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US-ASEAN Digital Economy Cooperation

BY
HANH NGUYEN





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Executive Summary

Hanh Nguyen

Long criticized for its lackluster record in economic engagement with Southeast Asia, the US is now looking to bolster digital economy cooperation with the region as part of its Indo-Pacific strategy. Both sides have already engaged in several cooperation initiatives to strengthen Southeast Asia's digital capacities. These actions/engagements aim to help the region capture the immense benefit and respond to potential socio-economic disruptions brought by the digital economic boom. However, US-ASEAN cooperation will have to deal with two challenges. First, China has already established a comprehensive and prevalent presence in the region's digital economy, from hard infrastructure and customer-facing businesses to developing digital standards. Second, Southeast Asia's diversity in economic development leads to varied capacities among its members. These attributes carry certain security complications for Southeast Asia and the US in the long run. Addressing them will require both sides to further boost cooperation, particularly in shaping regional digital standards.

Key words: digital economy, cooperation, Southeast Asia, the US, China

Introduction

During the unprecedented COVID-19 pandemic, while many traditional economic activities were struggling or completely paralyzed, one bright spot remained: the digital economy. Measures aimed to reduce movements and direct contacts during the pandemic turbocharged global consumer online demands in retail, education, finance, and other services. Southeast Asia is no exception. According to Google & Temasek's report on Southeast Asian digital economy, the region has 290 million digital consumers pre-pandemic, but after 2021, that number swells to 350 million, adding 60 million more users in just two years.¹ Consumers also increasingly embrace digital services, accepting them as a new way of life as 9 out of 10 new users in 2020 continue to use digital services in the next year.²

The United States, long criticized for its lackluster record in economic engagement, is now looking to bolster digital economy cooperation with Southeast Asia as part of its new regional strategy. On May 23rd, 2022, U.S. President Joe Biden unveiled American newest economic strategy, the Indo-Pacific Economic Framework (IPEF), with the participation of a dozen countries in the region, including 6 Southeast Asian economies. Digital economy belongs to one of the Framework's four key pillars - Connected Economy - and the U.S. states that it wants to work with regional states on standards for cross-border data flow and data localization, along with empowering the digital capacity of small and medium enterprises. However, this is not the beginning of digital economy cooperation between the U.S. and Southeast Asia, as both sides have engaged in this area for quite some time.

This report looks into the current state of cooperation between the U.S. and Southeast Asia, identifies the main features of the region's digital economy and their implications, and proposes solutions to boost future engagement in this area. It argues that China has already established a robust and comprehensive presence in Southeast Asia's digital economy through its public and private investments.

Furthermore, regional states have varied digital capacities, reflected in their connectivity infrastructure and legal landscapes. These attributes carry certain security complications for Southeast Asia and the U.S. in the long run.

The report will be structured in four sections. The first part introduces the current state of cooperation between Southeast Asia and the U.S. in the digital economy. The following section dives into China's prevalent presence in Southeast Asia's digital economy and the region's varied digital capacity, and the third part explores security implications of these features. The report ends with a range of recommendations for both sides to further advance cooperation.

U.S.-ASEAN cooperation on the digital economy

The digital economy often refers to a wide range of economic activities that employ digitalized information and knowledge as key factors of production, which are collected, stored, and analyzed by digital technologies such as the Internet, cloud computing, big data, fintech, and other technologies.³ The advent of new and disruptive communication technologies puts the digital economy in the spotlight since it can unleash new jobs, accelerate innovation, and encourage economic growth but also bring about critical socio-economic changes.

The digital economy has become a new focal point for U.S. engagement with Southeast Asia and featured prominently in Vice President Harris' visit to Southeast Asia in August 2021. In Vietnam, Harris pledged American support for Vietnam's transition to a digital economy, including a USAID project to help upskill and reskill the Vietnamese workforce in preparation for the digital economy.⁴ In Singapore, both herself and Prime Minister Lee Hsien Loong launched a U.S.-Singapore Partnership for Growth and Innovation, in which two countries will jointly develop common technical standards and

¹ Google, Temasek, Bain & Company, *e-Conomy SEA 2021 – Roaring 20s: The SEA Digital Decade*, November 2021, p. 15, https://services.google.com/fh/files/misc/e_conomy_sea_2021_report.pdf?utm_source=twg&utm_medium=article&utm_campaign=2021.

² Ibid, p. 25.

³ "Understanding the Digital Economy: What Is It and How Can It transform Asia?", Asian Development Bank, accessed July 18, 2022,

<https://www.adb.org/news/events/understanding-digital-economy-what-it-and-how-can-it-transform-asia>.

