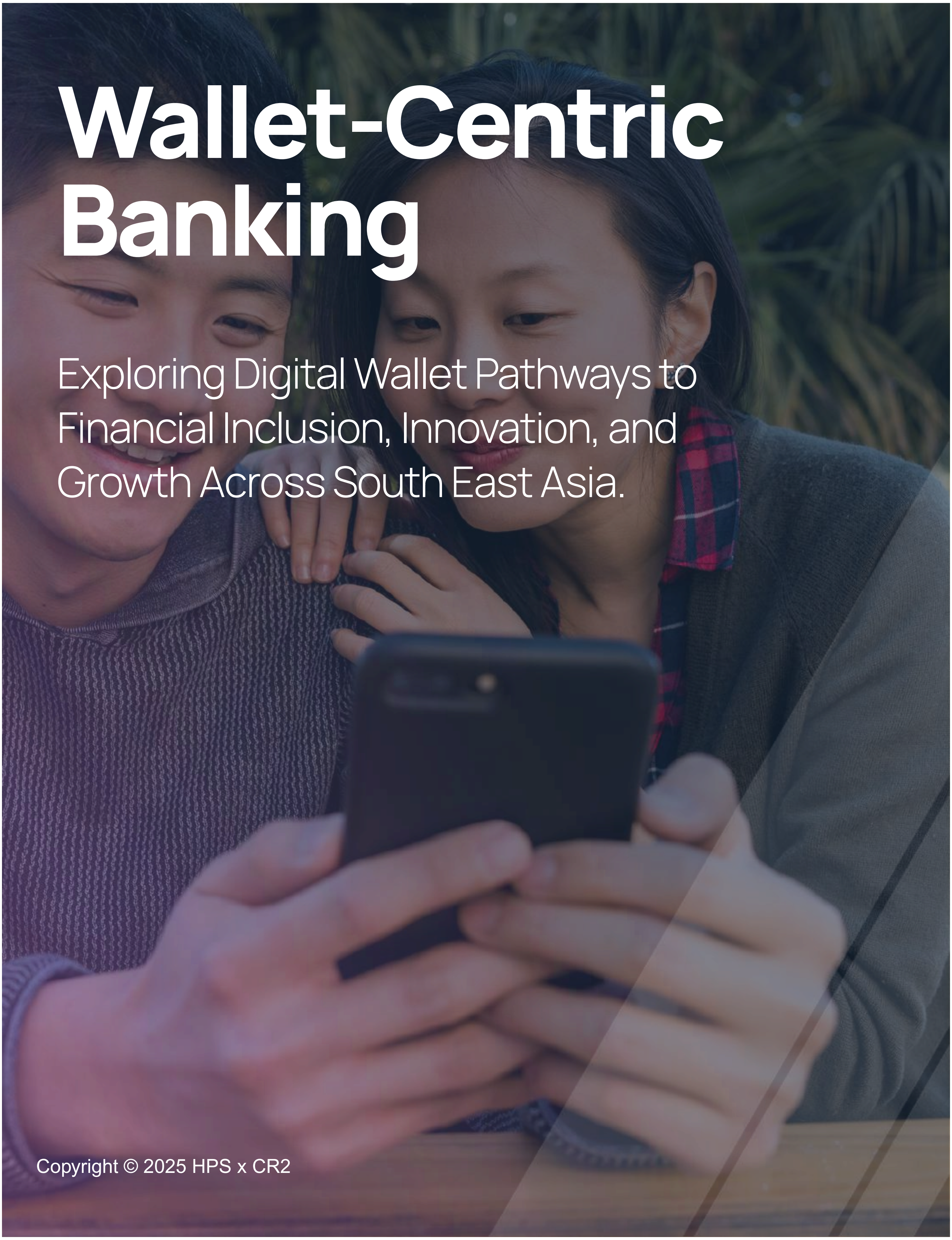
HPS x CR2
HPS Group



Wallet-Centric Banking

Exploring Digital Wallet Pathways to Financial Inclusion, Innovation, and Growth Across South East Asia.

