

PERSPECTIVE

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The Intricacies of 5G Development in Southeast Asia

*Melinda Martinus**

EXECUTIVE SUMMARY

- Many Southeast Asian telecommunication providers rolled out their 5G masterplans and selected vendors this year, with Covid-19 prompting the need to accelerate the upgrading of digital infrastructure.
- Southeast Asian countries, except Vietnam, welcome collaboration with Chinese telecommunication vendors, including Huawei. However, recently, some telecommunication providers in Singapore, Malaysia, and the Philippines have moved away from Huawei.
- The Trump administration's espoused security-related restrictions on Chinese digital technologies, and the pressure to speed up digital transformation during the pandemic have encouraged Southeast Asian telecommunication companies to curb reliance on Huawei.
- Recent 5G partnership trends in Southeast Asia indicate that there is diversification of vendors. ASEAN member states need to maintain their commitment to an open, fair, and competitive 5G market to remain trustworthy and credible in other technology and innovation sectors.

Melinda Martinus is Lead Researcher (Socio-cultural) of the ASEAN Studies Centre, ISEAS – Yusof Ishak Institute.

INTRODUCTION

COVID-19 may be causing a significant economic downturn with a predicted slowdown until 2021, but the 5G adoption in ASEAN member states remains unwavering. The unprecedented use of remote technologies and digital services such as mobile tracing, telemedicine, video and online chat, and digital marketplace during the pandemic has put 5G solidly in the forefront of the region's digital transformation.

ASEAN member states continued to roll out their 5G masterplans this year, with Covid-19 prompting the need to accelerate digital infrastructure. Singapore, for instance, remains on track to achieve nation-wide 5G coverage by 2025 despite the economic downturn.¹ Thailand's prominent mobile operator, Advanced Info Service (AIS) launched its 5G service in tens of hospitals across the country to help with telemedicine services.² Recently, Malaysia spearheaded the country's digital masterplan, Jalinan Digital Negara (Jendela), that prepares its transition towards 5G technology.³

Experts predict that the ASEAN region will reap many benefits from the 5G deployment. From the demand side, 5G provides consumers with faster connection speed, low latency and more bandwidth, making digital consumption in video streaming and smart application much more seamless than the previous network generation. Apparently, 5G will revolutionise industries and enable a wide range of new digital applications such as internet of things (IoT), smart cities, driverless cars, robotic appliances, and augmented reality. The global consulting firm AT Kearney predicts that 5G will add 6% to 9% to consumer revenues and 18% to 22% to enterprise revenues in ASEAN by 2025.⁴ The region could gain as much as US\$ 174 billion, with more than half coming from service sectors such as trade, transport, and financial services. These will be further bolstered by artificial intelligence technologies.⁵

In order to achieve such an aspiration, ASEAN member states will need to develop a comprehensive 5G roadmap. Concerns over 5G development are not on the technical and operational challenges of facilitating such a transition, however, but on which firms are to supply the region with 5G infrastructure. Southeast Asia has become a contested venue for the world's telecommunication superpowers. In fact, things became much more intricate when cybersecurity concerns became fuelled by the political and security feud between the US and China over the past years.

5G SECURITY AND GEOPOLITICAL CONCERNS

A significant shift from hardware to software infrastructure in 5G technology has triggered concerns over national security and cyber-surveillance. Unlike earlier network generations, 5G architecture utilises technologies that allow providers to access and analyse the chain of networks from users to data storages. This transformation has raised a debate on whether operators should buy equipment from or partner with Chinese telecommunication companies.

Unlike the democratic style of business governance in most of the liberal countries – where there is a separation of business and state – Chinese telecommunication titans, including

Huawei and ZTE, are believed to have close ties to China's authoritarian one-party government. This issue has further raised suspicion that Beijing has absolute power to seize corporate data for national interests.

The tension between Beijing and Washington increased when the US Department of Justice (DOJ) charged Huawei with defrauding banks to evade sanctions on Iran and stealing trade secrets in late 2018. It culminated in the Canadian authorities arresting Huawei CFO, Meng Wanzhou, in compliance with a US request. Huawei was caught in a broader trade dispute between China and the US. Further, Trump administration's embargo on Huawei has also influenced its allies – Japan, Australia, and Germany – to exclude the company from 5G infrastructure procurement in their respective countries.