⁴ "Fact Sheet: Strengthening the U.S.-Vietnam Comprehensive Partnership," White House, August 25, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/25/fact-sheet-strengthening-the-u-s-vietnam-comprehensive-partnership/>.

interoperable systems in the digital economy and data protection regimes.⁵

Aside from Harris' visit, the U.S. has already initiated digital economy cooperation with Southeast Asia for some time. Since 2017, the U.S.-ASEAN Connect Digital Economy Series – an ongoing series of roundtables and workshops – has promoted best practices to develop policy and regulatory ecosystems for e-commerce, cybersecurity, and cross-border data flow between ASEAN government decisionmakers and American and regional technology companies.⁶ Another initiative is the ASEAN-USAID Inclusive Growth in ASEAN through Innovation, Trade, and E-commerce (IGNITE), which supports ASEAN states to develop affordable, secure, and digitally enabled services that reflect international standards and promote e-commerce among micro, small and medium enterprises.⁷ ASEAN and the U.S. also agreed to expand the U.S.-ASEAN Trade and Investment Facilitation Agreement (TIFA) and the Expanded Economic Engagement Work Plan (E3) to include digital economy cooperation.⁸ Finally, during the 9th ASEAN-U.S. Summit in October 2021, ASEAN leaders and President Biden launched the Statement on Digital Development, a comprehensive document to support ASEAN's digital transition. Cooperation is not limited to promoting digitalization in business and e-commerce but also involves developing ASEAN's digital infrastructure and ecosystem, supporting its businesses in the digitalization process and its workers in technological upskilling.⁹

Advancing digital economy cooperation brought many benefits to the U.S. and Southeast Asia. The digital economy holds enormous potential for Southeast Asia and is expected to reach 360 billion USD in gross merchandise volume by 2025.¹⁰ Among Southeast Asian internet users, 8 out of 10 are digital consumers, and they embrace digital services due to their convenience, wider selection, and competitive pricing. This rapid growth will provide many

opportunities for American businesses in the technology and service sectors, which are traditionally American strengths in the region.

Furthermore, the digital economy has become the new buzz among ASEAN and Southeast Asian states as they are placing their bets on digital transformation and digital economy as innovative solutions to revitalize the economy after the COVID-19 pandemic. The ASEAN Comprehensive Economic Recovery Framework, which outlines the roadmap for economic recovery, argues that digital transformation can boost the economy and improve society post-pandemic. The Framework recommends accelerating inclusive digital transformation as one of five strategies to achieve economic recovery because e-commerce and the digital economy are crucial in revitalizing demands for goods and services to pre-pandemic levels and enhancing cross-border trade among ASEAN members.¹¹ ASEAN members also adopted the ASEAN Digital Masterplan 2025 as a guideline for the region's digital economy and digital transformation.¹² Several ASEAN members have already issued their national strategies for promoting digital economies, such as Vietnam (digital economy is mentioned as one of the main development goals in the Strategy for socio-economic development 2021-2030), Indonesia (Digital Indonesia Roadmap), Malaysia (Digital Investment Future 5), and Cambodia (Digital Economy and Society Policy Framework 2021-2035).

For the U.S., a digital economy cooperation could help address one issue in its engagement with Southeast Asia: a missing economic strategy. Despite being the preferred security partner for several regional states, the U.S. is lagging behind China in terms of economic footprint. Annual surveys by ISEAS Yusof Ishak Institute since 2020 consistently identify China as the most influential economic power in Southeast Asia with a wide margin over

⁵ "Official visit of Vice President of the United States of America Kamala D. Harris, 22 to 24 August 2021," Ministry of Foreign Affairs of Singapore, 23 August, 2021, <https://www.mfa.gov.sg/Newsroom/Press-Statements-Transcripts-and-Photos/2021/08/20210823-US-VP-Visit-Post-IPC>.

⁶ "Accelerating Digital Transformation," US Mission to ASEAN, April 2, 2022, <https://asean.usmission.gov/accelerating-digital-transformation/>.

⁷ "IGNITE – Inclusive Growth in ASEAN through Innovation, Trade and E-Commerce," US Mission to ASEAN, June 27, 2022,

<https://asean.usmission.gov/ignite-inclusive-growth-in-asean-through-innovation-trade-and-e-commerce/#:~:text=As%20USAID's%20flagship%20project%20working,the%20ASEAN%20Economic%20Community%20Blueprint>.

⁸ "The U.S.-ASEAN Trade and Investment Facilitation Explained," ASEAN Briefing, September 27, 2021, <https://www.aseanbriefing.com/news/the-us-asean-trade-and-investment-facilitation-agreement-explained/>.

⁹ "ASEAN-US Leaders' Statement on Digital Development," White House, October 27, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/27/asean-u-s-leaders-statement-on-digital-development/>.

¹⁰ Google, Temasek, Bain & Company, e-Conomy SEA 2021 – Roaring 20s: The SEA Digital Decade, p. 8.

¹¹ ASEAN, *ASEAN Comprehensive Recovery Framework*, November 12, 2020, p. 5, <https://asean.org/wp-content/uploads/2020/11/2-FINAL-ACRF-adopted-37th-ASEAN-Summit-12112020.pdf>.

¹² "ASEAN Digital Masterplan 2025 adopted," *VietnamPlus*, January 23, 2021, <https://en.vietnamplus.vn/asean-digital-masterplan-2025-adopted/195233.vnp>.

other competitors.¹³ A major trade commitment, such as joining the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), is widely considered a necessary step for the U.S. to narrow the gap. However, the shift to trade rules enforcement and domestic apathy towards free trade agreements (FTAs) have prevented the U.S. from doing so.¹⁴ The digital economy thus emerges as a promising area of cooperation, which can build on American strength in technology and the rapid digital transition in Southeast Asia. An agreement on the digital economy is more compact than a traditional FTA and has a smaller impact on the U.S. economy. Therefore, they are less likely to run into large-scale domestic opposition. American-preferred rules for the digital economy were adopted in the U.S.-Mexico-Canada Agreement (USCMA) and the U.S.-Japan Digital Trade Agreement (USJTA). The emergence of these agreements has not led to widespread criticism about potential job loss like in the case of traditional FTAs. The U.S. also announced that developing standards for the digital economy would be one of the main pillars in its much-hyped Indo-Pacific Economic Framework.¹⁵

China's prevalent presence in Southeast Asia's digital economy

Nevertheless, U.S. engagement will have to contend with China's significant and growing influence in the digital sphere. Beijing's looming presence stretches from hard infrastructure (building fiber-optic cable networks, supplying communication satellites and other kinds of connectivity equipment), customer-facing businesses (including e-commerce, e-finance, and other digital services) to the development of digital standards (such as regulations in data flows, data privacy and cybersecurity).