Contents

	Executive Summary	**03**
1	**Digital Revolution in South East Asia: An Era of Opportunities**	**04**
1.1	The Unprecedented Surge in Digital Adoption	04
1.2	The Economic Engine: E-commerce, SMEs and the Digital Consumer	06
1.3	The Evolving Regulatory Frameworks	07
2	**Navigating the Landscape: The Challenges**	**08**
2.1	Ensuring Robust Data Privacy, Security and Consumer Trust	08
2.2	Achieving Interoperability: Connected Payment Ecosystems	10
2.3	The Challenges Posed by Fintechs	10
3	**Defining Wallet-Centric Banking - beyond Payments to Ecosystems**	**11**
3.1	What is Wallet-Centric Banking	12
3.2	Why Should Banks Lead Wallet Innovation	12
3.3	Key Characteristics and Consumer Benefits of Wallet Centric Banking	14
4	**Pathways to Financial Inclusion through Wallet-Centric Models**	**15**
4.1	The Financial Inclusion Imperative: Bridging the Gap (Overcoming Traditional Barriers to Access)	16
4.2	Designing for Inclusivity: Reaching Rural and Marginalized Communities	17
4.3	Empowering the Unbanked and Underbanked: Case Studies across the Globe	18
5	**Igniting Innovation: Technologies and Products Shaping the Future**	**19**
5.1	The Mobile-First Foundation: QR Codes, NFC, and Seamless Payments	20
5.2	Artificial Intelligence and Big Data: Personalization, Enhanced Security, & Intelligent Credit Scoring	21
5.3	Blockchain and Distributed Ledger Technology (DLT) for Cross-Border Payments	22
5.4	Novel Financial Products and Services within the Wallet	23
6	**Fueling Growth: Strategies for Financial Institutions and Economies**	**24**
6.1	Expanding Market Reach and Customer Acquisition at Scale	24
6.2	Unlocking New Revenue Streams and Enhancing Customer Lifetime Value	25
6.3	Powering E-Commerce and Supporting SME Digital Transformation	26
6.4	The Role of Data Analytics in Driving Growth and Personalization	26
7	**The Future of Wallet-Centric Banking in South East Asia**	**27**
7.1	Designing Winning Wallet-Centric Propositions	27
7.2	The Emergence and Impact of CBDCs	28
7.3	Hyper-Personalization and AI-Driven Financial Wellness	29
7.4	Enhancing Consumer Access, Experience, and Engagement	30
7.5	Embedded Finance and BaaS: A Strategic Pathway for SEA Banks	31
8	**Conclusions**	**33**

Executive Summary

South East Asia (SEA) is at the forefront of a profound financial transformation, significantly shaped by the rapid rise and adoption of wallet-centric banking. This shift is fueled by high mobile penetration, a substantial unbanked and underbanked population, and the vibrant expansion of digital economies across the sub-region.

Digital wallets are swiftly moving beyond basic payment functionalities to become comprehensive financial ecosystems, increasingly central to the digital lives of consumers. This evolution presents financial institutions (FIs) in SEA with unparalleled opportunities for growth, service diversification, and deeper customer engagement.

This white paper delves into the key pathways through which wallet-centric banking is reshaping the financial services sector in South East Asia. It examines how these models are systematically dismantling traditional barriers to financial access, thereby fostering greater financial inclusion for millions.

The paper further explores the wave of innovation driven by technologies such as Artificial Intelligence (AI), Big Data analytics, QR code ubiquity, and Blockchain for cross-border payments, alongside novel financial products that are creating richer, more personalized, and secure wallet-based experiences tailored for the SEA market.

Additionally, it outlines strategic avenues for growth, enabling FIs to leverage wallet-centric approaches for significant market expansion, development of new revenue streams, enhanced customer engagement, and critical support for the thriving e-commerce sector and the vital Small and Medium Enterprises (SMEs) that form the backbone of South East Asian economies.

Looking ahead, the future of wallet-centric banking in SEA will be further shaped by the continued growth of super-apps, the emergence and impact of Central Bank Digital Currencies (CBDCs), advancements in hyper-personalization through AI-driven financial wellness tools, and enhanced security measures incorporating biometrics, tokenization, and next-generation fraud prevention. A key strategic consideration for banks will be navigating the rise of embedded finance and the potential of Banking-as-a-Service (BaaS) models to compete and collaborate within these evolving ecosystems.

