



Strategies for Submarine Cable Networks in the Indo-Pacific

Abstract

On Friday March 11, 2022, the US-Japan NEXT Alliance Initiative, in collaboration with the Mitsubishi Research Institute and Keio University, convened a private hybrid minilateral submarine cable strategy dialogue for a group of academics and private sector representatives, along with officials from the Japanese, Australian, British, and American governments. The event addressed questions on risk mitigation for submarine cable networks, financing and the development of important emerging technologies and strategies for the Indo-Pacific region. Japan's Ministry of Internal Affairs and Communications also contributed to the meeting's organization.

Presentations

A Japanese official at the meeting highlighted early on that as digital infrastructure becomes more integral to daily life, it must be remembered that submarine cables account for almost all global

communications. It is important to gather like-minded countries to ensure collective security for the submarine cable infrastructure across the world. This forum aimed to contribute to secure telecommunications and infrastructure for all nations.

The first presentation, by a Japanese industry representative, focused on the status of global communications via submarine cables. He began by noting two major natural disasters that caused significant sub cable infrastructure damage in the past: the volcanic eruption in Tonga earlier in 2021 and the March 2011 Tohoku Earthquake and Tsunami Disaster. Both events impacted communications to and from the affected regions for weeks, and in Japan's case for up to three months. In addition to the need for protecting sub cables against natural disasters, there are many cables in need of replacement due to age, as well as calls for an increase in cables particularly in the southern hemisphere. The presenter noted areas of the world experiencing a growth in installed capacity include Palau, Hong Kong, and Taiwan. He added that the rise in prices for fuel could slow the development of sub cable networks.

The next presenter, an American industry representative, provided a status update about undersea cable supply. He began by noting that global factories were generally keeping up with demand in an effort to eliminate existing bottlenecks around certain types of cables, but supply is tight. Regarding construction and maintenance, the presenter noted that the sub cable fleet has increased only marginally, and vessels intended for maintenance are likely to be repurposed for construction needs. He mentioned that a lack of spare cables was a problem following the volcanic eruption in Tonga, delaying cable repair significantly. He also noted that supply chain issues were a cause for concern as the increasing price of raw materials and shortage of primary system components was slowing down new production. He closed by saying that the industry remains stable, but competition from the oil and gas industry and wind farm development could draw away needed resources.

The next presentation by a Japanese scholar described China's digital silk road and its strategic expansion of submarine cables. He said that China's new sub cable drive is part of its broader belt and road initiative and its effort to expand international influence using tools such as infrastructure and smart city development. China's goal is to strengthen national power through economic growth, military modernization, and reshaping global rules to favor its interests. The tools of this effort are information and communications technology, to increase dependence on China's economic and technology being the end game.

The presenter laid out three stages of “dual circulation” that would increase global dependency on China. The first phase is domestic, which includes supporting technological development and industry protections. The second phase involves internationalizing China’s technologies through overseas development, tech standardization, and increased trade dependence. The third phase is a return on investments that supports further influencing other countries and future rulemaking. In this case, “return on investments” entails operational and maintenance contracts, collecting patent fees, and maintaining cutting edge technology by leading the process of standardization.

The current and planned sub cable laydown shows China’s overall strategy. That is, to expand terrestrial and submarine cables in conjunction with economic corridors by building a robust network in the Pacific region and combine military and civilian communication infrastructure. Another example is a 37 million USD investment for China Pakistan optic fiber and road development. This allows China to connect with Djibouti, for example, where its first overseas PLA base is located.

The final presenter, an American official, discussed US perspectives on submarine cables. She began by emphasizing the vital nature of international fiber optic undersea cables to communication and technology, forming the backbone of digital economy.

The extent to which undersea cables connect the world became more apparent with the Tonga disaster. Demand for bandwidth overall grew by 53% between 2014-18 in Asia, and there was also growth and implementation of 5G networks along with increase in data flow boosted further by the pandemic. The Biden/Harris administration has not only recognized but incorporated this growth into their foreign policy, evident in the Indo-Pacific strategy released in February 2022.

She described a new American push to foster a secure and trustworthy digital infrastructure that would create a shared resilience in critical government and infrastructure networks along with allies and partners. For the sake of national and economic security as 5G and next generation telecommunications networks develop, increased security for submarine cable networks is important. Sub cables are vulnerable and can lead to great economic loss due to natural disasters and cyber-attacks. Furthermore, suppliers, operators, and maintenance for the components of the sub cables should be from trusted sources to maximize reliability. Trust is difficult to create when vendors and suppliers of telecom infrastructure and its related services are subjected to control by authoritarian governments. The presenter closed with a final note that countries with trusted cable

systems will remain more attractive for investors, and she mentioned that the United States is committed to working internationally to help promote security of undersea cables and has already engaged with Japan, Australia, and others on this front.

