

## **EMERGING TECHNOLOGIES IN JAPAN**

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Japan has been at the forefront of research and development in emerging technologies such as artificial intelligence, robotics, and quantum computing. These technologies have the potential to transform a range of industries and change the way we live and work.

Japan has been investing heavily in *artificial intelligence* (further – AI) research and development, with the government providing funding for a range of projects in areas such as natural language processing, computer vision, and machine learning. Companies such as Sony, Fujitsu, and Hitachi are also developing AI systems for a range of applications, including healthcare, manufacturing, and finance.

Japan has long been a leader in *robotics* research and development, with a range of innovative humanoid robots developed by companies such as Honda and Softbank Robotics. In recent years, there has been a growing focus on developing robots for use in healthcare and eldercare, with companies such as Cyberdyne developing exoskeletons that can help people with disabilities or mobility issues.

Japan has also been investing in research and development in *quantum computing*, with the goal of developing a practical quantum computer that can solve complex problems that are beyond the capabilities of traditional computers. In 2017, the Japanese government launched the Quantum Innovation Initiative Consortium, a public-private partnership aimed at advancing research in quantum computing and developing practical applications for the technology [1].

Despite its long history of scientific and technological innovation, Japan faces a range of challenges in maintaining its position as a global leader in science and technology. One of the key challenges is aging population, which is expected to have a major impact on the country's workforce and economy in the coming years. Another challenge is increasing competition from other countries, particularly China and South Korea, which have been investing heavily in research and development in recent years. In order to remain competitive, Japan will need to continue investing in emerging technologies and fostering collaboration between industry, academia, and government [2].

Japan has a rich history of scientific and technological innovation, and has made major contributions to the world in fields such as electronics, automotive manufacturing, and robotics. The Japanese government has played a key role in promoting scientific research and development, with a range of policies and institutions designed to support innovations.

In recent years, Japan has also been investing heavily in emerging technologies. Japanese technological community is well-positioned to continue making important contributions to the world, and to drive the country's economic growth and prosperity in the years to come. However, the country faces a range of challenges and it will need to continue investing in research and development and fostering collaboration in order to remain competitive in the years to come.

## References

1. Ministry of Economy, Trade and Industry [Electronic resource]. – Mode of access: <https://www.meti.go.jp/english/index.html>. – Date of access: 15.04.2023.
2. Arai, K. Japan's innovation ecosystem: key players, trends, and challenges / K. Arai // *Asian Economic Policy Review*. – 2018. – No. 13(2). – P. 218–236.