China has significantly invested in Southeast Asia's digital infrastructure, including submarine and terrestrial cable networks. State-owned

telecommunication operators like China Telecom, China Unicom, and China Mobile are members of international consortiums behind major submarine cable systems such as APG (Asia Pacific Gateway), SEA-ME-WE 5 (Southeast Asia - Middle East - Eastern Europe 5) or SEA-H2X (South-East Asia Hainan-Hongkong Express Cable System). China Unicom jointly developed a terrestrial cable system, the China-Myanmar International (CMI), with Myanmar Posts and Telecommunications. China-developed Beidou navigation system provides services for Southeast Asian nations and operates a navigation base in Guangxi Zhuang Autonomous Region, focusing on the application of Beidou in the region.¹⁶ The push to build digital infrastructure in Southeast Asia is part of China's larger digital scheme, the Digital Silk Road (DSR). As an extension of the Belt and Road Initiative (BRI), DSR aims to build "information highways" connecting China and neighboring countries, particularly states already within the BRI framework. The investment scheme calls for the construction of cross-border optical cables and other communications trunk line networks, improvement of international communications connectivity, and satellite information passageways.¹⁷ Investments within DSR often come with obligations of procuring goods and services from Chinese state-backed companies, thus opening the door for the procurement and implementation of Chinese technologies and giving Beijing a major role in regional technological developments.¹⁸ Chinese companies are already building connectivity facilities such as communication networks, power grids, and pipelines within BRI's framework. Therefore, it would make sense for Beijing to offer other technological services as part of an investment package to operate these facilities, such as Beidou navigation services. Host countries are also likely to accept this condition since it saves time and funding to find another supplier.

¹³ Sebastian Strangio, "Southeast Asian Elite Survey Paints Complex Picture of China Ties", *The Diplomat*, February 17, 2022, <https://thediplomat.com/2022/02/southeast-asian-elite-survey-paints-complex-picture-of-china-ties/>.

¹⁴ Hanh Nguyen, "Why Is the U.S. Ambivalent about Trade Engagement in the Indo-Pacific", *The Diplomat*, June 09, 2022, <https://thediplomat.com/2022/06/why-is-the-us-ambivalent-about-trade-engagement-in-the-indo-pacific/>.

¹⁵ "Fact Sheet: In Asia, President Biden and a Dozen Indo-Pacific Partners Launched the Indo-Pacific Economic Framework for Prosperity," White House, May 23, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/23/fact-sheet-in-asia-president-biden-and-a-dozen-indo-pacific-partners-launch-the-indo-pacific-economic-framework-for-prosperity/>.

¹⁶ "Beidou Navigation Base in South China Targets services in ASEAN," *Xinhua*, November 27, 2020, http://www.xinhuanet.com/english/2020-11/27/c_139547563.htm.

¹⁷ "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road," Embassy of the People's Republic of China in the United Kingdom of Great Britain and Northern Ireland, March 2015, <https://www.mfa.gov.cn/ce/ceuk/eng/zywl/t1251719.htm>.

¹⁸ Jonathan E. Hillman, *The Digital Silk Road: China's Quest to Wire the World and Win the Future* (New York: Harper Business, 2021); Dai Mochinaga, "The Digital Silk Road and China's Technology Influence in Southeast Asia," Council on Foreign Relations, June 10, 2021, <https://www.cfr.org/blog/digital-silk-road-and-chinas-technology-influence-southeast-asia>.

Through investments in digital connectivity infrastructure, Beijing can internationalize its digital ecosystems, which include digital technologies, equipment, and related services. Chinese telecommunication companies like Huawei and ZTE partnered with several Southeast Asian states to develop their 5G networks.¹⁹ They have advantages in supplying all components related to 5G technology, from base stations to chipsets to antennas. In bidding, a comprehensive provider like Huawei would have more chance of winning a bid than providers supplying individual components.²⁰ In return, this comprehensive presence provides Chinese

companies royalties and license fees from standard essential patents to operation and maintenance contracts, thus solidifying their dominant status within the telecommunication field. Southeast Asia is also the site for fierce competition between Chinese technological giants like Alibaba and Tencent with U.S. companies on cloud computing. Alibaba opened five data centers in the region, with Tencent following behind with three centers. American companies are not far behind in this competition. Google already owned 3 data facilities in Singapore and will soon open another one in Indonesia while Microsoft and Facebook also plan to expand their