Discussion

In the discussion section of the event there were two prevalent themes raised by the participants. The first theme concerned financing, more specifically, how the growing demand for higher quality and greater quantity submarine cables could be met by the international community. The second theme concerned the relationship between multinational governments partnering with the private sector to meet the great task of providing adequate maintenance to existing cables, providing security for them as critical infrastructure and expanding the number of cables over time.

Concerning financing, one participant suggested that greater flexibility will be required when pursuing projects. For example, Japan's Bank for International Cooperation was able to provide sub cable financing to Palau in 2021 together with the U.S. and Australia, but various hurdles had to be overcome due to differences in business models and operational structures of the three financing institutions. Furthermore, in the case of projects with poor economic feasibility, either due to the scale of the project or because it serves a less developed market, broader geopolitical or development aid criteria could be weighed to provide a longer time horizon for evaluating "bankable projects." In this case, blending finances within and among government agencies and international financial institutions could make the project work.

Projects could also benefit from more flexibility in adding private funding sources to government-backed initiatives. An Australian representative noted that oftentimes the government is hesitant to interfere with the funding process as they don't want to hinder private sector investment. He noted that "there has been government involvement in financing the cables like Palau, East Micronesia and the main echo cable [U.S.-]financed portion. A lot of these projects are funded by the private sector, and government is wary to crowd out the private sector investments." He continued by raising a question to the private sector on how the government can be more helpful in the development process and what they can do to make cables more diverse and resilient. An American private sector representative responded by proposing greater transparency with information and a less "us versus them" (or regulator versus regulated) mentality would improve the situation greatly.

Building on this last point, the second major theme of the discussion concerned the relationship between the government and private sector. Several participants noted that in the development or upkeep of submarine cables, there needs to be greater dialogue between governments and the firms facilitating the project. One example was a proposition by the government of Chile to lay a cable that would connect South America to Asia, as the southern Pacific is greatly lacking in connectivity unlike its northern neighbors. That proposal has sufficient financial interest, but a lack of government consensus on potential security concerns is slowing project momentum. Another point was raised regarding the policy making community and how there were repeat problems in government when the execution of certain projects was underway. A participant noted that there are many areas of opportunity for the government and private sector to collaborate in this venture, however, various agencies in the U.S. treated firms as objects of regulation, rather than as partners. A participant noted that in the case of the Palau submarine cable, the trilateral effort (U.S., Australia, Japan) was assisted by a private Japanese firm.

A Japanese participant commented that timing is greatly important to sub cable development efforts, and obtaining permission to proceed with a project is unpredictable and often takes too long. Industry is often unsure of what is a viable permitting timeline. He requested that the like-minded countries work more closely together to make the process more efficient and predictable.

With regard to other opportunities to improve public-private collaboration for sub cable resilience, an American industry expert said “often we see government policies that crowd the routes where cables land, intentionally or not. Policy makers should consider how to increase diversity as one disaster, man-made or otherwise is going to damage multiple cables.” He added a final point about arguments for the use of encryption in sub cable operations, suggesting “policy makers should recognize that encryption is a good tool in mitigating other risks even if there is unauthorized access with infrastructure or facilities.”

Some government representatives noted that a viable industry for sub cable is important for all and that government did not want to overburden the private sector with excessive regulation or government intervention. However, it is important to note that until recently, cables were driven solely by the market. Now, heightened political tension in the world has complicated the equation. Understanding has grown that sub cables are critical infrastructure especially for island countries and especially during the pandemic when the world leaned heavily on its distance communications.

One Japanese participant remarked that commercial actors need public support to control things like geopolitical risk, even in some developed countries. Expanding on this, an American participant commented that government can improve its sharing of risk information and increasing dialogue with operators.

NEXT Steps

At the conclusion of the event, Sasakawa USA Senior Director Jim Schoff expressed thanks to the panelists and added that the NEXT Alliance Initiative is prepared to facilitate and support the U.S.-Japan alliance in this area with continued dialogue and research. Next steps could involve additional roundtables focused in more detail on each of the main topics of discussion (i.e., financing and public-private partnerships).

As digital infrastructure grows in importance, it is essential that more attention is directed towards the maintenance of submarine cables and its support network. While the origin of this current sub cable information sharing initiative was led by the U.S. and Japan, it has grown into a truly multilateral effort. New submarine cable hubs in Hong Kong, Taiwan and the Philippines will require greater attention, information sharing and multilateral capacity building. This information sharing and strategy building initiative will continue contributing to bilateral and multilateral dialogue.

The US-Japan NEXT Alliance Initiative is a forum for bilateral dialogue, networking, and the development of joint recommendations involving a wide range of policy and technical specialists (in and out of government) to stimulate new alliance connections across foreign, security, and technology policy areas. Established by the Nippon Foundation and administered by Sasakawa Peace Foundation USA, the goal is to help improve the alliance and how it serves shared interests, preparing it for emerging challenges within an increasingly complex and dynamic geostrategic environment. Launched in 2021, the Initiative includes two overlapping lines of effort: 1) Foreign & Security Policy, and 2) Technology & Innovation Connections. The Initiative is led by Sr. Director Jim Schoff.
