The Digital Payment Revolution: Four Case Studies Across Asia

More societies are moving toward a cashless system of payment, but it takes an investment in digital infrastructure to get there. This article looks at the development of digital payments in China, India, Singapore, and Indonesia.

The evolution of the digital payments industry that has been taking place around the world during the COVID-19 pandemic is irreversible. The use of contactless, real-time payments became a public health measure to reduce the risk of virus transmission, and there is no indication that this will change post-pandemic. This doesn't just apply to traditional or large companies. Across the world, governments are pushing the boundaries of on-the-go transactions, public transport networks are upgrading their systems to accept them, and small businesses are using this agility to their advantage. But how are governments able to create infrastructure for digital payments that allows for healthy competition in the payments landscape?

McKinsey & Company published "The Future of Payments in Asia" report in which its experts state that payments have never been more critical to Asia's financial services ecosystem than they are right now. In terms of payments-revenue growth, Asia has surpassed all other areas in recent years. In 2019, the region generated nearly half of all worldwide payments revenue, at over $900 billion. Payments have also grown in importance in Asia's financial scene, currently accounting for 44% of total banking revenues, up from a third in 2007.

China, India, Indonesia, and Singapore present relevant case studies to understand this development. Differing levels of involvement by governments in setting up the digital payments infrastructure are contributing to differences in the competitive structure of the mobile payments industry.

Background on the Payments Industry in China, India, and Southeast Asia

There were 224 million unbanked adults in China and 191 million in India in 2017, as indicated by the World Economic Forum. According to a June 2021 World Bank report, Asia is on track to exceed 50% of world GDP by 2040 and account for 40% of global consumption, which represents a real shift in the world economy's center of gravity. China and Singapore are among the most digitally advanced countries in the world. China joined this group

at an impressive speed. However, when comparing Asian states, there are different dynamics within the continent due to unique demographic and economic factors.

In this context, there are three main incentives to the rise of digital payments: the rapid expansion of mobile internet access, vast data sets available for credit scoring, and developing regulatory frameworks towards providing more certainty and transparency. Southeast Asia is becoming one of the most developed regions for digital payments, according to the World Bank, as a result of several agreements between Southeast Asian countries in integrating their financial systems. Increasing adoption of ISO 20022 (a standardization approach to financial initiatives) can simplify communications between additional payment systems. Another trend points to the proliferation of bilateral agreements among other Asian countries to integrate their payment systems. In terms of the regulatory framework, China had a fairly flexible regulatory regime at the beginning of the digital payment era. In the case of India, minimal requirements allowed quick mass onboarding and more complex cross-sell services to an engaged user base.

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China

A defining characteristic of the payment industry in China is the ubiquitous use of QR codes. In contrast to bank card processing, which requires expensive point-of-sale hardware or near-field communication technology devices used by Apple Pay, QR codes are very inexpensive. This has allowed small merchants to accept mobile payments because they simply need to print out a QR code to be scanned by customers at checkout. Protocol, a technology news website, reported that there has been a recent push towards standardizing QR codes so that a merchant can use a single QR code to accept payments through different apps.

Two players with a large and deeply engaged base of customers dominate this landscape. Alipay was a way to facilitate e-commerce transactions on the Taobao online shopping platform, also owned by Alibaba. WeChat, a popular social network, was boosted by the huge success of its "red envelope" service around the Chinese New Year. Since WeChat and Taobao already had millions of active users from their main products, it was relatively easy for them to acquire customers for whom the payment services were a convenient add-on. The apps' closed-loop ecosystem has been pivotal. According to TechCrunch, Alibaba and Tencent together account for an estimated 94% market share in the payments market in China in 2020.

Due to the size of customers' deposits with these payment giants, WeChat Pay and Alipay were in a strong position to push their system across their network of merchants to further promote user adoption. In addition, according to a Chinese payment app expert, the payment platforms also have the ability to "build customer habits" and "access customer behavior as data points to monetize on the lending side." With a strong position in payments, lending, and wealth management within China, these players are pursuing an overseas fintech expansion, through launching localized versions of their apps as well as making strategic investments.