Name	Type	Consortium	Landing stations	Length (kilometers)	Year of operation
SEA-H2X (South-East Asia Hainan-Hongkong Express Cable System)	Submarine	China Mobile International China Unicom Converge PPTelecom	Hong Kong, Hainan, Philippines, Thailand, Malaysia and Singapore	5,000	2024
APCN-2 (Asia-Pacific Cable Network 2)	Submarine	26 operators, including China Telecom and China Unicom	Japan, South Korea, China, Taiwan, Hong Kong, Philippines, Malaysia, Singapore	19,000	2000
APG (Asia Pacific Gateway)	Submarine	PLDT Chunghwa Telecom China Telecom China Unicom KT Corp NTT Communications Telekom Malaysia VNPT	Japan, China, Hong Kong, Philippines, Brunei, Thailand, Singapore	18,600	2016
SJC (South-East Asia Japan Cable)	Submarine	11 members including China Mobile, China Telecom, China Telecom Global Limited	Japan, Korea, China, Taiwan, Hong Kong, Philippines, Singapore	36,800	2013

¹⁹ Huong Le Thu, "A Collision of Cybersecurity and Geopolitics: Why Southeast Asia is Wary of a Huawei Ban," *Global Asia*, September 2019, Vol. 14 No. 3, <https://www.globalasia.org/v14no3/cover/a-collision-of-cybersecurity-and-geopolitics-why-southeast-asia-is-wary-of-a-huawei-ban-huong-le-thu>.

²⁰ Stephen R Nagy & Hanh Nguyen, "Canada and the Indo-Pacific: Contributor, Bystander or Casualty?" *MacDonald-Laurier Institute*, October 2021, p. 30, https://macdonaldlaurier.ca/files/pdf/2021927_Indo-Pacific_Collection_PAPER_FWeb.pdf.

SJC2 (South-East Asia Japan Cable)	Submarine	China Mobile, Chunghwa Telecom, DongHwa Telecom, KDDI, Meta, SK Broadband, Singtel, Telin, True Corporation, VNPT-Vinaphone	China, Japan, Singapore, South Korea, Taiwan, Thailand, Vietnam	10,500	2021
CMI (China-Myanmar International)	Terrestrial	China Unicom Myanmar Posts & Telecommunications	China, Myanmar	1,500	2014
SEA-ME-WE 5 (Southeast Asia - Middle East - Eastern Europe 5)	Submarine	19 members, including China Mobile International, China Telecom Global, China Unicom,	Connecting Singapore, Indonesia, Malaysia, and Thailand with Middle East and Western Europe	20,000	2017
AAE-1 (Asia Africa Europe-1)	Submarine	18 members, including China Unicom	Connecting Hong Kong, Vietnam, Cambodia, Malaysia, Singapore, Thailand, Myanmar with Africa and Europe	25,000	2017

Table 1 China's participation in cable networks in Southeast Asia
Source: Author's compilation from www.submarinecablenetworks.com.

data centers outside Singapore. Regarding e-commerce, Chinese e-platforms and payment firms established a strong presence in Southeast Asia or invested heavily in local firms, supplying them with technology and business experience. Tencent and Alibaba seek dominance in the fintech markets with their online payment apps Alipay and WeChat Pay.²¹ JD, Didi Chuxing, and Alibaba are major stakeholders of Southeast Asian tech startups such as Grab, Lazada, and Tiki.²²

China also actively promotes standard-developing cooperation with Southeast Asia through ASEAN. It has set up several cooperation mechanisms for the harmonization of standards and further integration of digital systems. The China-ASEAN Information Harbor, a project between the Guangxi government and the Cyberspace Administration of China, was launched in 2014. It consists of China-ASEAN Information Harbor Co., a state-controlled info-tech platform company whose services include developing digital infrastructures and offering

²¹ Lily Ren, "Alipay and WeChat Pay Enter Southeast Asia and Local Mobile Payment Market," Pandaily, December 13, 2017, <https://pandaily.com/alipay-wechatpay-enter-southeast-asia-local-mobile-payment-market/>.

²² Nicole Jao, "Alibaba and Tencent's growing tentacles in Southeast Asia," Tech in Asia, January 27, 2021, https://www.techinasia.com/visual-story/alibaba-tencents-growing-tentacles-southeast-asia?utm_source=dailyarticle&utm_medium=website&utm_campaign=wp20210128.

Companies	Businesses in Southeast Asia	Investments, partnerships and joint ventures in Southeast Asia
Tencent	Messaging (WeChat) Fintech (WeChat Pay) Cloud services (Tencent Cloud)	E-commerce: Sea Ride-hailing: Gojek
Alibaba	Cloud services (Alibaba Cloud) Fintech (Alipay)	E-commerce: Lazada, Tokopedia Fintech: Wave Money, Akulaku, Dana, M-DAQ Security software: V-Key
JD.com	E-commerce (JD Indonesia)	E-commerce: Tiki, JD Central Booking platform: Traveloka
Didi Chuxing		Ride-hailing: Grab

Table 2 Chinese technological investments in Southeast Asia

Source: Author's compilation from media reports

digital services and solutions to ASEAN states.²³ Another project is China-ASEAN Digital Economy Industrial Park, which focuses on building digital economy ecosystems.²⁴ Both sides recently launched a Standard Cloud Platform at the 2nd China-ASEAN International Standardization Forum, in which Beijing discussed the importance of soft connectivity standards in the digital economy, smart cities, and financial information transmission.²⁵

Southeast Asia's varied digital capacities

Despite the impressive growth of their digital economy, Southeast Asian states have varying digital capacities. The diverse development levels within Southeast Asia mean some states have modern, sophisticated connectivity infrastructure, enabling them to reap the benefits of the digital boom. At the same time, other, less fortunate states will have to settle for older, inefficient facilities and are looking for external support to modernize their infrastructure.