While the potential is immense, the journey is not without its complexities. Critical challenges such as achieving interoperability, ensuring robust data security and privacy, bridging the digital literacy gap, and navigating the dynamic fintech landscape require strategic solutions. FIs in South East Asia that strategically embrace wallet-centric models, with a keen focus on customer experience, technological leverage, regional nuances, and future trends are primed to thrive in this new era of finance.

Better Together

This white paper is brought to you by HPS and CR2, global leaders in financial services technology. HPS delivers world-class payment solutions on a global scale, seamlessly complemented by CR2's expertise in digital banking and payments innovation. Together, at the intersection of payments and digital banking, we create a unique combination of solution capabilities and market experience. Both companies are on a mission to redefine global payments and banking for a digital-first future. We share a culture of innovation, driven by a relentless focus on delivery and customer success. This commitment is reflected in our blue-chip roster of banks, telcos, and fintech clients.

Simple, Seamless, Secure.

About Us

About HPS

HPS is a multinational company and a leading provider of payment software and solutions for issuers, acquirers, card processors, independent sales organisations (ISOs), retailers, mobile network operators (MNOs), and national & regional switches around the world.
PowerCARD is HPS's comprehensive suite of solutions that covers the entire payment value chain by enabling innovative payments through its open platform that allows the processing of any transaction coming from any channel, initiated by any means-of-payment. PowerCARD is used by more than 500 institutions in over 95 countries.
HPS has been listed on the Casablanca Stock Exchange since 2006 and has offices located in major business centres across Africa, the Americas, Asia-Pacific, Europe, and the Middle East.

For more information, please visit: www.hps-worldwide.com

About CR2

CR2 is a leader in digital banking and payments solutions. With offices in Dublin, Dubai, Jordan, India and Australia, the business powers over 90 customer implementations across more than 50 countries around the world.
Bankworld their core platform, offers the broadest range of channel capabilities in the market and uniquely integrates Digital Banking, Digital Wallet and Payment Hub capabilities (Card Issuing, ATM Driving, Merchant Acceptance). In addition, CR2's Partner Ecosystem combines the confidence of BankWorld with access to pre-integrated third-party fintech innovation.
The business is on a mission to help financial service providers to build world class customer experiences through technology that consistently scales and delivers.

For more information, please visit: www.cr2.com

01 Digital Revolution in South East Asia: An Era of Opportunities

The South East Asian region is currently experiencing a digital financial revolution driven by swift technological adoption and distinctive demographic and economic characteristics. This transformation is fostering an environment ready for innovative financial service models, with wallet-centric banking rapidly emerging as a key influence. For financial institutions (FIs) aiming to navigate and leverage the resulting opportunities, understanding the nuances of this revolution is paramount.

1.1 The Unprecedented Surge in Digital Adoption

Across South East Asia, the proliferation of internet connectivity and smartphone ownership has achieved remarkable levels, fundamentally altering how populations interact, conduct transactions, and access services. The broader Asia Pacific region's digital banking market, valued at USD 2,276.37 billion in 2024, is projected to surge to USD 5,124.52 billion by 2033, expanding at a CAGR of 9.43%.[1]

This growth is supported by high internet penetration and a significant number of active smartphone users utilizing devices for online banking.[1] Emerging markets in the Asia-Pacific, including many in SEA, saw mobile internet penetration climb significantly, with forecasts approaching near-universal coverage by 2029.[2]

Globally, digital wallet payments are anticipated to reach US$19.6 trillion by 2027, with the Asia-Pacific region, including SEA, leading this charge with high adoption rates.[3] Mobile internet penetration in APAC reached 51% by 2023 and is projected to climb to 61% by 2030, with markets like Singapore already exceeding 80%.[4]

This surge is largely fueled by a digitally native, youthful demographic in South East Asia that increasingly demands convenient, intuitive, and mobile-first financial solutions. Their expectations are shaped by seamless, personalized interactions offered by global technology giants and regional super-apps.

