XI. Opportunities and Challenges of Digital Payment Development in Southeast Asia for China's Cross-Border E-commerce Companies

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Digital payment services subvert the characteristics of the past large single, low-frequency trade transactions, help enterprises to deal with the traditional payment business model that is difficult to match, the payment cost is high, the overseas market coverage is not high enough and other constraints to improve the payment security and protection capabilities and transaction operational efficiency, empowering global trade activities. In recent years, the rapid development of digital payment in Southeast Asian countries, this paper first defines the relevant concepts, and then studies and analyses the current situation of the development of digital payment in Southeast Asian countries, and discusses the development of digital payment in Southeast Asia on China's cross-border e-commerce opportunities and challenges.

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1 Introduction

With the rapid development of new digital technologies such as big data, cloud computing, artificial intelligence, blockchain, and so on, digital technology significantly impacts international trade and national development. Digital technologies such as big data, cloud computing, artificial intelligence, blockchain, and other new digital technologies have a disruptive impact on international trade, investment, and global production layout (Luo, 2022).

International trade, international investment, and global production layout have had a disruptive impact. According to the Digital Trade Development and Co-operation Report 2022 released at TIS 2022, the scale of global cross-border digital trade in services will exceed USD 3.8 trillion in 2021, with a year-on-year growth of 14.3 per cent, accounting for 63.6 per cent of trade in services. Among them, the total import and export value of China's digital services reached USD 359.69 billion, up 22.3% year-on-year, accounting for 43.2% of services import and export (Mogo's Digital Payments Subsidiary Carta Worldwide Ups Payments Volume in 2023, 2024). China's digital trade is developing rapidly, ranking among the world's top in terms of scale and growth rate. Against this background, China's trade with economies along the "Belt and Road" has been growing rapidly, with the scale and growth rate among the highest in the world.

In this context, China and the economies along the "One Belt and One Road" have continued to deepen international cooperation in the digital field, establishing the "Digital Silk Road" cooperation mechanism and the "Silk Road E-commerce" bilateral cooperation mechanism. At the same time, it has completed the construction of several international submarine fibre-optic cables and cross-border land cables. Meanwhile, several international submarine fibre-optic cables and transboundary land cables were constructed. Digital trade has become a key factor in resolving capacity shortages and accumulating new international competitive advantages in economies along the Belt and Road (WSPN Aligns with Fireblocks to Advance Digital Payments Ecosystem, 2024).

Digital trade has become an essential tool for resolving the capacity shortage of economies along the Belt and Road, accumulating a new type of international competitive advantage and realising leapfrog development (Behera & Kumra, 2023).

Existing research shows that in terms of digital infrastructure in Southeast Asian countries, the level of digital infrastructure in Southeast Asian countries is relatively good, and a digital economic governance system has been initially constructed. In terms of digital trade cooperation between China and Southeast Asian countries, the digital economy between China and Southeast Asian countries has a high degree of complementarity and a more sound cooperation system. Although there are typical constraints, such as a lagging governance system, overall digital trade cooperation between the two is gradually deepening (Ibrahim & I. R., 2023).

In recent years, the level of digital infrastructure in Southeast Asia has been constantly improving, especially in the digital payment sector. However, the impact of China's and Southeast Asia's trade on digital payments has been explored less in the literature. Accordingly, this paper examines Southeast Asia's current digital payment level situation. Further, it explores the opportunities and challenges for China's cross-border e-commerce to promote the development of China's cross-border e-commerce enterprises and provide insights for other cross-border e-commerce enterprises (Obe Survey: Digital Payments Offer Environmentally Conscious Utility Customers a Better Choice, 2023).