One example of this divergence is internet connectivity. Internet connectivity is considered the foundation for any activities within the digital economy. Yet not all Southeast Asian states have sufficiently advanced digital infrastructures, creating inequality in access to reliable and high-speed Internet connections. In general, Southeast Asia has high rates of mobile cellular telephone subscriptions, with the majority of countries having over 100 subscriptions per 100 inhabitants (except Laos),

Country	Mobile cellular telephone subscriptions (per 100 inhabitants)	Percentage of individuals using Internet	Fixed (wired) broadband subscriptions (per 100 inhabitants)	Active mobile broadband subscriptions (per 100 inhabitants)
Brunei	120	94.87	11.53	120
Cambodia	111.49	40	1.02	82.82
Indonesia	119.34	39.9	3.32	87.15
Laos	51.6	25.51	0.64	42.01
Malaysia	120	81.2	8.55	116.7
Myanmar	113.84	30.68	0.24	92.69
Philippines	120	60.05	3.68	68.44
Singapore	120	88.17	27.97	120
Thailand	120	56.82	13.24	104.67
Vietnam	120	70.35	13.6	71.89
The United States	120	87.27	33.8	120

Table 3 Southeast Asia's digital capacities

Source: Author's compilation based on United Nations 2020 E-Government Survey

²³ Ngeow Chow-Bing, *China-ASEAN Information Harbour: The Digital Silk Road from Guangxi to Southeast Asia* (Bonn, Germany: Friedrich Ebert Stiftung, August 2021), p. 7.

²⁴ "Guangxi Accelerates Digital Economy Exchanges with ASEAN," People's Government of Guangxi Zhuang Autonomous Region, updated on January 25, 2022, http://en.gxzf.gov.cn/2022-01/25/c_701040.htm.

²⁵ "The 2nd China-ASEAN International Standardization Forum Held in Nanjing," Standardization Administration of the People's Republic of China, updated on October 9, 2021, http://www.sac.gov.cn/sacen/events/photonew/202110/t20211009_348057.htm.

Country	Internet speed			
	Mobile (Mbps)		Fixed broadband (Mbps)	
	Download	Upload	Download	Upload
Brunei	7.38	26.88	36.96	24.88
Cambodia	16.12	7.04	19.33	20.01
Indonesia	17.70	10.03	21.23	9.73
Laos	23.41	10.73	28.32	24.44
Malaysia	25.87	7.79	84.61	49.17
Myanmar	NA	NA	NA	NA
Philippines	19.38	5.61	52.16	49.08
Singapore	67.99	14.29	197.97	166.31
Thailand	33.49	12.54	187.80	152.92
Vietnam	33.90	16.59	67.96	63.89
The United States	61.12	8.60	151.46	21.03

Table 4 Median values of Internet speed in Southeast Asia and the United States as of March 2022

Source: Author's compilation based on Speedtest Global Index

signaling a wide use of mobile phones. Southeast Asians also frequently use their mobile phones to access the Internet as the majority of regional states have over 70 subscriptions per 100 inhabitants while Singapore and Brunei lead the race with 120 subscriptions. However, the number of individual Internet users shows a gap. More developed economies such as Singapore, Brunei, and Malaysia record over 70% of the total population as Internet users, but this figure is much lower in less developed members such as Cambodia, Laos, and Myanmar. Data on fixed broadband subscriptions reveal a deeper chasm. Laos, Myanmar, and Cambodia are languishing at the bottom with around one subscription per 100 inhabitants, which contrasts sharply with much higher rates from 8-13 subscriptions in Thailand, Vietnam, Brunei, and Malaysia. Singapore's high rate of 27 subscriptions puts it closer to the U.S. figure. The low rates for fixed broadband will create performance issues for Southeast Asia regarding high-speed Internet access. In fact, all SEA states except Singapore have low-to-average Internet speeds, which can affect the adoption of more advanced technology and applications such as Internet-of-Things or artificial intelligence.

Another aspect to consider is the national legislation landscape for the digital economy. National legislation can facilitate a better investment

environment for businesses by introducing clear regulations on economic activities in the digital realm, protecting digital customers' rights and interests, and preventing illegal and malicious actions that can harm national interests. In the case of Southeast Asia, the legislative framework for the digital economy is relatively developed yet somewhat fragmented. Table 3 shows each Southeast Asian state's progress in developing a comprehensive legislation package regarding the digital economy. In general, all countries enacted certain types of regulations (including laws, acts, government regulations, and

	Electronic transactions	Cybersecurity/ Cybercrime	Data Protection/ Data privacy	E-commerce
Brunei	✓	✓		
Cambodia				✓
Indonesia	✓			✓
Laos	✓	✓	✓	✓
Malaysia			✓	✓
Myanmar	✓			
Philippines		✓	✓	✓
Singapore	✓	✓	✓	
Thailand	✓	✓	✓	
Vietnam	✓	✓		