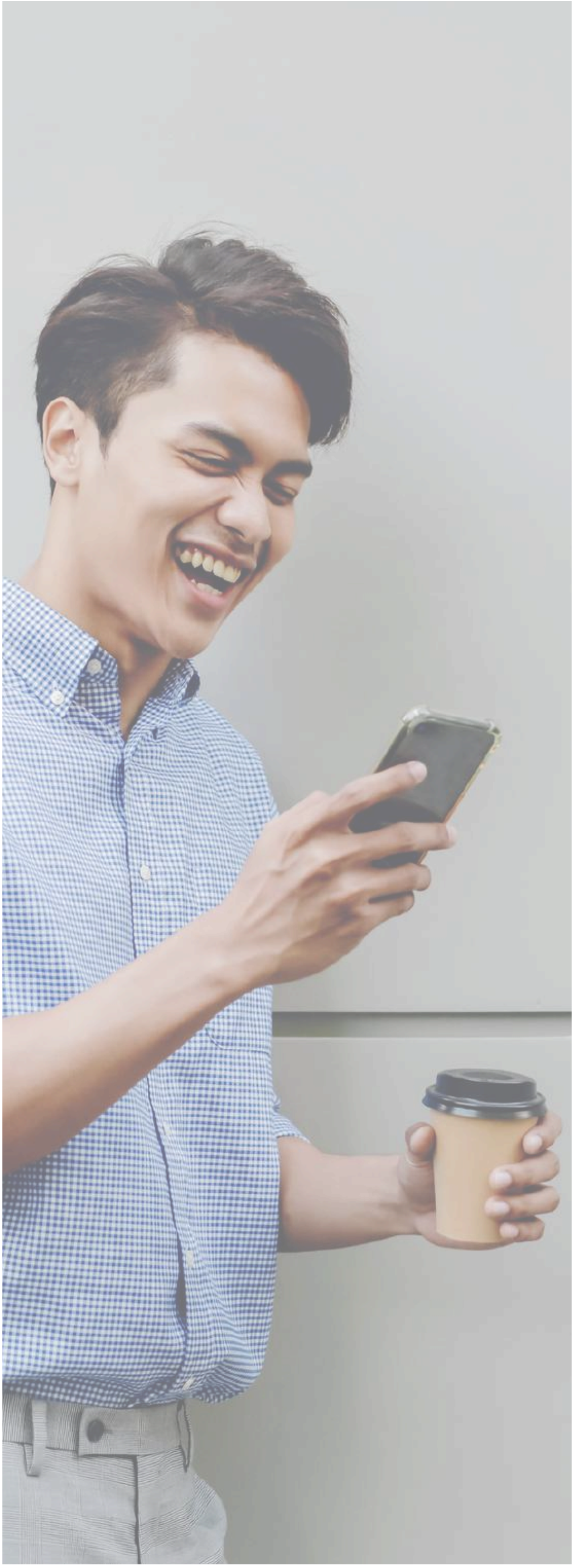
This creates an "**expectation chasm**" where traditional FIs risk obsolescence if they fail to adapt to user experiences set by leading digital service providers.

Furthermore, many South East Asian markets are witnessing a "**leapfrog phenomenon**".

Populations are bypassing traditional banking infrastructure, like extensive branch networks, and moving directly to mobile-centric financial solutions.[5]

High mobile penetration becomes a fundamental enabler, redefining the entry point for financial services and shifting the paradigm from physical presence to "**pocket presence**".

The surge in the use of digital wallets is largely fueled by a digitally native, youthful demographic in South East Asia that increasingly demands convenient, intuitive, and mobile-first financial solutions.



1.2 The Economic Engine: E-Commerce, SMEs and the Digital Consumer

The ascent of digital wallets in South East Asia is intrinsically linked with the explosive growth of the sub-region's e-commerce sector and the increasing digitalization of Small and Medium Enterprises (SMEs).

This symbiotic relationship is reshaping commerce and creating new economic paradigms.

