

The hidden technological battleground: Asia becoming a global hub for undersea interconnectivity





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The hidden technological battleground

Undersea cables - critical global communications channel

The rise of global connectivity, colocation services, accelerating digitization, the growth of AI data centers and hyperscalers means that undersea cables are a vital cog in the global interconnectivity engine. They carry extremely high volumes of traffic, at speed, and are becoming the new battleground for digital connectivity. They are essential arteries for international communication and are indispensable for commercial prosperity. Essentially, undersea cables represent a critical global communications channel.

According to TeleGeography, for example, undersea cables carry over 99% of intercontinental data traffic – although this figure is difficult to accurately measure¹. They are used to transmit internet traffic, financial transactions, and military and government communications around the world, and have become the backbone of the digital economy.

Modern submarine cables use fiber-optic technology with lasers on one end that fire data at extremely fast rates to receptors at the other end of the cable. Where these cables meet land is called a landing station (which again are highly protected and sometimes secret). Modern cables can carry up to \$8 trillion in financial transactions every day².

As a result, the optic fibers are wrapped in layers of plastic (and sometimes steel wire) for protection against sabotage or accidental damage. Strategic sabotage can affect entire regions, impacting internet traffic, communications, financial transactions, and trade.

These cables were traditionally owned by telecom carriers, who would form consortiums to lay them, but has become too costly for most. Now, content providers, such as Google, Meta, Microsoft, and Amazon, are the major investors in cables. Similarly, a few decades ago, these cables were laid centimeters under the seabed.

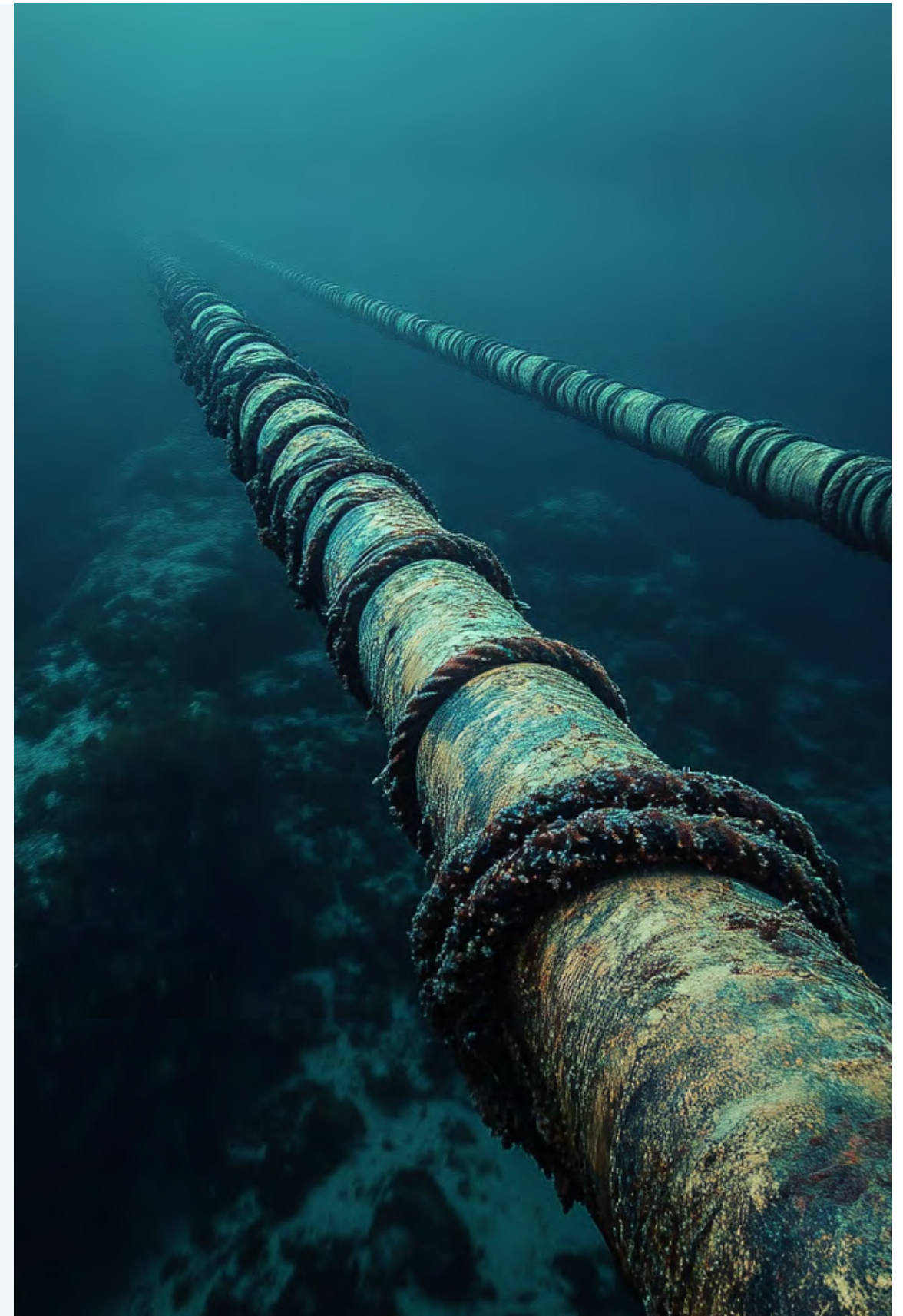


Today, they are typically buried several meters for protective purposes – however, this increases the cost and time of laying undersea cables. They can also cover thousands of kilometers – which increases vulnerability, as they traverse routes that may be exposed and hard to police.

The amount of data they can carry is also growing significantly. For example, the Southeast Asia-Japan cable built in 2013 could carry 28 Tbps of data, while Meta and Google's Apricot cable, set for launch this year, has an initial design capacity of over 190 Tbps. The new MAREA cable, which runs between northern Spain and North America, has an initial capacity of 224 Tbps. Between 2023 and 2025, investment in undersea cables is projected to reach a record high of \$10 billion, bringing an estimated 78 systems online covering over 300,000km – this represents the fastest growth in over 20 years³. Geography also plays an important role. For example, the Ring of Fire in the South Pacific is a tectonic belt that spans fault lines and volcanoes, which makes undersea cables vulnerable to damage. So, circuits are generally rerouted around vulnerable locations, which increases the cost and time associated with laying submarine cables. Then there is the consideration of maintenance and repair of cables, which is estimated to be in the range of \$1million to \$3 million for each cable and takes an average of 40 days, as of 2023⁴.

Undersea cables now have significant geopolitical and technological importance, with many governments becoming increasingly aware of the need to invest in, grow, and protect critical undersea cable networks.