The government has been catching up. The People's Bank of China has been researching and developing a Central Bank Digital Currency (CBDC), filing more than 70 patents to date. According to the officially released plan by the Central Bank, CBDC will play the roles of digital currency and electronic payment, meeting both the needs of portability and anonymity. It remains to be seen how the official launch of the state-sponsored digital currency would disrupt the mobile payments landscape in China and challenge the duopoly of WeChat Pay and Alipay.

India

Compared to the People's Bank of China, the Reserve Bank of India (RBI) plays a more active role in shaping the mobile payment landscape in the country of more than 1 billion. In November 2016, the RBI's decision to withdraw 500-rupee and 1,000-rupee notes from circulation and the resulting shortage of cash played a major role in the

increased adoption of cashless payments. Moreover, the National Payments Corporation of India (NPCI) — a nonprofit organization under management by the RBI — launched the United Payments Interface (UPI) in 2016. UPI is an open and interoperable direct bank transfer platform that supports multiple bank accounts in a single mobile application, offering a seamless and more convenient user experience, especially for daily peer-to-peer transactions and transactions with merchants. Coupled with other technologies such as Aadhaar, India's unique digital identity system launched in 2010, the government has set up a level playing field for big techs and startups alike to explore the enormous potential of this payment market.

Based on the number of UPI transactions completed in 2019, the top three players in the market by transaction volume are Google Pay, PhonePe, and Paytm. There are a few differentiations between these payment platforms. They drive user engagement by expanding in-app features (for example, Google Pay allows users to recharge prepaid mobile phone plans or buy gold) and offering cashback rewards or coupons to be redeemed at partner merchants. Late entrants into the market include Amazon Pay (2019) and Facebook's WhatsApp (2020), which have yet to catch up to these three dominating players but are investing heavily to attract new customers.

Even though there are more competitors, as with the case of China, the battle for digital payments in India is a battle of giants, with cash-infused players (Paytm is backed by Ant Group and SoftBank Vision Fund; PhonePe is backed by Walmart) vying for dominance with tech giants like Google, Facebook, and Amazon. However, the market remains under-utilized and there are lots of gains to be made with hundreds of millions of consumers still primarily using cash. According to Yatharth Seth with Boston Consulting Group, in order to capture this lucrative market, both incumbents and new entrants have to find innovative solutions to overcome the remaining challenges, including the high risk of fraud, high failures rate, and high technology adoption barriers for new users.

Singapore

Known for its innovation, Singapore has one of the most advanced payment systems in the world. However, this innovation effort in payments was mostly led by the incumbent banks in collaboration with the Monetary Authority of Singapore (MAS).

Singapore's real-time payments in Southeast Asia by transactions present a 23% five-year compound annual growth rate, achieving 393 million transactions in 2025 as forecasted by ACI Worldwide and establishing itself as a mature market for real-time payments. PayNow is Singapore's leading real-time payment solution. Based on a peer-to-peer (P2P) instant fund transfer service built on the FAST infrastructure, it allows users to transfer funds from one bank account to another using proxy options such as a national ID or a mobile number. PayNow also allows instant B2C transfers and real-time B2B payments.

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PayNow was created by 10 banks and three non-bank financial institutions (NFIs) and is regulated by MAS. Moreover, MAS formulates policies and initiatives focused on leading fintech innovation, such as its Smart Financial Center in Singapore. According to an executive in a fintech company in the region, the banks and the MAS will continue to play a big role in innovation in Singapore.

The tech unicorn Grab is also part of the competitive landscape in payments, but it is still better known as a super app and not as a payment system. Grab added QR codes with GrabWallet, but it still uses the shared infrastructure that all banks use, the Singapore Quick Response Code (SGQR), which is supervised by MAS.

Even though wallets have become more common in Singapore, they are not as prevalent as in other countries in the region. Singapore is an advanced economy, and 98% of the population is banked, according to Statista, which reduces the need for this type of technology. Additionally, merchants already have widespread access to point of sale (POS) systems.

Apart from the increase in cashless payments, COVID-19 has brought another significant trend to Singapore. Buy Now Pay Later solutions, which allow payment in

installments, have become more common during the pandemic. According to Bloomberg, this increase is concerning because it is leading to higher debt, particularly among younger consumers. The Monetary Authority of Singapore has crafted media campaigns to warn about the potential consequences of using this payment option.