Digital payments are expected to account for an overwhelming 94% of total e-commerce payments in Southeast Asia by 2028, with mobile wallets being the preferred payment method in key markets like Indonesia, Malaysia, and Vietnam.[6]

The ease of use, security, and ubiquity of popular digital wallets directly impact e-commerce conversion rates, as cumbersome payment processes are primary drivers of cart abandonment. Seamless wallet integration is a competitive necessity for e-commerce platforms in SEA.[7] E-commerce adoption in APAC, driven by platforms like Shopee, is a key growth driver for cross-border payments, which are anticipated to reach $23.8 trillion by 2032 in the region.[4]

Digital wallets are also powerful enablers for SMEs, which constitute **over 99%** of firms in the ASEAN region and form the backbone of most South East Asian economies.[8]

For many SMEs, digital transformation starts with accepting digital payments. Wallets offer a low-cost, accessible entry point, allowing businesses to easily collect payments via QR codes or simple app-based solutions, expanding their customer reach beyond cash-only transactions.[5]

This facilitates participation in online marketplaces, improves cash flow management, and helps SMEs build a digital transaction history crucial for accessing formal credit.[5,9]

The modern South East Asian digital consumer is increasingly mobile-first, value-conscious, and expects convenience and personalized experiences.

They are comfortable with digital platforms and quickly adopt solutions that simplify their lives. This consumer profile is a key driver for the adoption of wallet-centric financial services that align with their digital lifestyles.

For many SMEs in SEA, adopting digital payments via wallets is often the first step into the broader digital economy, requiring less investment than comprehensive e-commerce platforms. Wallet providers frequently offer straightforward merchant solutions, and once SMEs can accept digital payments, they are better positioned to engage with online marketplaces and manage finances more efficiently.[5,10]

1.3 The Evolving Regulatory Frameworks

The regulatory landscape for digital payments, e-money, and fintech in South East Asia is diverse and dynamic. Authorities across the sub-region are working to foster innovation while ensuring financial stability, consumer protection, and preventing illicit financial activities.

Key regulatory trends observed across major South East Asian markets include:

- **Licensing and Supervision:** Most jurisdictions in SEA have established specific licensing regimes for non-bank payment service providers (PSPs), including e-money issuers and wallet operators. For instance, Singapore has its Payment Services Act (PSA)[11], Indonesia requires licenses from Bank Indonesia (BI) for e-money issuers[11], and Malaysia governs e-money issuers under its Financial Services Act and E-Money Regulation through Bank Negara Malaysia (BNM).[12] These licenses often come with requirements for capital adequacy, risk management, and safeguarding customer funds.

- **Data Protection and Cybersecurity:** With increasing data volumes, regulations concerning data privacy and cybersecurity are becoming more stringent across SEA. Countries like Singapore have a strong Personal Data Protection Act (PDPA) and specific guidelines from the Monetary Authority of Singapore (MAS) on technology risk management.[11] Indonesia has regulations on personal data protection in electronic systems with BI mandating security standards[11], and Malaysia has its Personal Data Protection Act (PDPA) with BNM mandating risk management for financial services.[11] National cybersecurity initiatives are being updated, though regulatory frameworks for data localization vary, complicating harmonization.[13]

- **Consumer Protection:** Regulators in SEA are placing greater emphasis on consumer protection, with rules regarding transparency of fees, dispute resolution mechanisms, and liability for unauthorized transactions.

- **AML/CFT Compliance:** PSPs in South East Asia are subject to rigorous Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) obligations, including customer due diligence (CDD/KYC), transaction monitoring, and reporting suspicious activities.

- **Open Banking and Data Sharing:** Some markets, like Singapore, are actively promoting open banking initiatives to encourage data sharing (with customer consent) between FIs and third-party providers to foster innovation.[12]

- **Approach to New Technologies (CBDCs/Crypto):** Regulators are developing frameworks for emerging technologies. Singapore is exploring a retail CBDC (Project Orchid) and has regulated Digital Payment Token services.[14] Indonesia is exploring a Digital Rupiah (Project Garuda) with crypto assets regulated as commodities. Malaysia has researched a wholesale CBDC (Project Dunbar) and has regulated digital asset exchanges.[12] ASEAN as a region is also seeing discussions on interoperability which may include future CBDC considerations.[15]

Many South East Asian regulators are adopting agile governance methods like regulatory sandboxes to test new fintech products in controlled environments. Some, like MAS in Singapore, also employ principles-based regulation, setting broad objectives while allowing firms flexibility in achieving them.[15]

Given the increasing cross-border nature of digital wallets, there's a growing need for enhanced cross-border regulatory cooperation and harmonization within SEA, particularly within ASEAN, to address disparate national regulations and combat transnational financial crime.[13 15]

02 Navigating the Landscape: The Challenges

While wallet-centric banking in South East Asia offers immense opportunities, its realization involves navigating significant challenges. Financial institutions must address issues of interoperability, ensure stringent data security and privacy, tackle digital literacy gaps, and adapt to the competitive pressures from fintech innovators.