In the ASEAN region, anti-Huawei sentiment grew intensely only in Vietnam. A series of boycotts of Chinese products and territorial disputes in the South China Sea triggered anti-Chinese sentiments, propelling many Vietnamese telecommunication providers to diverge from Huawei. Vietnam's largest mobile telecommunication provider, Viettel, decided instead to deploy telecommunication equipment from Ericsson (Sweden) and Nokia and 5G chipsets from Qualcomm (US) last year.⁶ In an interview with Bloomberg, Viettel's CEO asserted that the decision not to use Huawei was purely due the company's security and technology concerns, not because of the geopolitical pressures from the US.⁷

Indonesia and Malaysia are generally open to collaborating with Chinese telecommunication companies, despite significant Chinese-investment resistance from their citizens. In 2018, after a historic victory in the general election, Malaysia's then-Prime Minister Mahathir Mohamad halted major China's Belt Road Initiative projects, such as Melaka Gateway and the Malaysia-China Kuantan Industrial Park, pending further investigation into China's involvement in the 1MDB financial scandal. He also criticised other Chinese-backed projects such as Forest City in Johor Bahru for not providing benefits such as affordable housing and employment to local residents. However, his resistance over Chinese investments in Malaysia did not predominate his view on Huawei. In a Nikkei conference in May 2019, he firmly welcomed Huawei's expansion in Malaysia, "Huawei's research is far bigger than Malaysia's capability. We will make use of their technology as much as possible."⁸

In Indonesia, many Chinese telecommunication companies have enjoyed significant market growth, especially in mobile phone sales. A report from Canalyst points out that from 2018 to 2019, Chinese mobile phones sales grew by more than a third – staggeringly higher than for any mobile brand.⁹ In a Huawei-paid article published in the Jakarta Post, there was mentioned that Huawei had increased its operation size, currently employing more than 2,000 people in the Jakarta office and partnering with around 200 companies who provide more than 40,000 jobs across the archipelago.¹⁰ When the company started 20 years ago, it only had 20 workers.

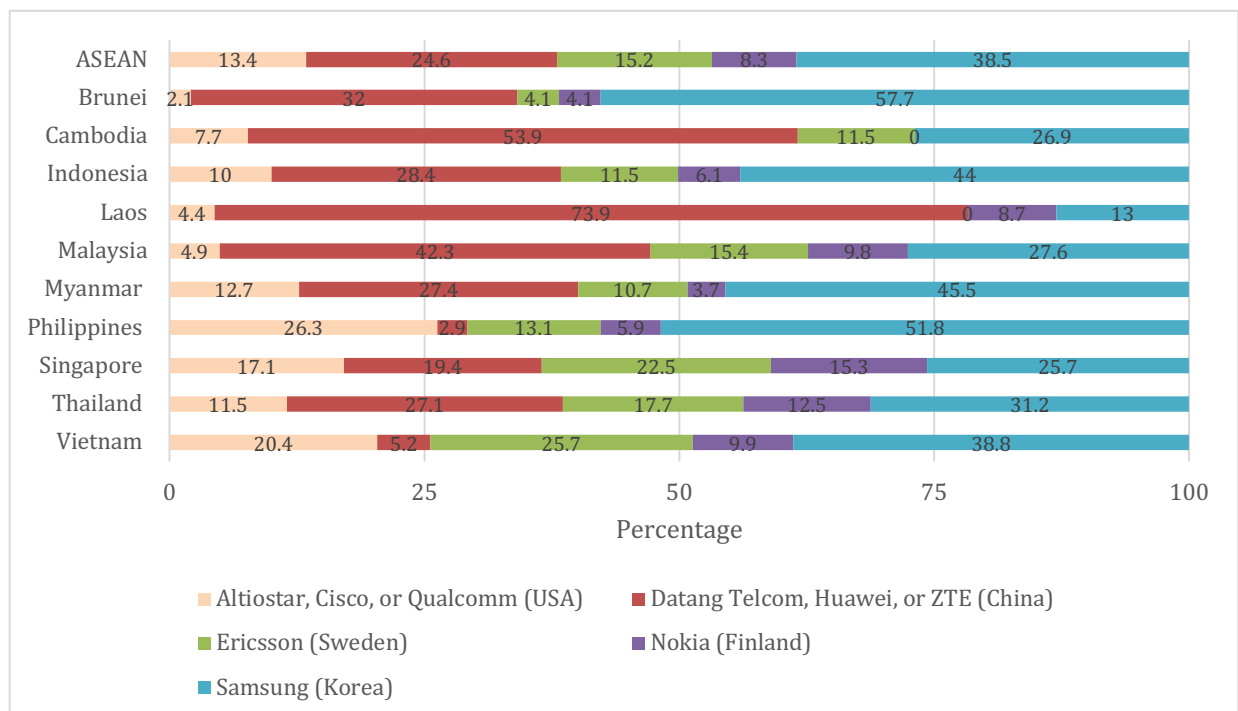
Chinese technology expansion is strongly welcomed in the country. When the US suspended Huawei, Telkom Indonesia's President asserted that Indonesia's largest telecommunication company would collaborate with any vendor in the world, including Chinese companies.¹¹ However, Indonesia's positive sentiment over Chinese investments in the largest ASEAN market has waxed and waned over the past years. The country has