Table 5 Southeast Asia's legislation framework on digital economy

Source: Author's compilation based on media reports

Note: Only standalone legislations, including laws, acts, government regulations and decrees, are counted

decrees) covering at least one of the four aspects of the digital economy: electronic transactions, cyber security/ cybercrime, data protection/ privacy, and e-commerce. Simultaneously, many countries have multiple laws and regulations governing one particular aspect of the digital economy instead of specific and standalone legislation. For example, cybersecurity regulations in Malaysia are incorporated in several laws such as Computer Crimes Act 1997, Communications and Multimedia Act 1998, Penal Code, Copyright Act 1987, Personal Data Protection Act 2010, Digital Signature Act 1997, Strategic Trade Act 2010, and Sedition Act 1948.²⁶ Personal data protection regulations in Indonesia are incorporated in several laws and regulations, including Law No. 7 of 1992 as amended by Law No. 11 of 2020 concerning Job Creation and Law No. 11 of 2008 on Electronic Information and Transactions as amended by Law No. 19 of 2016 (ITE Law).²⁷ A curious case is Laos. Despite being the poorest Southeast Asian state, the Laotian government has already introduced a comprehensive package of legislation, including standalone laws and acts to regulate the digital economy.

Over the years, much work has been done within ASEAN to accelerate the region's digital transformation. In 2018, the ASEAN Coordinating Committee on Electronic Commerce finalized the ASEAN Digital Integration Framework and its Action Plan 2019-2025, which was later adopted at the ASEAN Economic Ministers' Meeting in the same year. This framework serves as an overall blueprint for ASEAN's digital integration efforts and identifies priorities such as trade facilitation, data flows, electronic payments, entrepreneurship, and talents.²⁸ In 2019, ASEAN members signed an agreement on electronic commerce, which established common rules and principles for electronic transactions and paved the way for a regionally integrated digital economy.²⁹ The agreement went into effect in December 2021. Also, in 2021, ASEAN made significant progress in

establishing a shared framework for data governance and cross-border data transfer by approving the Data Management Framework and Model Contractual Clauses for Cross Border Data Flows, designed by the Working Group on Digital Data Governance.³⁰ Most recently, the ASEAN Economic Community Council officially endorsed The Bandar Seri Begawan Roadmap (BSBR): An ASEAN Digital Transformation Agenda to Accelerate ASEAN's Economic Recovery and Digital Economy Integration, which outlines a plan to conduct a study on the ASEAN Digital Economy Framework Agreement by 2023 and commence negotiations by 2025.³¹ However, Southeast Asian states are more reticent about joining international agreements on the digital economy beyond the ASEAN framework. Only Singapore adopted a more forward-leaning approach to the digital economy and is already a signatory of the Digital Economy Partnership Agreement (with Chile and New Zealand) and the Singapore-Australia Digital Economy Agreement. Therefore, the participation of 7 out of 10 ASEAN members in the U.S.-led Indo-Pacific Economic Framework is a promising sign.

Implications

Through its comprehensive presence, China has contributed to Southeast Asia's digital economy development. By pouring funding into connectivity infrastructure and providing technology and equipment at lower prices, China has helped developing states in Southeast Asia build relatively stable digital connectivity networks and offered affordable services to local consumers. This, in turn, boosts economic activities in the digital realm, stimulates consumption, and encourages further technological innovations. This contribution is particularly prominent in 5G technologies, where Chinese communication giants like Huawei and ZTE are market pioneers while American companies neglected investments in this critical technology.

²⁶ "Basics of Cyber Security Law in Malaysia," Chia, Lee & Associates, accessed on July 19, 2022, <https://chiale.com.my/basics-of-cyber-security-law-in-malaysia/>.

²⁷ Glenn Wijaya, "Global Legislative Predictions 2022: Indonesia's Personal Data Protection Bill," International Association of Privacy Professionals, accessed on July 19, 2022, <https://iapp.org/news/a/global-legislative-predictions-2022-indonesias-personal-data-protection-bill/#:~:text=At%20the%20moment%2C%20Indonesia%20does,Law%20No.>

²⁸ "ASEAN Digital Integration," Ministry of Trade and Industry of Singapore, accessed July 19, 2022, <https://www.mti.gov.sg/ASEAN/ASEAN-Digital-Integration>; "ASEAN Digital Framework Action Plan (DIFAP) 2019-2025," ASEAN, February 2018, https://asean.org/wp-content/uploads/2018/02/AECC18-ASEAN-DIFAP_Endorsed.pdf.

²⁹ "ASEAN Agreement on Electronic Commerce Officially Enters into Force," ASEAN, December 3, 2021, <https://asean.org/asean-agreement-on-electronic-commerce-officially-enters-into-force/#:~:text=The%20E%2DCommerce%20Agreement%2C%20which,strengthen%20capacity%20to%20implement%20them.>

³⁰ "International: ASEAN Publishes Data Management Framework and Model Contractual Clauses for Cross-border Data Transformation," Data Guidance, accessed July 19, 2022, <https://www.dataguidance.com/news/international-asean-publishes-data-management-framework>.

³¹ "Digital transformation roadmap endorsed at 53rd AEM Meeting," Vietnam Plus, September 10, 2021, <https://en.vietnamplus.vn/digital-transformation-roadmap-endorsed-at-53rd-aem-meeting/207793.vnp>.