2.1 Ensuring Robust Data Privacy, Security and Consumer Trust

The extensive handling of sensitive personal and financial data by digital wallet ecosystems inherently increases risks related to data breaches, fraud, and misuse of information.[7] Maintaining robust data privacy and security is a fundamental prerequisite for building and sustaining consumer trust in South East Asia.

A multi-layered security approach is essential, including advanced measures like end-to-end encryption, tokenization, multi-factor authentication (MFA), and biometric verification (fingerprint, facial recognition). AI-powered fraud detection systems are also crucial for identifying suspicious activities in real-time. The most important feature selected by APAC consumers for digital wallets is enhanced security (39%).[7]

Transparent data usage policies and clear mechanisms for obtaining informed user consent are paramount.

Consumers in SEA must understand what data is collected, how it's used, and with whom it might be shared. Financial institutions must strictly comply with evolving data protection regulations across various South East Asian jurisdictions, such as Singapore's Personal Data Protection Act (PDPA), Indonesia's data protection laws, and Malaysia's PDPA. Building consumer trust requires a demonstrable commitment to protecting customer interests, providing reliable services, and clear communication.[7]

Security and data privacy are "table stakes" – non-negotiable prerequisites for user adoption and regulatory compliance in the SEA wallet sphere.[7]

Financial institutions face a "**privacy paradox**": needing user data for personalization while risking user backlash if data practices are perceived as intrusive or insecure.

Adopting "trustworthy AI" principles—emphasizing fairness, transparency, accountability, and privacy-preserving techniques—along with robust data governance is key to resolving this.

2.2 Achieving Interoperability: Connected Payment Ecosystems

A significant hurdle in many South East Asian markets is the fragmentation of digital wallet ecosystems, where numerous providers often operate in closed loops, leading to disjointed experiences and limiting the utility of digital payments.[3] Achieving interoperability—the ability for different wallet systems and payment networks to seamlessly transact—is crucial. **Numerous initiatives are underway in South East Asia to foster greater connectivity:**

- **National Level:** Many SEA countries have launched or are developing national payment switches and standardized QR code systems. Prominent examples include SGQR in Singapore, QRIS in Indonesia, Thai QR in Thailand, VietQR in Vietnam, DuitNow QR in Malaysia, QRPh in the Philippines, and LaoQR in Laos.[15] [16] These initiatives enable any compliant wallet or banking app to make payments at participating merchants, irrespective of the merchant's acquirer.

- **Regional Level:** Particularly within ASEAN, there are concerted efforts to establish regional payment connectivity. This includes linking domestic real-time payment systems to facilitate faster and cheaper cross-border transactions for trade, tourism, and remittances.[15] The ASEAN Payment Connectivity Initiative focuses on cross-border QR and real-time payments.[15] [17] Indonesia, Malaysia, Singapore, and Thailand are connecting their national QR payment systems, allowing tourists to pay using their local currency and bank app.[18]

Interoperability functions as a public good, benefiting all participants by reducing friction, fostering competition, and expanding network effects. It empowers users with choice and enables merchants to accept payments from a wider customer base through unified interfaces.[16] **Cross-border payment interoperability** initiatives in SEA also carry strategic geopolitical dimensions, potentially reducing reliance on traditional global payment networks and dominant international currencies by promoting regional trade and local currency settlement.[15]

2.3 The Challenges posed by Fintechs

Fintech companies in SEA often bring agility, innovation, and a strong focus on user experience. **This can challenge traditional banks in several ways:**

- **Speed to Market:** Fintechs can often develop and deploy new products and features more rapidly than established banks, which may be encumbered by legacy systems and more complex internal processes.