In addition to natural disasters and the general deterioration of older cables, there is regular accidental damage caused to them by dredgers and deep-sea fishing vessels. However, of graver concern, there have been several reported incidents over the last few years of deliberate sabotage.



For example, in April 2024 there was an the alleged cutting of the two internet cables that connect Matsu Island to Taiwan by a Chinese fishing vessel⁵, and in October 2023 a joint investigation by Finland and Estonia found an anchor on the seabed from the Chinese ship Newnew Polar Bear that had damaged two telecoms cables and a gas pipeline, which the investigation suggested could only have been caused by deliberate sabotage – the dragging of an anchor over 100 km⁶.

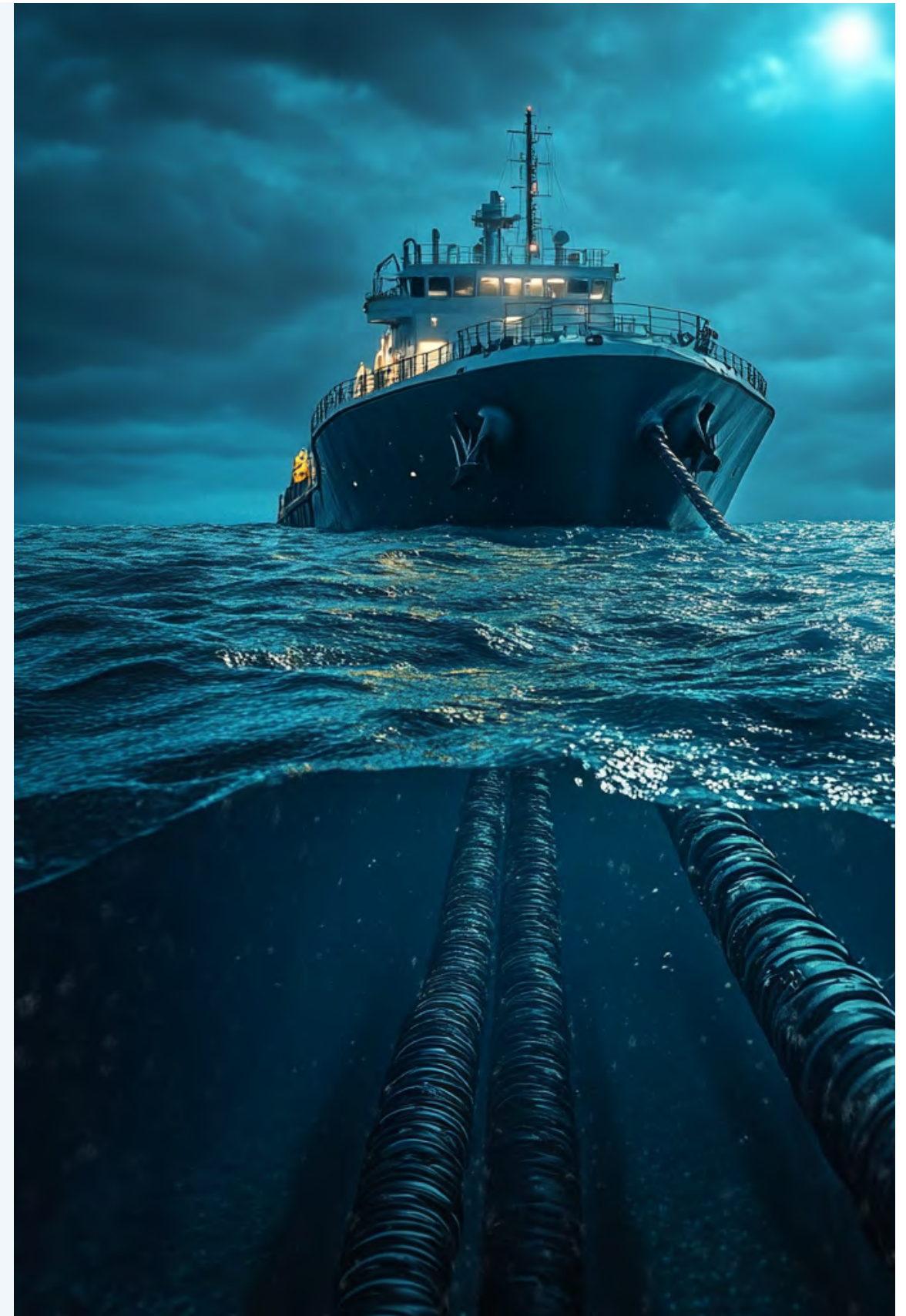
In March 2024, meanwhile, Houthi rebels were also alleged to have affected an estimated 25% of internet traffic between Asia, Europe and the Middle East after four cables were cut in the Red Sea⁷.

These incidents highlight how undersea cables are becoming a non-military battleground in global trade and data exchange. Put simply, the laying and maintenance of undersea cables has become a genuine geopolitical concern.

As a result, governments around the world are increasingly aware of the threat to undersea cables and many are introducing strategies and legislation to protect them and the data they carry. This is particularly pertinent in Southeast Asia, as governments rush to build AI data centers for colocation purposes and build out 5G infrastructure in a bid to place themselves as players in the global digital economy.

At the same time, many countries in the region are having to route new cables around areas in the disputed South China Sea. Many cable-laying companies are concerned at Beijing's reaction to new cables being laid in the region. In turn, these reroutes that avoid the disputed region of the South China Sea are increasing the cost and time taken to lay undersea cables. It is also one of the busiest shipping lanes in Asia, which increases the risk of damage to cables.

This paper will focus on the geopolitical and technological aspects of fiber-optic subsea cables in Asia.



Global overview of undersea cables

Undersea fiber-optic cables offer high data capacities and relatively low latency (compared to international satellite communications) around the world, making them a vital component of the global digital economy. As a result, they are becoming a geopolitical hotbed of activity.