1.1 Definition of relevant concepts

Digital payment

Digital payment, also known as electronic payment, is a payment method based on digital technology, including electronic bank transfers, third-party payments, mobile payments, and so on (Sinha, 2024). Among them, third-party payment is a relatively common digital payment method which completes the clearing and settlement of funds through a third-party payment platform. On the other hand, mobile payment is a digital payment method based on mobile terminals, allowing users to complete payment operations through mobile devices such as mobile phones. Digital payment has the advantages of convenience, speed, efficiency, and security and has become an essential part of the modern payment system.

GMV

GMV (Gross Merchandise Volume), the total amount of commodity transactions, is the total amount of transactions within a certain period. It is mainly used in the e-commerce industry and generally includes the number of unpaid orders placed (Worldline and Google forge strategic partnership for cloud-based digital payments innovation, 2024). As an e-commerce platform metric, GMV is a core indicator for measuring platform competitiveness (market share). The general e-commerce platform GMV formula is:

GMV=sales+cancelled orders+rejected orders+returned orders

That is, GMV is the sum of paid and unpaid orders.

GTV

GTV, also known as the total transaction value, refers to the platform's total transaction amount. GTV does not deduct income reductions such as returns but represents the total value of the original transaction. The key difference between GTV and GMV is that GTV accounts for deductions such as refunds and cancellations, representing the total value at the original transaction price (Shanu, Anu, & V., 2024). The difference in actual use depends on platform attributes. For instance, GTV is used for platforms like Shell, Meituan, and Bixin, which primarily provide intermediary transaction services and involve fewer returns and cancellations. Meanwhile, GMV is more relevant for platforms like Taobao and JD.com, where merchandise transactions often include unpaid orders.

2 Status of digital payment development in Southeast Asia

The low penetration of banks and credit cards in Southeast Asia compared to many developed countries poses a significant barrier to the use of digital payments. Like many developing countries, consumer financial services in Southeast Asia are poorly designed, and consumers have difficulty obtaining credit cards from banks due to a lack of credit data. At the same time, opening a bank account requires submitting many documents, a series of cumbersome processes that discourage many people. In addition, due to the insufficient size of the card acceptance market in Southeast

Asia, the widespread acceptance of bank cards has not yet been fully realised, directly affecting cardholders' incentive to use their cards. The basis for the development of bank cards is their good universality. When the number of specialised bank card merchants in a country is below a specific number, cardholders will feel inconvenienced using bank cards and ultimately return to cash payments. As a result, Southeast Asia is still a "cash is king" society, and many people still rely on cash for offline purchases.

However, Southeast Asia's reliance on cash has declined in recent years. According to the Southeast Asia Internet Economy Report 2021, the proportion of money in Southeast Asia's payment GTV is expected to decrease from 60 per cent in 2019 to 47 per cent in 2025.

2.1 Rising share of digital payments in Southeast Asia

On 1 November 2023, Google, Temasek and Bain & Company jointly released the latest version of the Southeast Asia Digital Economy Report 2023 (Economy SEA 2023, hereinafter referred to as the "Report"). According to the Report, Southeast Asia's digital economy GMV is expected to grow by 11 per cent to US$218 billion in 2023. By 2025, Southeast Asia's digital economy GMV is expected to grow at a CAGR of 16% to US$295 billion.

As shown in Figure 1 below, compared with other regions, Southeast Asia has withstood global macroeconomic challenges with strong resilience; the GDP growth rate of the six countries in Southeast Asia has remained above 4%, and the inflation rate has dropped to 3%, which shows that the region is still entire of unlimited business opportunities. Trade enterprises that have already laid out their business plans or are on the lookout for them can also find valuable information through this report on how to cut into Southeast Asia successfully.

According to the report's statistics on the development of the digital economy in Southeast Asian countries, Indonesia remains the most prominent digital economy in Southeast Asia, with GMV reaching about $82 billion in 2023 and is expected to exceed the $100 billion mark by 2025.

