and on forecast reports on future science and technology, numerous images of the society that Japan must aim for in 2025 have emerged.

For example, people will have the ability to constantly monitor their health by drinking just before bedtime a microcapsule that will reveal all aspects of their health in the morning, and society will enable the results of the examination to be transmitted instantly to hospitals, permitting diagnosis and remote treatment anytime, anywhere. This society would also have automobiles that use artificial photosynthesis technology that cleans air each time they are driven.

By turning dreams into reality through innovation, we see Japan in 2025 as a model nation for the world, with a society that allows lifelong health, safety, assurance, and diversity in life, and which as a nation helps to address global issues and open its doors to the world.

Basic Strategy for Promoting Innovation

We must clear extremely high technological, institutional, and social hurdles to make this future vision of Japan a reality. What await us are hurdles that are too high to be cleared using conventional efforts alone. Innovation must be promoted through breakthroughs in areas such as basic research, technological developments, institutional structuring, fostering of human resources, and fresh mindsets.

Consequently, our efforts must base themselves on (1) the comprehensive promotion of "innovation in science and technology," breaking down barriers to open up new possibilities in science and technology and to turn those possibilities into final products and systems, "innovation in social systems," creating an environment that produces innovation, and "innovation in human resources," equipping people with the ability to produce innovations; (2) a change in the mindset of each individual citizen; (3) the establishment of an open and universal system; and (4) the development of strategies based on the views of the people of Japan and of the world.

Putting in place a System to Realize an "Innovation Nation"

In light of the "Basic Strategy for Promoting Innovation," issues that we need to address urgently to create an "Innovation Nation" are as listed in the table, "Policies to Be Implemented in the Short Term."

Comprehensive mechanisms are needed to integrate the three areas of innovation addressed in this strategy: science and technology, our social system, and human resources. Sustaining innovation over the next twenty years to make Innovation 25 a reality will require a persistent effort. Japan will become an innovative nation by 2025 only if top-down measures cutting across existing ministries and organizations are established, and if its people continue to persevere with the "Plan-Do-Check-Act" (PDCA) cycle.

The Innovation 25 Strategy Council will discuss the roadmap of strategic policies and will draft a strategic guideline by the end of May. We hope that government policies that are based on the guideline and that aim at achieving an "Innovation Nation" will be executed without delay. ■

Note: To read the full interim report in English, go to www.kantei.go.jp/foreign/innovation/index_e.html.

Policies to Be Implemented in the Short Term

National government policies requiring immediate action to launch the "Innovation 25" strategy are listed below.

Global environmental issues as a driver for economic growth and international contribution

Major actions required

1. Promote technological collaborations and transfers and joint international research and verification programs for global environment issues (e.g. develop effective measures to implement through ODA etc.).
2. Foster world-class leaders in the global environment area
3. Accelerate international expansion of environmental technology including international standardization
4. Implement effective policies to promote environment-related businesses
5. Promote environment-based diplomacy

Doubling the investment for the next generation (including investment for the younger generation and expanding IT use)

Major actions required

1. Expand the opportunities for young people to have international interactions. Provide opportunities for middle and high school students with their counterparts in Asia. Expand overseas exchange programs for university students and academics.
2. Expand scholarships and other measures to encourage creative and entrepreneurial challenges for young people
3. Enhance science and math education
4. Expand IT use and applications for improvement in productivity (e.g. develop an open and universal IT infrastructure)

University reform

Major actions required

1. Promote internationalization at undergraduate and graduate schools and faculties
2. Increase international competitiveness in education and research at universities
3. Review the distinction between the arts and sciences in university entrance examinations and undergraduate schools and faculties
4. Enhance research capabilities after reviewing current funding systems, including the allocation of funding and distribution
5. Enhance educational capabilities of universities so that they include continuing education for the community and general public

Investment increase for science and technology to ensure the Innovation 25 strategy delivers real value

Major actions required

1. Fund a diverse base of fundamental scientific research that is required for innovation in the next twenty years and provide financial support to young researchers with leadership potential
2. Review current screening processes for innovation including breakthrough technology research, develop mechanisms to transfer scientific knowledge so that the benefits are realized more quickly, and establish government-initiated stimulation programs to trigger initial demand for new technologies
3. Encourage frontier, cutting-edge research
4. Promote research and development investment in various corporate sectors
5. Provide mechanisms for interactions between the academic and corporate sectors that cut across traditional disciplinary and organizational boundaries

Innovation review—regulations, social systems, norms, and rules

Major actions required

1. Review regulations and rules that encourage "service innovation"
2. Review regulations to improve the efficiency of physical distribution, logistics, etc
3. Implement policies to create social systems and infrastructure that will accelerate and reinforce innovation (such as special regulation-free zones)
4. Review regulations and rules related to employment so that they encourage entrepreneurship and innovation