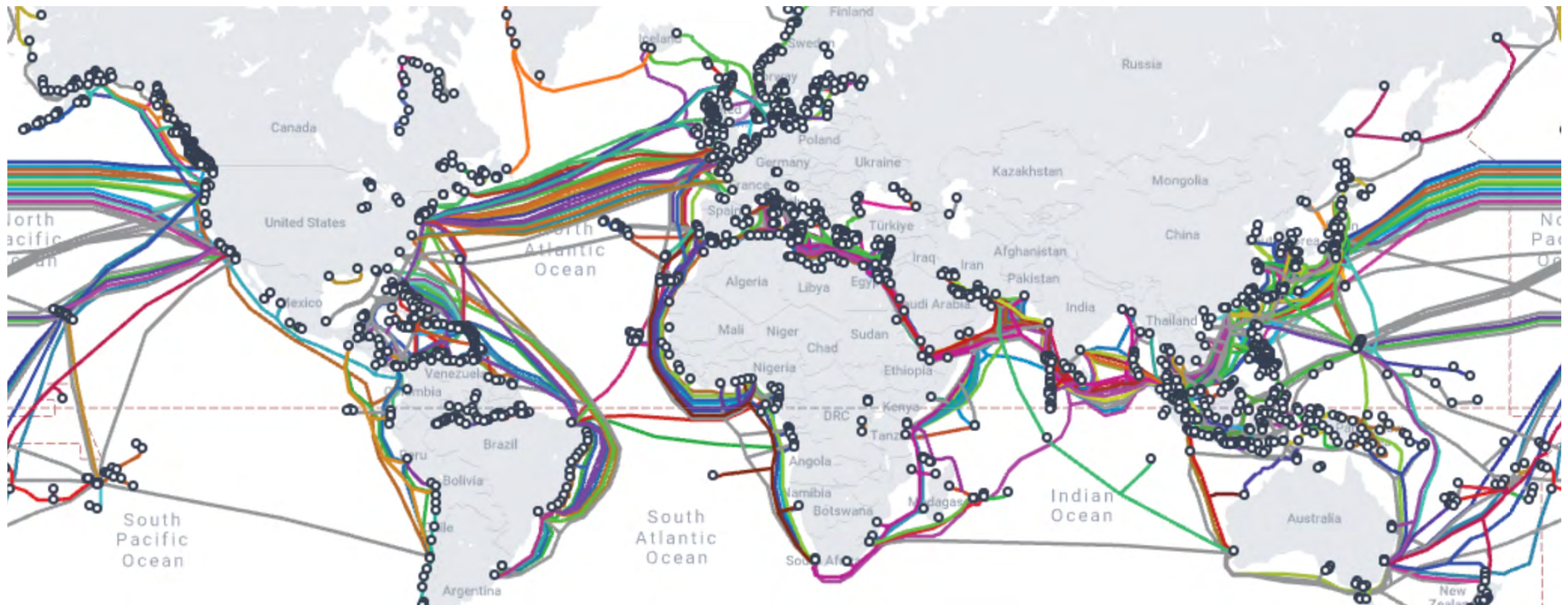
According to TeleGeography, for example, the number of undersea cables hit a new milestone recently, with over 600 cable systems as of September 2024 – 532 in-service systems, with another 77 planned⁸. It suggests that they carry around 99% of all intercontinental data traffic, including the U.S. For comparison, satellite communications carry an estimated 0.37% of U.S. international data traffic – although accurate data is hard to come by, it does highlight the importance of this undersea labyrinth of data cables⁹.

Figure 1 shows TeleGeography's interactive map of global undersea cables¹⁰. The map only covers known undersea cables, and there may be more that traverse sensitive areas or are used for military purposes, for example, and so are not made public. Each cable system is customized to suit its location and purpose, and most have multiple branches and sub-branches as they snake their way over thousands of kilometers under the seabed interconnecting entire continents.

The largest submarine cable network is the recently deployed 2Africa, which interconnects 33 countries in Africa, Europe, and the Middle East with 45,000 km of cable (also making it the longest in the world and long enough to circumvent the Earth's diameter). It can carry 180 Tbps of data across 16 fiber pairs using spatial division multiplexing – one of the first to use this technology.

It overtakes the Singtel-administered SEA-ME We3 (Southeast Asia - Middle East - Western Europe 3) network, which connects 39 countries between Europe and Asia over 39,000 km – from Cornwall to Perth – via the Middle East.





There are a number of important hubs where subsea cable landing sites lie – the U.S. (around New York on the east coast and around California on the west coast), Egypt (which has an extensive coastline on both the Mediterranean and the Red Sea and connects Europe and the Middle East and Asia), Marseilles in France, Singapore in Southeast Asia (due to its strategic geographic position and its role as a global financial and trade hub), and Japan (which bridges Asia with the western coasts of the Americas).

There are only four major companies in the world that manufacture and lay subsea cables, making it a relatively restricted industry: SubCom (the U.S.), NEC Corporation (Japan), and Alcatel Submarine Networks (the French government purchased an 80% stake in the company in June 2024 for \$375 million, highlighting the growing

geopolitical significance of undersea cables around the world). These three collectively hold an 87% market share, with China's HMN Technologies, formerly known as Huawei Marine Networks and incorporated in 2008, holding a further 11%¹¹.

But there is also a broader ecosystem of vendors, undersea cable owners and operators, investors, integrated suppliers, suppliers without a fleet, content providers, owners of installation and repair vessels, and undersea cable maintenance companies.

Four main content providers – Amazon, Google, Meta, and Microsoft – have invested heavily in undersea cables, as they look to expand their cloud computing, AI, and colocation services.

Asia's undersea cable network

There is booming demand for more undersea cables throughout Asia, as governments look to position their countries in the region as players in the global digital economy, which embraces the development and construction of AI data centers, hyperscalers, and 5G and 6G network infrastructure, as well as an extensive subsea cable system that interconnects them with the rest of the world. As a result, the region is seeing significant investment from Western companies and rapid expansion of its submarine cable networks.

As an upward digital economy, one of the fastest growing, and with a young “early-adopter” population, Southeast Asia is enjoying a booming period in terms of rapid digitization. The bedrock for this is the undersea cables that carry the huge amount of data generated by a large population and link it with the rest of the world.

Of course, the South China Sea has become a focus for tensions between the U.S., China, and Taiwan. But Japan, Australia, Indonesia, and other countries in Southeast Asia are also concerned about China's hostile posturing in the region. In addition, global trade sanctions on China and heightened military tensions in the region mean that China currently only has plans to add three more undersea cables (compare this, for example, to Vietnam's plans to lay 10 more cables before 2030). In turn, this could also restrict China's data center and colocation capabilities.

China has laid 15 new submarine cables since 1994, with China Mobile and other state-owned telecoms providers often taking part in joint investments with U.S. companies. However, more recent trade tensions have led to Washington blocking many trans-Pacific projects through its Clean Network initiative introduced by the first Trump administration.

For example, in 2020 Washington blocked Google's and Meta's plan to lay a cable joining Los Angeles and Hong Kong.



The cable went ahead but avoided China and instead connected Los Angeles with Taiwan and the Philippines. The World Bank also aligned with the U.S. policy when a subsea cable connecting the South Pacific region excluded Chinese investment and involvement.

U.S. and European companies are keen to expand in the broader region. For example, in April, Google announced its \$1 billion investment in two new subsea cables that will join Japan, Guam, and Hawaii. There are also plans beyond 2024 for four new cables from the U.S. to Japan, and seven to Singapore.

