

Conclusion

This White Paper reviewed the circumstances around science and technology in the 20 years since the Science and Technology Basic Law was enacted in 1995. During this period, the socioeconomic situations in Japan and the world situation dramatically has been changed and Japan have experienced the sluggish economic growth and deflation as well as an ongoing aging society and declining birthrate. Internationally, China and other emerging nations achieved significant economic growth and dramatically bolstered their global presence. Development of telecommunication technology has contributed to globalization by eliminating the physical distance among nations. Information is exchanged instantaneously and globally shared. The value of Information has been growing and the quality and quantity of information decisively affect various activities. It may be no exaggeration to say that science and technology have supported Japan and the world and contributed the development of mankind during this period, though events such as the Great East Japan Earthquake and research misconduct have lowered people's trust in science and technology.

Science and technology policies over 20 years, including increases in national R&D investment, the development of human resources in areas of science and technology, support of basic research and reform of science and technology systems, according to the Science and Technology Basic Plan, have undoubtedly strengthened the scientific and technological competitiveness of Japan. Conversely, remaining issues include e.g. the failure to construct a system which optimally utilizes the ability of young researchers, maximizing the research capability of universities and R&D institutes and accelerating the creation of knowledge through industry-academia collaboration.

Global intellectual competition has intensified and nations are focused on reinforcing domestic science and technology as a source of innovation. At the same time, these nations have striven to act against global warming by leveraging international cooperation to achieve sustainable development of the Earth based on science and technology. As there is no need to citing obvious examples such as telecommunication technology and life science, the 21st century is defined by science and technology and lives of people and the society will be dramatically transformed. The importance of science, technology and innovation must be emphasized for Japan as a nation ripe for innovation and with its contribution to global development appreciated.

The development of science and technology is not accomplished in a short period of time. Such development will come following the long-term efforts of stakeholders, including the government, researchers, education and research facilities and industry based on a platform constructed by the culture, tradition, education and economic strength of the nation. The cultivation of the human resources which is needed to support science and technology innovation is not to be done in a day. Although the year 2030, as forecast in this White Paper, seems relatively far off, young people today will support the society and economy in 2030, which highlights the need for educational reform with immediate effect.

The 5th S&T Basic Plan is currently being discussed, mainly by the Council for Science, Technology and Innovation. The discussion needs to clarify the future image of Japan comprehensively from various points of view, such as validating and specifying the issues about the 20 years of the S&T Basic Plans, as well as the future direction of Japan and socioeconomic issues to be tackled. Flexibility to leverage the national

strengths and to overcome the national weakness is required to improve science, technology and innovation in Japan.

Public understanding and trust are indispensable for improving science, technology and innovation in Japan. Citizen in every area and on every level shall seriously discuss the future science, technology and innovation to overcome the severe circumstances which Japan currently faces, such as an aging society with a declining birthrate, population decline, depopulation in rural areas and the potential for major natural disasters. It is hoped that this White Paper will serve as the starting point of the discussion.