Chinese technology companies also provide high-quality digital services to local residents, either directly or through their Southeast Asian partners, such as ride-hailing, fintech, messaging, and cloud services. There is also a certain degree of competition between these companies since they operate and invest in the same services, thus creating more options for local customers.³² For example, the competition between Shopee and Lazada – two leading e-commerce platforms in Southeast Asia – is in some way a competition between two Chinese tech giants, Tencent and Alibaba. Alibaba holds an 83% stake in Lazada, while Tencent owns an 18% stake in Sea Limited – the owner of Shopee – as of May 2022. The presence of Chinese companies might also encourage Southeast Asian tech startups to evolve and develop better services to get ahead of well-funded Chinese competitors. Finally, given that China is a pioneer in e-commerce and fintech solutions, Southeast Asian businesses and customers undoubtedly benefit from Beijing’s knowledge and experience in these areas.³³

At the same time, its extensive presence in Southeast Asian digital economies also comes with substantial risks. Regarding internet governance and digital standards, China is currently in a favorable position to attract regional support for its concept of Internet sovereignty. Under President Xi Jinping, China has actively promoted its vision of cyber sovereignty as an alternative approach to cyberspace governance. According to China’s preference, states should have the right to freely choose their own governance models and related policies for the Internet; states should refrain from using the Internet to interfere in the internal affairs of other countries or engaging, tolerating, and supporting online activities harming other countries’ national interests.³⁴ This vision directly opposes the U.S. approach, which emphasizes free, open, and global cyberspace, governed by multiple stakeholders (such as technical communities, civil society, and the private sector) rather than the state.³⁵ For authoritarian states in

Southeast Asia, China’s cyber sovereignty is appealing since it justifies their tight control of information flow to ensure domestic stability and political legitimacy. American dominance in communication technologies and services is also a security concern for these states as they worry about external manipulation of online information and activities beyond their control. Once they adopt China’s model, they are likely to develop regulations that mirror China’s digital vision, particularly data localization requirements or restrictions on data transfer. The accompanying procurement of digital surveillance equipment and services from Chinese companies also raised concerns over China exporting its “digital authoritarianism” to the region.³⁶ Nevertheless, even China does not adopt a blanket ban on data transfers as it allows this practice provided that businesses meet certain requirements.³⁷ This opens up opportunities for the U.S. to shape digital standards toward a more open direction.

The widespread use of Chinese connectivity equipment in Southeast Asia also poses potential security risks. For example, potential software or hardware “back doors” in 5G equipment can be used to disable or take control of vital infrastructures such as power grids, financial markets, and transport systems, which can lead to chaos in hypothetical conflicts.³⁸ Other risks include collecting sensitive information and data, such as private information on citizens, trade secrets, or various types of intelligence. China can use its control over these sensitive data and infrastructure as leverage, coercing regional states to comply with Beijing’s geopolitical preferences at the expense of U.S. interests. While there have not been any public cases of Chinese companies placing backdoors on their equipment in Southeast Asia, their records aboard are not pristine. Huawei faced accusations of putting hidden backdoors in equipment for telecommunications company Vodafone and for a safe city project in Lahore (Pakistan).³⁹ However, they didn’t prevent Southeast

³² “Alibaba vs. Tencent: Taking the fight to Southeast Asia,” WGP Global, accessed on July 19, 2022, <https://wgp.global/alibaba-vs-tencent-taking-the-fight-to-southeast-asia/>.

³³ Brian A. Wong & Maria Monica Wihardja, “What can Indonesia learn from China’s digital economic transformation?” World Bank Blogs, February 24, 2022, <https://en.vietnamplus.vn/digital-transformation-roadmap-endorsed-at-53rd-aem-meeting/207793.vnp>.

³⁴ Adam Segal, “China’s Vision for Cyber Sovereignty and the Global Governance of Cyberspace,” in *An Emerging China-Centric Order: China’s Vision for a New World Order in Practice*, ed. Nadege Rolland (Seattle: The National Bureau of Asian Research, 2022), 87.

³⁵ *Ibid.*

³⁶ Lydia Khalil, “Digital Authoritarianism, China and Covid,” Lowly Institute, November 2, 2020,

<https://www.lowlyinstitute.org/publications/digital-authoritarianism-china-and-covid>.

³⁷ Hunter Dorwart, “Demystifying Data Localization in China – A Practical Guide,” Future of Privacy Forum, February 21, 2022, <https://fpf.org/blog/new-fpf-report-demystifying-data-localization-in-china-a-practical-guide/>.

³⁸ Stephen R Nagy & Hanh Nguyen, “Canada and the Indo-Pacific: Contributor, Bystander or Casualty?” p. 29.

³⁹ Daniele Lepido, “Vodafone Found Hidden Backdoors in Huawei Equipment,” *Bloomberg*, April 30, 2019, <https://www.bloomberg.com/news/articles/2019-04-30/vodafone-found-hidden-backdoors-in-huawei-equipment>; Meenakshi Ray, “China’s Huawei spied, installed data ‘back door’ in Pakistan: Report,” *Hindustan Times*, August 15, 2021, <https://www.hindustantimes.com/world->

Asian states from choosing Huawei or ZTE to build their national 5G networks, except for Malaysia, Singapore, and Vietnam.