U.S. technology companies have been involved in the laying of 48% of Southeast Asia's subsea cable projects between 2021 and 2025, which is 5% higher than the previous five years¹³. U.S. interest in subsea cable system projects in the region is still strong, but aimed at excluding China and Chinese businesses.

While China's dominance in the region, having laid 15 new cables since 1994, appears to be dwindling, it is using its military and territorial claims over disputed South China Sea regions, including its construction of military bases (some of which are connected by submarine cables) in the broader Pacific Ocean.

Under United Nations conventions, cable companies only require permission from countries to lay on faults in territorial waters – which according to the U.N. only extend 12 miles off the coast of each territory and can include the 200-km exclusive economic zone (EEZ) of each country. In many cases, cable laying and maintenance companies apply for permits from multiple countries as territories overlap.

However, many of these companies have become concerned about Chinese aggression in the South China Sea. China's "10-dash line" is not recognized in international law, but undersea cable companies are worried to enter the region in case of repercussions.



Companies will ask for Chinese authorization, despite Beijing's disputed claims in the waters.

But, recently, China has tended to significantly delay requests for permits, particularly within its 200-km EEZ, making cable laying and maintenance in disputed waters in the region an onerous and challenging task. TeleGeography asserts that routine maintenance and repair of systems in the South China Sea are taking more than two months to fix.

It means that undersea cable investors are starting to avoid laying cables in the central South China Sea, which is pushing up prices and putting off investors as cable networks seek more circuitous and complex alternative routes through the region. In 2023, Vietnam's five international cables were damaged, and it took eight months to repair them.

Meanwhile, the Southeast Asia-Japan 2 (SJC2) designed to connect 11 landing stations between Singapore and Japan, using cables made by Japan's NEC and backed by a consortium made up of U.S. and Chinese companies, is more than four years overdue, with reports suggesting this is solely down to delays in Chinese permits. Conversely, two Chinese-only led cable systems traversing the South China Sea, built by HMN Technologies, are proceeding fine and expected to come online in 2025.



Undersea cable networks in Asia, country by country

China

China dominates the region in terms of controlling cable laying and maintenance in the disputed territorial waters of the South China Sea. However, despite its strategy to promote digitization and technological dominance through its Digital Silk Road initiative launched in 2005 – which contains a plan to capture 60% of the global fiber optic market – it only has plans to lay three new subsea cables after 2024.

This is due to near-global concerns over espionage, cybersecurity, and sabotage, which in many recent cases has led to the exclusion of Chinese entities from new subsea cable projects in the region.

Washington, in particular, has lobbied hard for countries in the region to not use HMN Technologies. The U.S. argument is that the other three major players (from the U.S., France, and Japan) are more experienced and have been operating for many decades, compared to HMN's relatively new 2008 incorporation. Of course, the U.S. is more concerned about the potential for Chinese access to personal data, as well as the Chinese military's ability to monitor non-Chinese submarine activities, in the region.

However, HMN Tech is one of the fastest growing subsea cable providers and owners in the region, providing 18% of global cable kilometers in the last four years¹³. In 2022, the U.S. blocked HMN Tech's involvement in building the See-Me-We 6 cable – a 19,000km line connecting South-East Asia to Europe (see [Pamir blog here](#)). Through a series of incentives, Washington was able to agree a tender with SubCom for the cable, despite HMN's bid being significantly lower. SubCom is the U.S. Government's vendor of choice for undersea cable projects.

HMN Tech is China's main tool in terms of increasing its undersea cable network, which is an important part of its Digital Silk Road strategy.



But HMN Tech is essentially on the U.S. “high risk” vendor list and is considered by Washington to be a subsidiary of Huawei, despite claims from the company that it operates independently.

In response to Washington’s exclusion of HMN from the See-Me-We 6 project, in April 2024, China’s three main telecom firms – China Telecommunications Corporation (China Telecom), China Mobile Limited, and China United Network Communications Group Co Ltd. (China Unicom) – announced plans for the new EMA (Europe-Middle East-Asia) \$500 million undersea fiber-optic internet cable network that will link Asia, the Middle East and Europe, interconnecting Hong Kong to Hainan (a Chinese island province) to Singapore, Pakistan, Saudi Arabia, Egypt and France (see blog [“The protection and democratization of undersea communications networks”](#)).

With multiple branches along the route there has also been concern around a global bifurcation of the internet, whereby countries en route would have to choose between Chinese and U.S. cable variants, with clear concerns about China’s history of censorship of Western internet sites along its route.

In September 2024, concerns were also raised at a U.N. General Assembly meeting by Australia, France, Japan, Singapore, South Korea, Vietnam, the U.S., the U.K., and others, about the security of undersea cables in the South China Sea, and the risk of intentional damage and espionage.

China’s territorial claims in the South China Sea also mean that non-Chinese undersea cable network providers are starting to plan to circumnavigate the central area of the waterway that is claimed by China. Beijing is also starting to delay – sometimes for up to four months (when before they would take 10 days) – its approval of permits for repairing or laying new cables in the disputed region of the sea. Hence, private cable laying and maintenance organizations and vessels may avoid the region.



PEACE, China's current longest and most important subsea cable – built by HMN Tech and went online in 2022 – links Asia, Middle East, Africa and Europe over 25,000 km. Over 20 cables have been deployed or are scheduled to be in Asia between 2021 and 2026 – China will only account for three of these¹⁴.

China has been alleged to have caused deliberate sabotage to submarine cables in recent years. For example, in 2023, Taiwanese authorities accused two Chinese vessels of cutting the connection between Taiwan and its Matsu Islands, which caused digital isolation for Matsu's population for six weeks.

The Taiwanese government claims that Chinese vessels have caused 27 disruptions since 2018.

Likewise, as mentioned above, Finland and Estonia blamed a Chinese vessel for cutting a gas pipeline and two undersea cables in the Baltic Sea in October 2023. The South China Sea – along with the Red Sea – have been identified by governments around the world as potential “chokepoints” and risks to global undersea interconnectivity.

Hong Kong

Hong Kong, as a Chinese territory, links China to the rest of the world. According to TeleGeography, Hong Kong currently operates 10 submarine landing sites, including three cable landing stations at Tseung Kwan O, three at Chung Hom Kok, two at Tong Fuk, and one each at Deep Water Bay and Cape D'Aguilar.