- **Customer Experience:** Fintechs frequently prioritize sleek, intuitive user interfaces and seamless digital onboarding, setting high customer expectations that traditional banks must strive to meet.

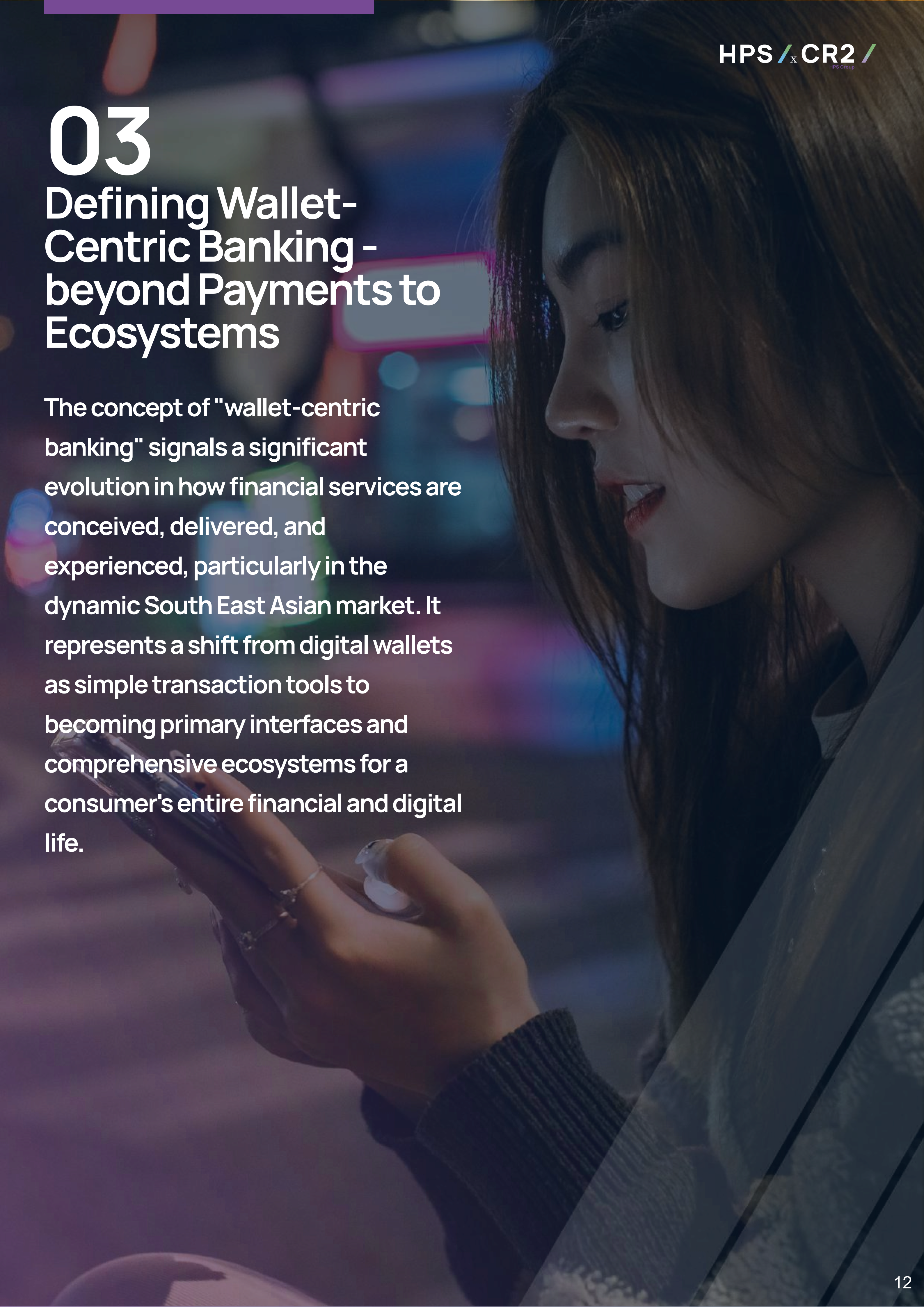
- **Niche Specialization:** Many fintechs target specific underserved niches or offer specialized services (e.g., remittances, BNPL, specific SME solutions) with tailored propositions that can attract customers away from more generalized banking offers.