Even if China does not deliberately collect data for malicious intent, the investment frenzy created by DSR and BRI led to another problem. In the rush to secure commercial benefits, some Chinese companies simply don't pay sufficient attention to data security and data privacy. With the Chinese government providing political support through national strategies, policy guidelines, and easy-to-access loans from state-owned banks, Chinese companies found themselves in an advantageous position to participate in major projects within BRI and DSR frameworks. They were also welcomed by leaders of developing states looking for ways to boost their countries' infrastructure, improve public services, and create new jobs, thus attracting more foreign investments. Consequently, many companies dive head-first into projects without much concern over data security, leading to data leak cases. For example, an Alibaba-hosted smart city database containing facial recognition scans of hundreds of people was discovered on a web browser, easily accessible without a password.⁴⁰ Recently, an anonymous Internet user offered to sell a database containing personal information of one billion Chinese citizens.⁴¹

Southeast Asia's varied digital capacity also posed difficulties. States with less than sophisticated digital infrastructures will find it more challenging to adopt more advanced technologies and applications such as Internet-of-Things or artificial intelligence. In cooperation with external partners, including the U.S., many might find U.S. preferences, such as rules on data privacy, data localization, and other technological regulations, beyond their capacity to comply. In other cases, states might not see tangible benefits from participating in high-standard digital economy agreements compared to traditional trade deals or see these requirements go against their national policies in trade, cybersecurity, and data governance. The fragmented legislation landscape in Southeast Asia also makes regulation harmonization more challenging since this process will take considerable time and effort. Because many countries

have multiple laws and regulations to govern just one aspect of the digital economy, states first need to streamline their fragmented regulations into single legislation to avoid confusion, then consult with other Southeast Asian states to develop an ASEAN-wide set of standards for the digital economy.

Recommendations

Given the future growth prospect of Southeast Asian digital economies and the growing focus on shaping norms for the digital areas, both the U.S. and Southeast Asia should continue to nurture and promote cooperation in the digital economy. Since the U.S. is unlikely to join any traditional trade agreements in the near future due to apathetic domestic sentiments, the digital economy is increasingly seen as a promising pathway to engage with Southeast Asia in trade, to shape regional digital norms in accordance with American visions and to bolster American standing there. Here are some steps the U.S. can consider:

- Improving Southeast Asia's digital connectivity: While it might be difficult for the U.S. to fund major infrastructure investments, it should continue small-scale projects to help disadvantaged groups (such as students from poor and rural backgrounds, elderly people, and disabled people) to have improved digital access. These groups risk being left behind during the digital transition due to a lack of digital skills and access to digital connectivity. Providing reskilling and upskilling opportunities for Southeast Asia is another way to prepare them for the digital era.
- Working with Southeast Asia to develop shared digital norms and standards: These norms should be inclusive enough to attract every regional country to adopt them to a certain extent. Negotiations for Indo-Pacific Economic Framework are excellent opportunities for both sides to share perspectives and work on a set of mutually acceptable rules on cross-border data flows, data localization, and protection of personal information in digital trade. Furthermore,

[news/chinas-huawei-spied-installed-data-back-door-in-pakistan-report-101629004305415.html](https://www.techcrunch.com/2019/05/03/china-smart-city-exposed/?gucounter=1&gucereferer=aHR0cHM6Ly93d3cuZ29vZ2xILmNvbS8&gucereferer_sig=AQAAAG3Ows8VfrrGuxEaxBm9eXhScnEztm).

⁴⁰ Zach Whitaker, "Security Lapse Exposed a Chinese Smart City Surveillance Project," Techcrunch, May 4, 2019, https://techcrunch.com/2019/05/03/china-smart-city-exposed/?gucounter=1&gucereferer=aHR0cHM6Ly93d3cuZ29vZ2xILmNvbS8&gucereferer_sig=AQAAAG3Ows8VfrrGuxEaxBm9eXhScnEztm

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⁴¹ "Hacker Claims to Have Stolen 1bln Records of Chinese Citizens from Police," Reuters, July 6, 2022, <https://www.reuters.com/world/china/hacker-claims-have-stolen-1-bln-records-chinese-citizens-police-2022-07-04/>.

the U.S. can employ its existing initiatives to bolster joint rules-making efforts, ensuring regional digital regulations will not evolve in a way that reduces U.S. competitiveness and undermines U.S. vision.

- Partnering with other countries: Limited resources and other domestic and international priorities will continue to hamper U.S. engagement in the region. Therefore, the U.S. can explore possibilities to cooperate with Japan, a major donor for infrastructure development in the region. Given China's firm footing in the regional digital economy, the U.S. should consider cooperation with China in certain areas to influence and shape the rules-making efforts from within, as long as this collaboration will not undermine U.S. interests.

The digital transition will bring major benefits for Southeast Asian states, such as post-pandemic economic growth and fairer and more sustainable development, as long as they have sufficient preparations regarding physical infrastructure, human resources, and legislation frameworks. However, states also need to be aware of possible security risks, especially from relying on one partner or donor. The following are some steps Southeast Asian states can consider taking advantage of the digital economy cooperation:

- Accelerating the negotiation process for an ASEAN digital economy framework: ASEAN needs to achieve consensus on regional digital norms and rules, so the organization will be in a better position vis-à-vis external partners in negotiations about shaping digital rules. This step means regional states must prepare sufficient legal and regulatory frameworks for the digital economy since their development is uneven, making cross-border collaboration and regulation harmonization challenging, and increasing costs for businesses to break into the market and expand operations.
- Seeking support from a diverse set of partners rather than relying on only one partner: Even though finding a credible alternative for China's investments in digital connectivity will be challenging, Southeast Asian states should also consider cybersecurity and national security risks that China's investments can pose. A more rational approach should balance economic demands and security concerns.

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