

Building a safer world: the role of technology policy

Interview with Yuka Koshino



Yuka Koshino is a Research Fellow for Security and Technology Policy at the International Institute for Strategic Studies (IISS), where she conducts independent research on the security implications of emerging technologies from defense and geo-economic perspectives. She is the co-author of *Japan's Effectiveness as a Geo-Economic Actor: Navigating Great-Power Competition* (Routledge, 2022). Previously, she was affiliated with the Asia-Pacific Initiative in Tokyo as inaugural Matsumoto-Samata Fellow (2020-2021).

Prior to joining IISS, Yuka was a Research Associate with the Japan Chair at the Center for Strategic and International Studies. She also has experience providing policy and economic analysis on Asia's high-tech and defense industries at the Avascent Group and the Asia Group in Washington DC. Previously, she reported and published news on Japanese political, economic and business affairs at the Tokyo bureau of the *Wall Street Journal*, *The Economist* and *The Japan Times*. She holds a Master's in Asian Studies from the Edmund A. Walsh School of Foreign Service at Georgetown University and a BA in Law from Keio University.

Question 1: What are the technology policy challenges for Japan?

Technology has become the center of U.S.-China strategic competition in recent years, as critical and emerging technologies driving growth and innovation, such as artificial intelligence, big data, robotics, quantum science, and synthetic biology, are essentially dual-use (for commercial and military purposes). As the United States' closest regional ally facing China's security challenges on the front lines, Japan was one of the first countries to follow the United States in introducing measures to protect and promote critical and emerging technologies to ensure economic and military competitiveness *vis-à-vis* China. Early efforts

included tightening investment reviews and effectively banning Chinese technologies from the country's 5G wireless telecommunications infrastructure in 2019. Tokyo has also actively sought cooperation with like-minded partners to improve supply chain resilience for critical technologies, such as 5G and advanced semiconductors, and expanded R&D funding to boost domestic technological capabilities in these areas.

The Kishida administration's enactment of the Economic Security Promotion Law in May 2022 was a milestone for Japan in establishing its framework for addressing economic issues relevant to national security, with a strong focus on the control and development of critical and emerging technologies. The protection and promotion of critical and emerging technologies were at the heart of this framework, such as the introduction of a patent secrecy system and a new mechanism to promote public-private R&D in AI and quantum technologies.

While these are important steps forward, particularly on the technology protection side, several challenges remain. First is the enduring post-war legacy of civil-military fragmentation within the bureaucracy and society, which challenges dual-use technology policy-making and restricts the flow of funding and talent between the defense and commercial sectors. Second, the lack of a national security clearance system for Japanese industries and academic institutions working in sensitive technology areas, which has prevented them from participating in joint R&D programs with like-minded partners. Third, the declining international competitiveness of Japanese talent in key critical and emerging technology areas. This could undermine Japan's ability to lead international standard-setting and norm-building efforts. Japan's 2022 National Security Strategy addresses these challenges, but it will require strong and sustained political leadership to overcome these organizational, cultural, and structural hurdles.

Question 2: Is decoupling from China on sensitive technologies feasible for Asian democracies?

China is deeply embedded in the regional and global economy and is the largest trade partner for most countries in the region. Therefore, decoupling would be very difficult, even for countries with security concerns regarding the PRC. In fact, in the field of digital technologies, Chinese high-tech companies and research institutions have rapidly strengthened its technological capabilities and global presence through massive government subsidies. Network equipment providers such as Huawei and ZTE have become the world's largest providers of 5G networks. IT platform service providers have expanded their global user bases in their e-commerce and social networking applications.

U.S. and U.K. intelligence officials have openly expressed concerns about the security risks associated with these products, such as the potential for Chinese authorities to access personal information and, in the case of Tik Tok, to use the algorithms to spread misinformation. However, given the cost-effectiveness of Chinese technologies, Asian governments prioritizing rapid economic growth face the difficult task of balancing national security and economic interests.

While decoupling is not a viable approach, countries have taken steps to reduce reliance on Chinese technology and manage the security risks involved through economic security measures such as vetting critical infrastructure operators and foreign investments. Like-minded countries, such as the United States and Japan, have also been closely coordinating on infrastructure financing, educating partners on the security risks of using Chinese technologies, and 5G R&D projects to develop alternative options to make the region's digital infrastructure more secure and reliable.

“While decoupling is not a viable approach, countries have taken steps to reduce reliance on Chinese technology and manage the security risks involved through economic security measures such as vetting critical infrastructure operators and foreign investments.”

Question 3: How could Japan and European countries (including the United Kingdom) better cooperate to improve the security of sensitive technologies?

In recent years, Japan and European countries have each introduced and refined policy tools to reduce the security risks of critical infrastructures and the leakage of critical and emerging technologies, especially digital ones.

Examples include the introduction of investment screening, efforts to improve supply chain resilience, and robust R&D programs to strengthen the national and regional technology base of critical and emerging technologies, such as 5G, semiconductors, and cloud computing.

In recent years, Japan and European countries have begun to coordinate their approaches to these so-called economic security issues, both bilaterally and multilaterally at all levels. In particular, the signing of new cooperation mechanisms, such as the Japan-EU Digital Partnership in May 2022 and the UK-Japan Digital Partnership in December 2022, are likely to serve as important platforms for information sharing and policy coordination in areas such as enhancing supply chain resilience for 5G and beyond, standard setting for digital technologies, safe and ethical applications of artificial intelligence, and rule-making for the digital economy.

Now that the mechanisms and dialogues are in place, there are several key areas where the two sides could work together to make their approaches effective. First, the two sides could enhance information sharing on lessons learned from their respective approaches. Given that these countries have only recently strengthened investment reviews, sharing information on cases of attacks against the systems and early challenges would help improve the systems to enhance their functionality and effectiveness. The two sides could also share best practices in addressing common challenges to gain the understanding and cooperation of the private sector in achieving its economic security goals. Second, the two sides could explore ways to work together to improve supply chain resilience while avoiding a subsidy war. They could also work together to create a resilient semiconductor supply chain based on their respective strengths. In the area of financing digital infrastructure in the Indo-Pacific, the EU's Global Gateway has synergies with the goals of Japan, the United States,

and Australia's Free and Open Indo-Pacific vision to promote a secure and reliable digital infrastructure in the region. Increased coordination of their approaches could avoid duplication and complement each other's projects to make efficient and effective use of their resources.

February 2023