Indonesia

Digital payment is becoming increasingly popular in Indonesia, Southeast Asia's largest economy. Cash is king in Indonesia, where paper money exchanges still represent 85% of transactions by volume, according to Reuters. But digital payments are gaining ground. The government ushered in the payment revolution by establishing the Indonesia Payment System Blueprint 2025, an instant payment infrastructure that is creating opportunities for fintech companies to grow and innovate.

Digital payment in Indonesia began in the early 2000s and is divided into retail and wholesale. Currently, more than 85% of transactions are processed through SKNBI (retail payment method) because Indonesia's micro and small businesses account for 99% of all businesses and contribute 60% of Indonesia's GDP, according to McKinsey & Company.

The Covid-19 pandemic has accelerated the trend towards digital payments. According to Bank Indonesia and the Asian Banker Research, the value of electronic money transactions reached approximately $14 billion in 2020, representing year-on-year growth of 38.6%.

Two trends are enabling the growth of cashless payment methods: Firstly, smartphone penetration increased from 90 million users in 2015 to more than 180 million users in 2020, accounting for approximately 67% of the population. Secondly, the number of fintech companies grew from 20 e-wallets, mainly banks, in 2015 to more than 55 e-money licensed operators in 2020, according to Bank Indonesia, the central bank of Indonesia. GoPay and OVO are the top two e-wallets with the highest number of active monthly users. Both apps were launched in 2016 and are backed by super-apps. GoPay is the mobile wallet of the nation's largest multi-service platform, GoJek. Meanwhile, OVO has captured more customers driven by its collaboration with Grab, Southeast Asia's regional leading super-app, and Tokopedia, Indonesia's largest e-commerce platform.

Indonesia is currently in the developmental stage of launching its real-time payments system but has all the hallmarks of a country that could see rapid adoption of real-time payments. In August 2021, Bank Indonesia rolled out its real-time retail payment system infrastructure (BI-FAST) that is available 24/7. BI-FAST is an infrastructure for faster interbank transfers as well as card-based payments, similar to India's UPI, Singapore's PayNow, and Thailand's PromptPay. Additionally, Bank Indonesia officially launched the QR code standardization called the QRIS on January 1, 2020. The standardization of the QR code provides an integrated payment system that is efficient, inexpensive, and secure. It also improves interconnectivity in payment systems so that e-wallets from different providers can be used in one QR scanning system. In the meantime, the government is standardizing Open Application Programming Interface-based open banking, an initiative aimed at stimulating the digital transformation of the banking system and facilitating collaboration between banking and fintech players through open banking. The infrastructure provided by the government promotes competition for new market entries and incumbents.

Conclusion

Asian states are creating infrastructure for digital payments by leveraging their specific demographics, technologies, and regulations. Taking India, China, and Southeast Asia countries in the analysis, we verified that state-led payment system infrastructure created a more competitive payment industry landscape in India (UPI) and Indonesia (BI-FAST). On the other hand, China's infrastructure was private-led (WeChat and Alibaba), so only those two players dominate in the country. In Singapore, incumbent banks lead the innovation efforts in collaboration with the government. As a consequence of the new economic exchange platforms, point-of-sale payments and financing platforms will undergo a major transformation to ensure that digital-first options are viable. Additionally, digital coins will become one of the preferred methods for consumers to pay for their purchases, putting Asia on the edge of digital payments trends that will dynamize transactions and foster further economic growth. Regardless of the form of development, the digital payment evolution in Asia will continue in a similar fashion, with more innovation and competition.

In Asia and around the world, the ongoing pandemic accelerated a revolution in the digital payments industry. Players across the ecosystem, including incumbent banks and financial services organizations, emerging fintech players, and established enterprises in adjacent industries like big tech and telecommunications, are expected to be seeking a number of expansion activities, particularly opportunities to cross-sell other financial services such as insurance, loans and wealth management services. While certain aspects of this evolution will happen naturally, actions from government regulators will also play a key role in shaping the outcome. While the future is digital, the cashless revolution has evident ramifications for unbanked communities, posing both societal challenges and opportunities for inventive actors to provide more inclusive solutions.

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