It has multiple significant cable systems linking China with the Middle East and Europe, including:



- Asia Africa Europe-1 (AAE-1)
- Asia-America Gateway Cable System (AAG)
- Asia Pacific Cable Network 2 (APCN-2)
- Asia Pacific Gateway (APG)
- Asia Submarine-Cable Express (ASE)
- EAC-C2C, FLAG Europe Asia (FEA)
- FLAG North Asia Loop (FNAL)
- REACH North Asia Loop (RNAL)
- Hainan to Hong Kong Express (H2HE)
- Sea-Me-We 3 (SMW3) South-East Asia Japan Cable System (SJC)
- TGN-Intra Asia Cable System (TGN-IA)

In recent years, however, the U.S. has withdrawn licenses for several interconnections between it and Hong Kong: Pacific Light Cable Network, Hong Kong – America, Hong Kong - Guam and Bay to Bay Express. However, there are plans for the H2 Cable, which would link Hong Kong with Australia.

South Korea

South Korea has a rich heritage in submarine cables. One of the earliest, built in 1885, connected the Korean city of Busan with Nagasaki in Japan. Its proximity to Japan means that there is significant interconnection between the two countries today.

According to TeleGeography, South Korea currently has 13 subsea cables/landing sites, including the New Cross Pacific (NCP) Cable System (which links China, Taiwan, South Korea, Japan, and the U.S.), which was deployed in 2018, and the Asia Pacific Gateway (APG), which joins Singapore, Thailand, Malaysia, Vietnam, China, Taiwan, South Korea, and Japan.



The city of Busan, located on the southeastern tip of the Korean Peninsula, is a hub for connecting cable landings that connect Asia, Europe, and leading subsea/telecoms companies in the country including KT, SK Broadband, and Sejong – which all have cable landing stations in Busan.

Planned new projects include the Southeast Asia-Japan Cable 2 (SJC2), which follows a similar route to APG and is scheduled to go online in 1Q25, as well as Bridge One, a 300km, super-fast connection between Pohang in South Korea and Itoshima in Japan, which is set to come online in July 2026.

South Korea, like many Asian countries, is seeing a boom in data center growth, with the Greater Seoul area accounting for 77% of the country's data center market, with U.S. companies, including Equinix, IBM, Microsoft, Cisco, Oracle SAP, HP, having invested significantly in data center construction in South Korea¹⁵.

However, it imports 97% of its energy supply, which can raise concerns about its energy resilience and security. But the government is investing heavily in creating its own offshore wind power capabilities, with South Korea's Taihan Cable & Solution signing a MoU with Singapore's 120-vessel MEO Group in October to lay electric wires to transmit this offshore wind energy onto land. South Korea is one of the first countries in the world to launch 5G services and has already set out its so-called K-Network 6G strategy, which it plans to deploy in 2028.

India

India has a rapidly expanding digital economy and a long history of IT expertise and skilled labor, particularly in the software services sector. In turn, it means that it has become an essential hub for undersea cable connectivity, as applications such as 5G, AI, and cloud computing continue to expand rapidly in the country.



By 2025, India plans to deploy three new significant undersea cable systems. In August 2024 it announced plans for 2Africa Pearls, India-Asia-Express (IAX), and India-Europe-Express (IEX), which are estimated to quadruple its existing digital connectivity.

India is already connected globally through several undersea cable systems, including the Southeast Asia-Middle East-Western Europe (SEA-ME-WE) system, which connects Asia with Europe via the Middle East], the Bay of Bengal Gateway (BBG) system, and the India-Middle East-Western Europe (IMEWE) system.

The 2Africa project is significant. It will span 45,000 km, linking Africa, Europe, the Middle East, and Asia. It will be jointly owned by Meta Platforms, China Mobile, MTN Group, Orange S.A., Saudi Telecom Company, Vodafone Group, and West Indian Ocean Cable Company.

India's Reliance Jio, a national telecom service provider, is supporting the IAX and IEX cables, which will contribute more than 200 Tbps each to India's connectivity. The IAX cable will link Mumbai with Southeast Asian cities, including Singapore and Kuala Lumpur (over 16,000 km), while the IEX will connect India to Europe (9,775 km).

India also enjoys a strategic location in the Indian Ocean, and so has significant connectivity with remote islands and regions in the Indo-Pacific region. In February 2023, NTT Global Data Centers announced the landing of its MIST (Malaysia, India, Singapore, Thailand) subsea cable system and landing sites in Mumbai and Chennai. The MIST cable can transmit data at over 200 Tbps.

India has become one of the fastest-growing data center hubs in Asia, with a projected data center market growth of over 15% CAGR between 2022 and 2027. CBRE estimates that the data center market value in the country will rise from \$4.35 billion in 2021 to \$10.09 billion by 2027¹⁶.

It means that India has a strong incentive to expand its undersea cable interconnectivity system. Government initiatives, such as



its Draft Data Centre Policy in 2020 and the Digital Personal Data Protection Act (DPDPA) in 2023, mean that India is investing significantly in its digital infrastructure, and will continue to do so for the foreseeable future.