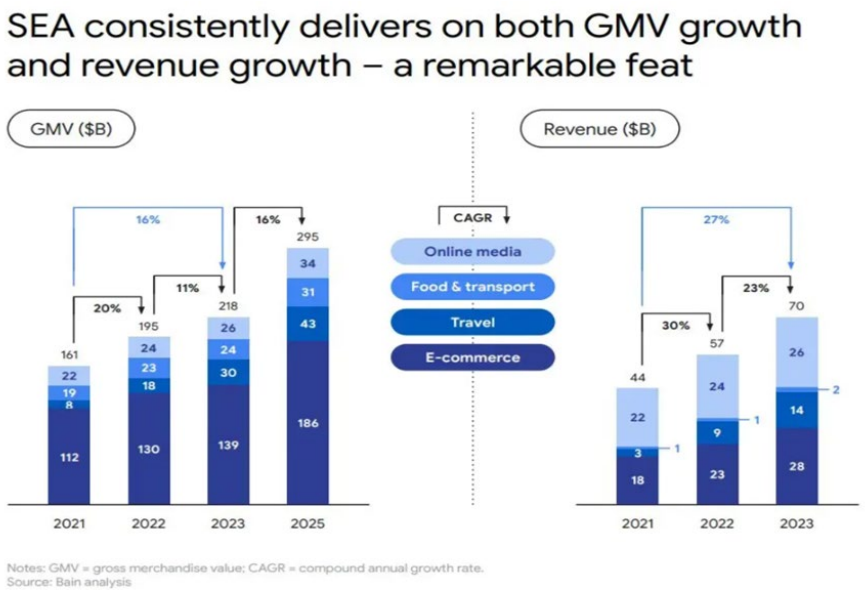

Figure 1 Economic development in the countries of South-East Asia
Data source: economy SEA 2023

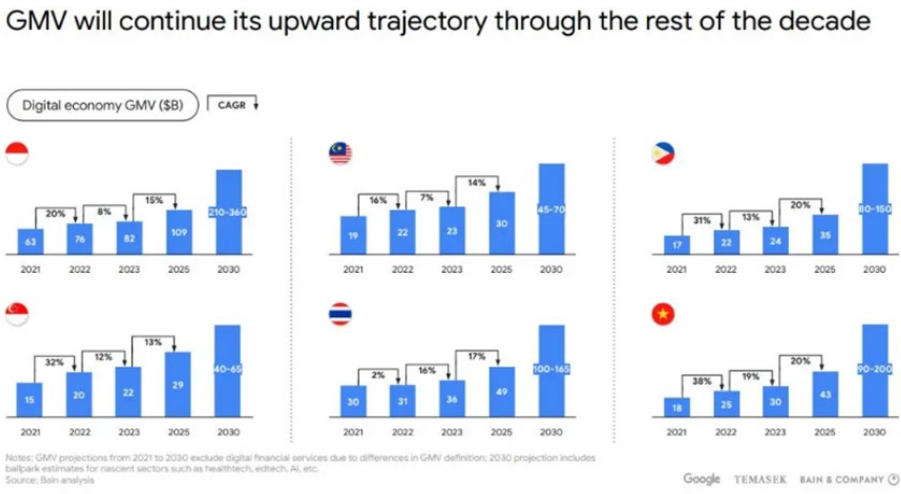

Figure 2 Development of the digital economy in South-East Asian countries
Data source: economy SEA 2023

In addition, regarding the compound annual growth rate of digital economy GMV by country from 2023-2025, the top three countries are Vietnam, the Philippines and Thailand. Among them, Vietnam and the Philippines topped the list with a growth rate of 20%; Vietnam's digital economy GMV grew from $30 billion to $43 billion, and the Philippines from $24 billion to $35 billion, followed by Thailand with a growth rate of 17%, the digital economy GMV grew from $36 billion to $49 billion. At the same time, the volume ranked second in Southeast Asia.