been seeing a series of protest on Uyghur abuses and China’s growing economic influence in the country. During the Covid-19 outbreak, conspiracies around the coronavirus ignited hoaxes on Chinese technologies. A viral message circulated on WhatsApp mentioned; “Throw out your Xiaomi mobile phones! The coronavirus comes from China and is spreading through the server, coming out from Xiaomi speakers.”¹² A xenophobic message also went viral on Twitter, warning people of Jakarta to stay away from a building where Huawei’s Indonesian headquarters is located.¹³

In the Philippines, the Huawei embargo prompted authorities to investigate espionage allegations against the company's operations. But despite US pressure to avoid Huawei, the Philippines National Police investigation said that they had found no indication of espionage.¹⁴ Huawei even leveraged its position as a credible telecommunication vendor by partnering with the City of Davao and Manila to develop a US\$ 400 million video surveillance system, known as “Safe Philippines”.¹⁵

In the ASEAN region, Huawei and Chinese telecommunication companies are generally welcomed. A survey report on the State of Southeast Asia 2020 by ISEAS – Yusof Ishak Institute maps a positive perception of trust in Chinese companies to build 5G infrastructure in ten ASEAN member states (Chart 1). Chinese telecommunication providers such as Datang Telecom, Huawei, and ZTE are the second-most preferable partners in building 5G infrastructure after South Korea's Samsung. In Laos, Cambodia, and Malaysia, the preference for Chinese telecommunication companies is even stronger. The survey also shows that Chinese telecommunication providers are preferred over their US competitors in almost all ASEAN member states, except in the Philippines and Vietnam.

Chart 1
Southeast Asia’s Preferred 5G Developers



Source: *The State of Southeast Asia: 2020*, ISEAS – Yusof Ishak Institute

PARTNERSHIP TRENDS

In 2019, all ASEAN member states, except Vietnam, were receptive of Huawei technology, and they included Chinese vendors in the bidding process. However, starting from mid-2020, many telecommunication providers have begun to diversify away from Chinese technology (Table 1).

The Covid-19 pandemic has shed light on the importance of digital economy acceleration, thus prompting policymakers to select partners with outstanding track records to build this critical infrastructure. Some ASEAN telecommunication providers might find Huawei's technology more advanced compared to other vendors. Amid the pressure to speed up digital transformation, they cannot afford to spend more time assessing Huawei's security compliance.

Moreover, the Trump administration's espoused security-related restrictions on the Chinese payment platforms of Ant Group and Tencent, the social media TikTok, and the battle over semiconductors have influenced global enterprises to put Chinese technology products under scrutiny. This may, in turn, alert ASEAN business communities to diversify in order to avoid risks cybersecurity and further implications of the United States' ban on Chinese technologies.

Singapore's largest telecommunication provider, Singtel, recently selected Ericsson (Sweden) as the vendor to build the company's 5G infrastructure network. Other providers, M1 and Starhub, decided to partner with Nokia (Finland). Huawei's loss to the European telecommunication giants has left the company with less significant 5G partnership in the city-state.¹⁶

In a public hearing in June 2020, Singapore's Minister for Communications and Information, S. Iswaran stated that Singapore did not specifically exclude any vendor, and the process of selection had been rigorous and competitive.¹⁷ Chinese companies, ZTE and Huawei, will continue to work with Starhub, M1, and TPG in building localised networks. Minister Iswaran also underlined that the city-state's 5G ecosystem "will continue to evolve, and there will be more opportunities for various technologies to participate."¹⁸