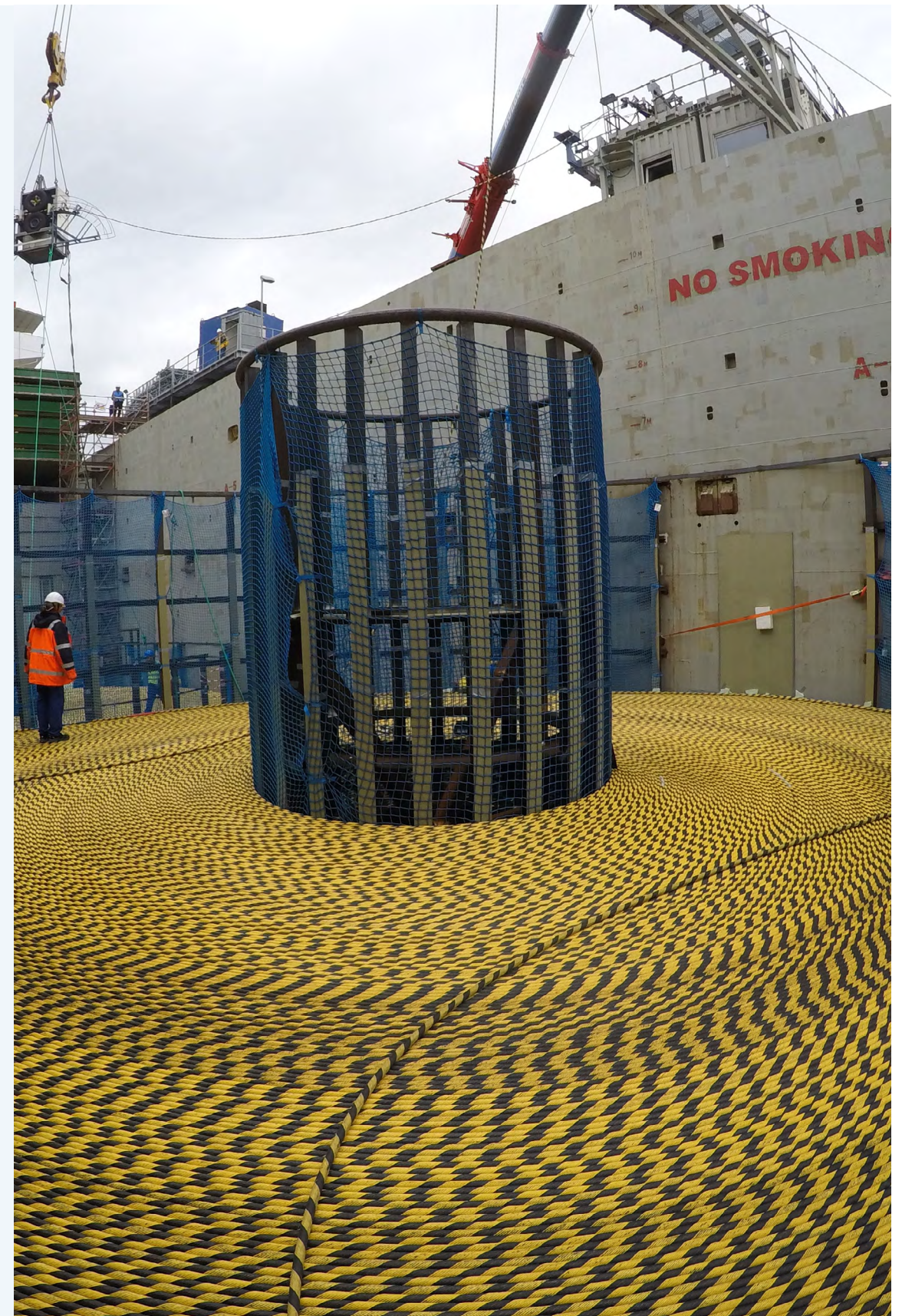
Singapore

Singapore has over 40 subsea cable landing sites, according to TeleGeography, including Sea-ME-WE 3, 4, 5 and 6, as well as the PEACE cable (see China section), the India-Asia Express, and links with Indonesia, Australia, Japan, and Malaysia.

Singapore has plans to deploy several new cables over the next few years, including Apricot (a 12,000-km cable planned for launch in 2026, which will link Japan, Taiwan, Guam, the Philippines, Indonesia and Singapore), Hawaiki Bui 1, which will have a design capacity of more than 240 Tbps and will link Australia, Indonesia and Singapore with optional branches to the Solomon Islands, Papua New Guinea and Timor-Leste.

Hawaiki Bui 1 charts a new, more efficient route northeast of Australia via the Torres Strait and is set for launch in 2027. Echo, which was launched in 2024 with further segments planned for 2025, is the first subsea cable to directly connect the U.S. to Singapore along a new Trans-Pacific route via California, Jakarta, Singapore, and Guam.

Including these and others, Singapore has plans to add 13 more subsea cables by 2028, which is a part of the government's strategy to significantly expand its digital connectivity credentials with plans to build autonomous systems and new green data centers that can handle data-intensive applications and AI capabilities. As a result, Singapore aims to double its capacity for international subsea cable landings over the next decade.



Indonesia

Indonesia enjoys a strong geographical position, linking mainland Asia with offshore South Pacific islands and Australia. As such, it is something of an undersea cable hub with over 60 landing sites.

However, the Indonesian government takes a somewhat protectionist approach to repairing its cables, only allowing Indonesian vessels and crews to repair and maintain cables. This has led to delays of months in repairing some of the linking cables, including in 2022, when it took two months to repair the Sulawesi Maluku Papua Cable System (SMPCS) – a significant submarine cable that links it with its islands and regional neighbors, and over a month to repair the Indonesian segment of SEA-ME-WE 5, which also affected connectivity to Bangladesh.

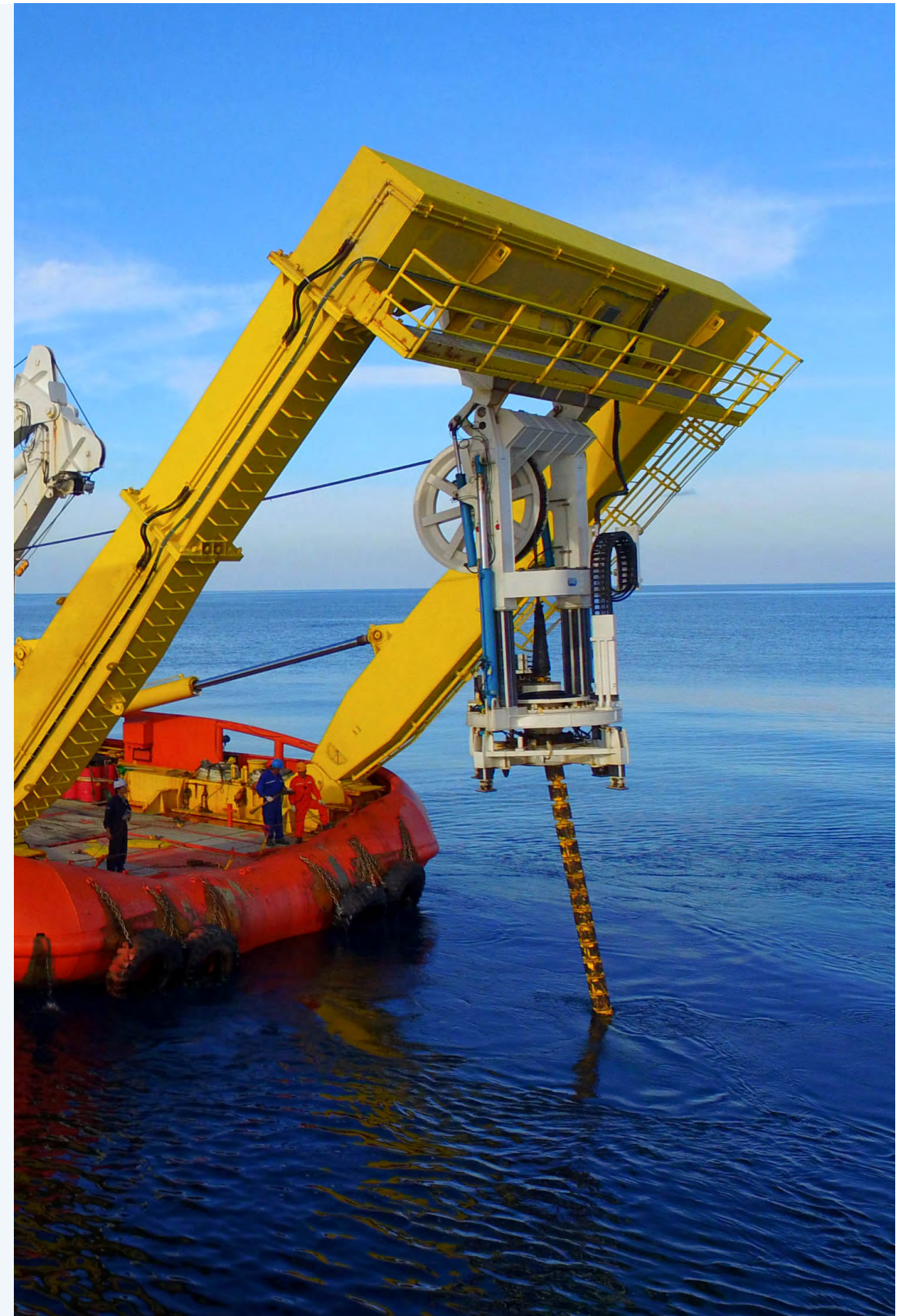
In October 2023, NEC completed deployment of the Patara-2 submarine cable system, owned by Telkom Indonesia, a high-speed 1,200-km optical fiber cable with a capacity of 100 Gbps interconnecting the cities of Waisai, Manokwari, and Supiori.