2.2 E-wallets in Southeast Asia

E-wallets are the most central category in digital payments in Southeast Asia. An e-wallet is a virtual wallet that allows users to transfer, receive, and save money and pay fees on their mobile phones. According to the Mobile Wallet Report 2021, a collaboration between London-based financial firm Boku and digital technology analyst firm Juniper Research, e-wallets overtook credit cards as the most widely used payment method globally in 2019, with penetration increasing further during the epidemic.

In general, many e-wallets require a bank or credit card to be tied to top-up. However, some e-wallets can be topped up in cash in Southeast Asia at convenience stores and selected offline outlets. This brings convenience to Southeast Asia, where bank and credit card penetration is low, and unbanked Southeast Asian consumers can use e-wallets to shop online and use other digital services. For example, Singapore's e-wallet Singtel Dash can be topped up from bank accounts and credit cards, in addition to cash top-ups at convenience stores such as Singtel and 7-11. Other Southeast Asian e-wallets that can also accept offline cash top-ups include e-commerce platform Lazada's Lazada Wallet, Malaysia's Touch 'n Go, Philippine e-wallets PayMaya and GCash, and Indonesian e-wallets OVO and GoPay. Only 13 per cent of Southeast Asia's unbanked urban population uses e-wallets. Still, e-wallet penetration among Southeast Asia's unbanked population is expected to soar to 58 per cent by 2025, according to a BCG survey released in 2020.

From a broader perspective, there are two types of mobile wallets worldwide. One is card-based mobile wallets, such as Apple Pay and Google Pay, which are more prevalent in developed markets. The other is top-up mobile wallets, such as China's Alipay and Grab's GrabPay, which are popular in emerging markets with low credit

card usage. Due to the fragmented nature of the Southeast Asian market, e-wallet players have also blossomed (Table 1). Each country is represented by multiple e-wallet players, ranging from mobile wallets owned by banking institutions to those launched by non-banking organisations. From a more segmented perspective, Southeast Asian e-wallets can be broadly categorised into three more groups: telecom operator-based, internet company-based, bank-based, etc.

Table 1 South-East Asian e-wallets

Telecom operator-based e-wallets	Internet company-based e-wallets	Bank-based e-wallets
Singtel Dash LinkAja Gcash True Money Viettel Pay	GrabPay GoPay ShopePay FavePay Zalo Pay RabbitLINE Pay OVO DANA PayMaya Momo Boost	DBS PayLah！ Pay Anyone JakOne Mobile DiskarTech Diskar Tech K PLUS（K+）

3 Opportunities

3.1 Southeast Asian governments' support for digital payments

In recent years, Southeast Asian governments have also attached importance to the development of digital payments. To keep up with the trend of digitalisation, Singapore, Malaysia, and the Philippines have issued several digital banking licenses in recent years to facilitate the development of digital payments by further improving the local financial network (Table 2).

Unlike traditional banks, digital banking no longer relies on a network of physical branches. Instead, it uses the digital network as the bank's core, providing services such as bank reconciliation, cash withdrawals, managing cheques, mobile banking, bill payments, finance and monitoring transactions. Among these, virtual bank cards, e-wallets, and mobile banking are digital payment products of digital banks. In the case of Tonik, which is licensed as a digital bank in the Philippines, by using the Tonik mobile app, a user can open a bank account within five minutes using an ID

and a selfie. Additionally, users with a Tonik bank account can top up their account through their bank, debit card, or cash at nearly 10,000 retail agents nationwide.