Diversification of 5G vendors has also been explored by two of ASEAN's telecommunication providers, Axiata Group (Malaysia) and Globe Telecom (Philippines). Despite the willingness to continue working with Huawei amid the US-government ban last year, Axiata recently stated that the company would select two vendors to roll out its 5G network—a move that could reduce reliance on Huawei.¹⁹ Similarly, the Philippines' Globe Group asserted that it will come up with a strategy to use other equipment beyond Huawei's. Globe recently stated that Huawei will still provide 80% of its equipment, while companies such as Ericsson and Nokia will complement the remaining 20%.²⁰

Table 1 5G Partnership Trends in ASEAN

No	ASEAN Telecommunication Provider	5G Vendor	Date of Announcement
1	XL Axiata (Indonesia)	Ericsson (Sweden)	6 August 2020
2	Smartfriend (Indonesia)	ZTE (China)	2 October 2019
3	Telkom (Indonesia)	ZTE (China)	21 June 2019
4	Axiata Group (Malaysia)	Huawei (China) and Ericsson (Sweden)	27 May 2020
5	Maxis (Malaysia)	Huawei (China)	4 October 2019
6	Viettel (Vietnam)	Ericsson (Sweden)	10 September 2019
7	Vinaphone (Vietnam)	Nokia (Sweden)	10 April 2019
8	Singtel (Singapore)	Ericsson (Sweden)	25 June 2020
9	M1 (Singapore)	Nokia (Finland)	25 June 2020
10	Starhub (Singapore)	Nokia (Finland)	25 June 2020
11	Ooredoo (Myanmar)	ZTE (China)	16 May 2019
12	Globe Telecom (Philippines)	80% Huawei (China), 20% Ericsson (Sweden) and Nokia (Finland)	24 September 2020

Source: various media outlets

The recent diversion away from Huawei among Southeast Asian major mobile network operators has left Chinese (Huawei and ZTE) and European (Ericsson and Nokia) companies dominating the 5G equipment regional market. Others are trailing behind. For example, despite being seen as a trusted partner in the 2020 State of Southeast Asia Survey, Samsung (Korea) has no significant presence in supplying 5G infrastructure in the region. That company provides less than 15% of the 5G global equipment market.²¹ In contrast, Huawei, Ericsson, and Nokia have a share of 40%, 20%, and 15%, respectively.²²

Similarly, US telecommunication companies (Altiostar, Cisco, and Qualcomm), despite being perceived as reliable partners in Vietnam and the Philippines, have no significant presence in providing 5G equipment in the region. American telecommunication companies have registered far fewer numbers of 5G technology patents compared to their Chinese, European, and Korean competitors.²³ This outlook indicates that their capabilities for future technology expansion are limited, thus, making them a less popular choice in supplying 5G equipment globally.

Despite having its dominance curbed, Huawei remains active in building ecosystems for the digital economy in the region, especially in assisting Southeast Asian cities in achieving smart cities aspirations through the ASEAN Smart Cities Network. Huawei supports the City of Davao and Manila in the Safe Philippines project, a surveillance system project that enables cities to curb crime and enhance emergency responses. When the project was inaugurated, it sparked fears of Chinese surveillance.²⁴ In Singapore, Huawei invested in a US\$ 10 million 5G-powered AI lab to promote its technology and in cultivating a digital ecosystem for advancing Singapore’s Smart Nation pledge.²⁵ More recently, Huawei signed an MOU with Malaysia Digital Economy Corporation (MDEC) to drive Malaysia’s e-commerce sector.²⁶

WAY FORWARD

The ASEAN region has come under increasing pressure to grapple with the influence of Huawei and with the broader US-China contestation. Despite all ASEAN member states, excepting Vietnam, welcoming Chinese technology in the region, some companies have decided to reduce reliance on Chinese companies, notably Huawei. This development trend allows other prominent vendors such as Nokia and Ericsson to balance Chinese vendors' dominance. Nevertheless, besides having its dominance curbed in the 5G equipment competition, Huawei remains proactive in developing digital ecosystems in the region.

In the future, there will be more competition involving technology titans which could trigger geopolitical tensions over cybersecurity. ASEAN could start exploring mechanisms to standardise compliance and diversify risks. The competition over 5G equipment in the region should be a case study to explore a more robust compliance system in digital technology. ASEAN member states should maintain their commitment to open, fair, and competitive market to remain trustworthy and credible in other technology and innovation sectors.

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