Indonesia is relatively behind in terms of global digitization, but its government have set targets to ensure digitalization. NEC has provided several subsea cable systems in Indonesia over the last few years. Planned additions include Asia Connect Cable-1 (by 2028), Bifrost (in 2025), and the Hawaiki Nui 1 cable (planned for 2027).

Malaysia

Malaysia offers a strategic geographic position between China and the South Pacific, and then on to India, the Middle East, and Europe. According to TeleGeography, it has 23 landing cables, with six new cables planned by 2027.

Digital economy is one of the fastest-growing sectors in Malaysia, and its government promotes the country as a rapidly growing digital economy and hub in the region. The Ministry of Digital is





the leading focus of this strategy. Its Malaysia Digital initiative is a national strategic program aimed at attracting companies, talent, and investment, while its 5G network is hailed as one of the leading networks in Southeast Asia in terms of reliable upload and download speeds.

The Malaysian government introduced the Malaysia Digital Economy Blueprint (MyDIGITAL) in 2021, which aims to make Malaysia a high-income leader in the digital economy. It welcomes U.S. investment, in particular, through its strategy to promote AI, IoT, cloud, financial technology (fintech), and cybersecurity services.

Malaysia is emerging as a data center powerhouse hub in Southeast Asia. Research and Markets predicts that Malaysia's data center market, centered on AI and colocation services, will grow from \$1.31 billion in 2022 to \$2.252 billion by 2028 – a CAGR of 9.41%¹⁷.

The Malaysian data center market has about 34 operational colocation data centers, which is driving expansion in its subsea cable networks.

Google, Microsoft, and Nvidia have all ploughed significant investment into the country's AI data center and colocation capabilities over the last few years. Malaysia also offers a large English-speaking, middle-class population, a well-established legal framework, and a business-friendly environment.

Thailand

Thailand also enjoys a geographic position as a hub between Asia, the Middle East, and Europe. It has eight landing sites, with six more planned between now and 2027. These planned routes include MIST (which NTT landed in Mumbai in February 2023, but there are more branches planned – it connects Malaysia, India, Singapore, and



Thailand), and the SEA-H2X cable that connects Hong Kong, Hainan China, the Philippines, Thailand, East Malaysia, and Singapore, with options in 2025 to extend to Vietnam, Cambodia, West Malaysia and Indonesia.

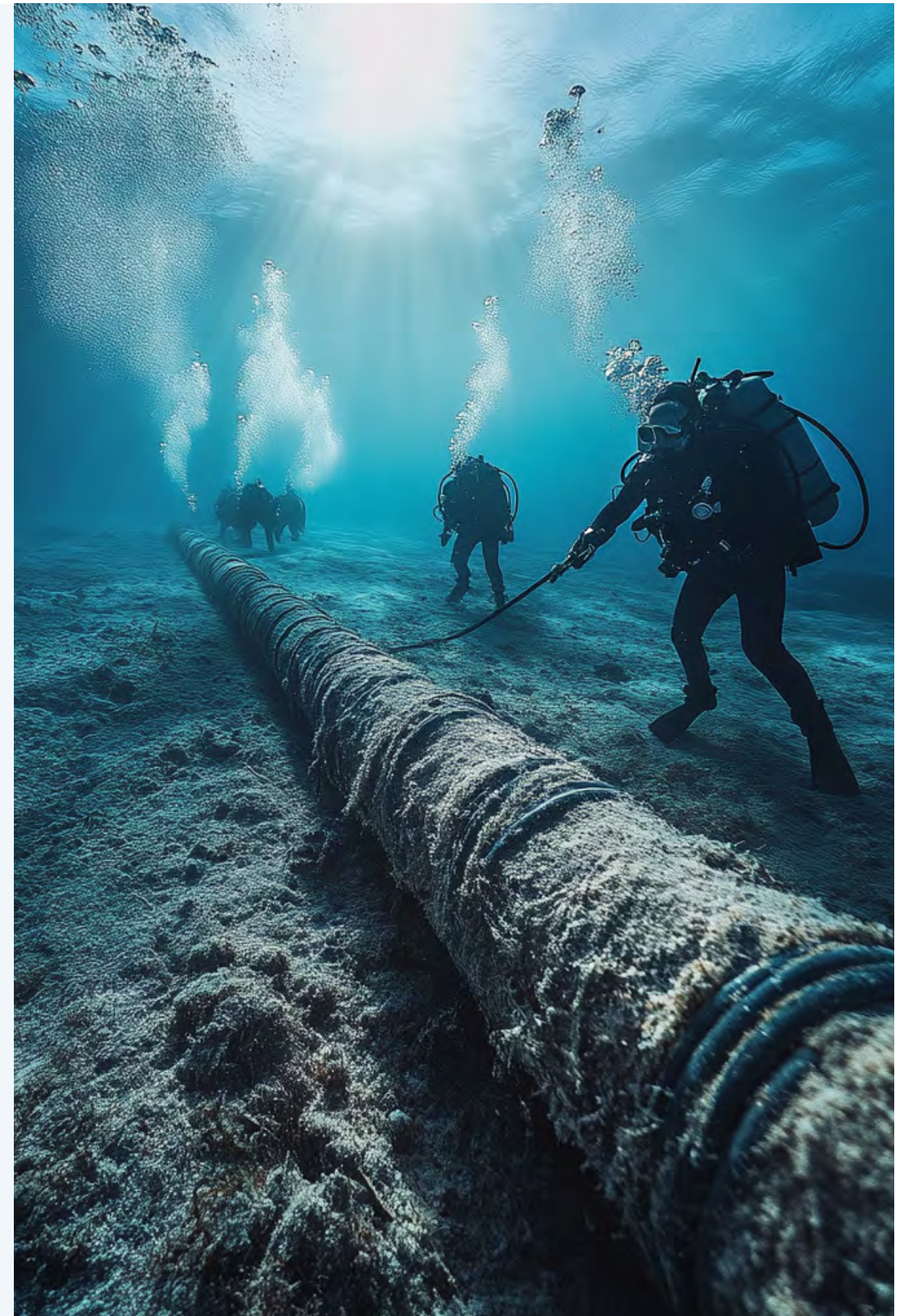
SEA H2X is a joint venture lead by the consortium of China Mobile International Limited (CMI), China Unicom Global (CUG), Converge Information and Communications Technology Solutions, and PPTEL SEA H2X Sdn. HMN Technologies was given the tender to build the cable.