Table 2 Relevant Policies in South-East Asia

Months and year	Policy
2020.12	The Monetary Authority of Singapore (MAS) has announced the list of successful applicants for this year's digital banking licences: a consortium of Grab and SingTel, as well as Southeast Asian tech giant Sea Group (Winterhaven Group), were awarded a complete digital banking licence (Digital Full Bank); and a consortium led by Ant Group and Greenland Financial Investment Holding Group were awarded a wholesale digital banking licence (Digital Wholesale Bank).
2021.9	The BSP, the central bank of the Philippines, awarded its sixth digital banking licence to local fintech firm Voyager Innovations. The other five Philippine digital banking licence holders are GOtyme, UnionDigital, Overseas Filipino Bank, UNOBANK and Tonik Digital Bank.
2022.4	Five digital banking licences were issued in Malaysia, with successful applicants being a consortium represented by Grab, a consortium represented by the Dung Hai Group, a consortium represented by RHB, Malaysia's fourth largest bank, a consortium represented by Aeon Financial Services, and a consortium led by KAF Investment Bank Sdn Bhd.

Digital banking has been particularly beneficial for users in rural areas. Traditional banks tend not to set up branches in rural areas of Southeast Asia because of the high cost of building infrastructure, as opposed to conducting financial services in densely populated, high-traffic cities. Digital banking, on the other hand, can be a good way to meet the needs of rural users who want to use digital payments to make simple digital transactions at the touch of a mobile phone button. Digital banks will play an essential role in the digital financial ecosystem," said Benjamin E. Diokno, governor of the Bank of the Philippines. These additional partners can further improve market efficiency and expand Filipinos' access to a wide range of financial services, enabling us to more quickly achieve the stated financial inclusion goals of shifting at least 50 per cent of total retail payment transactions to digital by 2030, as well as about 70 per cent of adult Filipinos having a transaction account." In an environment of financial inclusion, Southeast Asian users are more likely to be exposed to and increase the frequency of digital payments, boosting the industry's growth.

3.2 Epidemic spurs users to embrace digital payments

The epidemic has fueled popular demand for digital consumption, and the continued use of digital services has become a new way of life in Southeast Asia, with the Southeast Asia Internet Economy Report 2021 showing that 90 per cent of those who used digital services in 2020 will continue to do so in 2021. The growth of digital consumers in Southeast Asia is even more promising when compared with the epidemic as a cut-off point. The report notes that 60 million new digital consumers have been added in Southeast Asia since the start of the epidemic, with 20 million becoming new digital consumers in the first half of 2021 alone.

In many areas of digital consumption, digital payments have become an essential vehicle for completing online transactions. This is because, during the height of the epidemic, Southeast Asian country's home segregation measures were taken one after another. Along with the shutdown of offline activities, many consumer activities have shifted to online, and payment methods have also moved to online. During such a special period, the acceptance of digital payments has been growing among both C- and B-end users.

Consumer e-wallet usage is up 45 per cent compared to the pre-epidemic period, and the value of transactions generated is expected to double by 2025. The convenience of e-wallets and incentives from e-commerce platforms are the main reasons consumers opt for digital payments. Additionally, the contactless feel of digital payments to meet the needs of Southeast Asian consumers during times of outbreaks is also driving consumers to opt for digital payments. According to Fintech News, in April 2021, Prompt Pay, an instant payment provider in Thailand, saw a year-on-year increase of around 80 per cent in the value of transactions. In Singapore, instant payments grew 58 per cent from last year.

As consumers' use of digital payments increases, it has also fueled merchants' acceptance of digital payments. According to the Southeast Asia Internet Economy 2021 report, over 90 per cent of merchants accept digital payments, citing digital financial services as an essential factor in ensuring their business can grow. In addition, another 75% of merchants find digital payments more convenient, and 72% of merchants say they will continue to increase the frequency of digital payments in the next 1-2 years. In the Indonesian market, merchants' adoption of

digital payments has also increased significantly. From December 2020 to October 2021, the number of merchants adopting the QRIS system in Indonesia increased from 5.8 million to 12 million.

Even though the epidemic's peak has passed and offline activities in Southeast Asian countries have returned to normal, many local users still insist on using digital payments. According to a BCG research study, 60 per cent of urban Southeast Asian users said they would continue to use e-wallets even without incentives such as cashback and discounts. Just like getting used to e-commerce shopping, many Southeast Asian consumers also developed the habit of using digital payments during the outbreak, and merchants continued to support digital payments to cater to consumer preferences.