In November 2023, the Thai government signed a MoU with Microsoft Thailand to create an AI Center of Excellence in the country with Microsoft looking to set up Thailand as an AI hub in Southeast Asia. Thailand is also enjoying rapid growth as a colocation region with an estimated 32 operational colocation data centers already constructed.

According to Arizton, the data center market in Thailand is forecast to grow from around \$790 million in 2023 to reach \$1.19 billion by 2029, expanding at a CAGR of 7.14% over the forecast period¹⁸. The Thai government intends to make the country a digital/AI-led economy over the next five years, and subsea cables form a prominent component of that strategy.

The Philippines

In March 2022, the Philippine government enacted the Republic Act No. 11659, which replaced the 85-year-old Public Service Act (PSA), and allowed foreign investors and companies to take 100% ownership in telecoms, shipping, airline, railway, toll road, and transport network vehicle organizations in the country – prior to that there was a cap of 40%. The government also offers competitive tax incentives for foreign investors and providers.



It essentially opened its communications sector to foreign ownership, which is creating a growing hub for Trans-Pacific and cross-Asian submarine cable networks through the creation of open policies and regulations, and better market competition.

The Philippine Domestic Submarine Cable Network (PDSCN) was deployed during 2023 and early 2024 and interconnects the various Philippine islands. As well as promoting AI data center investment, the Philippines has a thriving call center industry, which relies on submarine connectivity.

Between 2025 and 2027, there are plans to connect to other regional hubs via the Southeast Asia-Japan Cable, SEA-H2X, and the Vietnam-Singapore Cable System, among others. As of the end of 2024, there were 11 in-service international submarine cable systems connecting the Philippines, with another six Trans-Pacific and Intra-Asia subsea cables under construction.

Vietnam

Vietnam's undersea cable system and geographical positioning has been in the news recently, as it is becoming a technological battleground between the U.S. and China. As a communist country, Vietnam is not averse to working with Chinese companies, such as HMN Technologies. However, in recent weeks Washington has been lobbying hard for Vietnam to shun HMN Tech and other Chinese entities, and work with more experienced Western companies (See blog [“Vietnam plans two new undersea cables as the U.S. lobbies hard for Hanoi to avoid using Chinese companies”](#))¹⁹.

But Vietnam has big plans to update its aging current five undersea cables, with the addition of 10 new ones, with a total capacity of 334 Tbps, by 2030. In January 2024, Hanoi unveiled its Information and Communication Infrastructure Master Plan 2021-2030, which is focused on constructing data centers, deploying delayed 5G services



to its population by the end of 2025, and updating its subsea cable system. In June 2024, Vietnam suffered significant internet outages of three of its five cables when its aging system failed.

In October 2024, Vietnam announced plans to lay two new undersea fiber optic cables as part of a telecom infrastructure master plan, but the tender process is still unclear, which has led to Washington lobbying the Vietnamese government to choose Western suppliers over HMN Technologies, suggesting that going along with Beijing could prevent U.S. companies from investing in Vietnam.

The tender process has not yet been finalized, or announced, by Hanoi, meaning that Vietnam could come to play a significant role in the geopolitical balance of the region's subsea cable networks.



Conclusion

Asia is undergoing rapid digitization, including the deployment of 5G (and plans for 6G) networks, the growth of cloud computing, global colocation services, and the construction of AI-focused data centers and hyperscalers.

The region has a huge population, which is also considered to be composed significantly of youthful, technology early adopters. Governments throughout the region are embracing emerging technologies as they bid to boost prosperity and place themselves at the heart of the global digital economy.

U.S. organizations, investors, and content providers view the region as having significant market potential, and are investing in the region's infrastructure - including undersea cable networks to transmit large volumes of data around the world and take advantage of the vast processing power in the region, enabled by rapid AI data center growth.

While there are significant opportunities, there are also challenges and risks, many of which are coming from China's growing assertion over disputed South China Sea territories. Many countries in the region are open to Western investments, but are also having to balance that with the influence China has over subsea cable systems, through military aggression, in the waters in the region.

The U.S. is keen to expand its trans-Pacific subsea cable system with Southeast Asia, notably Singapore, which is of course a global financial and trade hub. Washington has also lobbied for countries in the region to avoid the use of Chinese entities and, notably, in this context HMN Technologies as it fears – along with many other countries – that Beijing could use subsea systems for espionage and censorship purposes.

Many new projects in the region have either been blocked or have been persuaded to exclude Chinese entities. At the same time, China's activities in the South China Sea, and Beijing's deliberate delays



to permits for maintenance and repair of existing cables is not only affecting global interconnectivity in many cases and making maintenance organizations wary of repercussions, but also leading new projects to consider routing new cables around disputed South China Sea territory. In turn, this is increasing the time and cost required for laying new cable routes.

China has also been accused of deliberately damaging existing cable systems. While difficult to prove, many governments around the world consider the South China Sea (along with the Red Sea) to be a risk and serious chokepoint to global subsea interconnectivity.

While there are significant opportunities in the region, there are also geopolitical sensitivities to navigate. Pamir has decades of experience of dealing with exactly these kinds of challenges in the region. Our unique blend of on-the-ground experience, our relationships with business influencers in the region, and in-depth quantitative and qualitative research means that we can guide you through these choppy waters.

We can help you to maximize opportunity in this rapidly developing part of the world, which provides a huge potential market, while minimizing risk – both existing risks and potential future risks – providing you with a clear roadmap to success and clarity surrounding potential bumps in the road. Contact us today to discuss your requirements and concerns.



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