4 Challenges

4.1 Lack of mobility of innovation factors

Under the "Belt and Road" framework, there is a lack of fluidity in the flow of innovation factors among the countries along the route. There are barriers to the inter-regional mobility of capital, talent, technology and other factors, and inter-regional and inter-country communication lacks the support of service platforms. Due to information asymmetry, physical distance and other natural barriers, as well as factors such as the difficulty of capital intervention, the slow flow of talent, the lack of technology and other factors leading to the development of the digital economy within the region, there are specific difficulties. The synergistic efficiency of traditional industries is low, and there are many obstacles to starting a new industry.

4.2 Limited trade protection

The gap in the regional legal agreement on digital security between Southeast Asian countries and China has led to the failure of trade protection, cyber fraud, and frequent personal privacy data leakage incidents. As China and the "One Belt, One Road" agreement countries have in-depth cooperation in infrastructure construction, especially in transport and energy, the improper protection of data and

business secrets can directly endanger national security. Therefore, the lack of a legal mechanism for data security will quickly lead to ineffective regulation.

4.3 Lack of relevant talents

Countries along the "Belt and Road" are constrained by their economies, cultures, and education levels, and they lack professional talents and talent training systems that match the current international digital development. With China's "Belt and Road" countries signed an agreement, West Asia, North Africa, South Asia, and Southeast Asia, part of the country generally exists in people's low level of education, the overall economic development of the region lagging behind and so on. The number of talents in the region and the ability to innovate are relatively scarce, and talents and innovation are critical engines for improving digital informatisation and economic development.

4.4 Infrastructure remains relatively underdeveloped

Southeast Asian countries are lagging in developing traditional and new infrastructure, which limits the development of digital technology and commerce. The countries' economies along the "Belt and Road" are mainly in the developing stage, and the construction of traditional infrastructures, such as highways, ports, airports and energy sources, is relatively weak. Due to the poor economic foundation, low education penetration rate and a significant gap between the level of informatisation and the international average level, this difference makes China face significant challenges in the development of the digital economy in Southeast Asian countries.

5 Conclusions

Digital payments are a good business for both entrepreneurs and investors. Scott Krivokopich, co-founder of Southeast Asian venture capital firm 1982 Ventures, which focuses on investing in fintech projects, has said that payments are an industry with a powerful network effect. In the first few years of payment, companies getting financing is straightforward; many companies are crazy expanding at the expense of all kinds of subsidies to grab market share. The payment market in the last two years has gradually returned to rationality, mainly due to the impact of this epidemic,

which may accelerate the industry reshuffle. With the development of e-commerce, digital payments in Southeast Asia are also developing rapidly. However, the pattern of its development is still very fragmented and immature, and there are still many opportunities, such as the reconciliation and clearing of payment systems. In Indonesia, there are still many companies that are used to paying with banks. Still, digital payments are much more convenient, with faster and more efficient operation of income and expenditure flows. Therefore, the Chinese government and companies can seize the opportunity to work to overcome the challenges of taking advantage of the digital economy and developing trade with Southeast Asian countries.

This paper attempts to study the current status of digital payments in Southeast Asia. The study found that the proportion of digital payments in Southeast Asia is increasing. Indonesia is still the most significant digital economy in Southeast Asia. As the core of digital payment e-wallets, the penetration rate of e-wallets in Southeast Asia is increasing and is expected to reach 58% in 2025. Southeast Asian government policy supports the digital economy; the epidemic makes more users accept digital payments, which will give cross-border e-commerce enterprises opportunities. However, they must pay attention to overcoming the lack of mobility of innovative elements, limited trade protection, and other challenges. Therefore, the Chinese government and enterprises can seize the opportunities and overcome the challenges of taking advantage of the digital economy and developing more trade with Southeast Asian countries.

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