- **Disintermediation:** Some fintech models aim to disintermediate traditional banks from parts of the value chain, particularly in payments or lending, potentially eroding banks' customer relationships and revenue streams.

- **Data Utilization:** Fintechs are often adept at leveraging customer data and AI to offer personalized services and make rapid credit decisions, sometimes outpacing banks in these areas.[19]

- **Regulatory Navigation:** While all players must comply with regulations, newer fintechs may sometimes operate in emerging areas where regulatory frameworks are still evolving, potentially creating temporary advantages or uncertainties.

Banks in South East Asia must respond to these challenges by enhancing their own digital capabilities, fostering innovation, improving customer experience, considering strategic partnerships with fintechs ("**coopetition**")[20], or developing their own agile, digital-first propositions.



03
Defining Wallet-Centric Banking - beyond Payments to Ecosystems

The concept of "wallet-centric banking" signals a significant evolution in how financial services are conceived, delivered, and experienced, particularly in the dynamic South East Asian market. It represents a shift from digital wallets as simple transaction tools to becoming primary interfaces and comprehensive ecosystems for a consumer's entire financial and digital life.

3.1 What is Wallet-Centric Banking

Wallet-centric banking can be defined as a model where the digital wallet moves beyond being a mere payment instrument to become the primary customer engagement channel and the principal gateway to a broad spectrum of financial and interconnected lifestyle services.[21]

In this model, reliance on traditional bank accounts for daily financial interactions diminishes, with the wallet assuming a central role within a larger ecosystem. It's an evolution from basic transactions like mobile airtime purchases and P2P transfers to sophisticated platforms offering a comprehensive suite of financial services, often integrated with e-commerce, social interactions, transport, and more, creating a holistic digital experience.[21] CR2 describes its digital wallet solution as a "comprehensive financial ecosystem that eliminates the need for a full-fledged bank account," offering low-cost accounts and broad accessibility.

This evolution is driven by strong consumer demand in South East Asia for convenience, immediacy, and integrated digital experiences. Users increasingly prefer managing their financial lives and other digital activities through a single, intuitive interface rather than juggling multiple applications.

Concurrently, FIs recognize the potential of wallet-centric models to foster deeper customer interactions, gain richer data insights from a wider range of activities, and unlock new revenue streams within these expanded ecosystems.[10]

As wallets integrate services like payments, savings, credit, investments, and insurance, alongside non-financial offerings, they are effectively evolving the traditional current account's role as the anchor of a customer's primary financial relationship, especially for younger, digitally-native South East Asian consumers who live much of their lives through such digital platforms.[10]

3.2 Why Should Banks Lead Wallet Innovation

Banks in South East Asia are uniquely positioned and have compelling reasons to lead wallet innovation, primarily due to the strategic advantage of owning customer data and relationships within these thriving ecosystems. The "battle for customer primacy is increasingly being fought in the wallet space.

Owning, or being deeply integrated into, the dominant wallet ecosystem is becoming paramount for maintaining relevance and market share."

Here's why banks should spearhead this innovation:

- **Owning Customer Data within an Ecosystem:** A bank-led wallet, especially one that integrates or partners within a broader service ecosystem, provides direct access to a wealth of transactional and behavioral data. This data is far richer and more multi-dimensional than traditional banking data alone. It creates "data gravity," where the more a user interacts with the wallet for various needs, the more comprehensive their data footprint within that ecosystem becomes.
    - **Hyper-Personalization:** This rich data allows for an unprecedented level of hyper-personalization of services, offers, and financial advice, making the user experience more relevant and engaging.
    - **Enhanced Risk Management:** Detailed customer data enables more accurate credit scoring (especially for thin-file customers), sophisticated fraud detection, and better overall risk management.
    - **Strategic Cross-Selling & Up-Selling:** Understanding customer needs and behaviors through wallet data allows banks to strategically offer other financial products (loans, insurance, investments) at the right time and through the right channel, increasing product penetration and customer lifetime value.

03 Defining Wallet-Centric Banking - beyond Payments to Ecosystems

- **Leveraging Trust and Security:** Banks traditionally command a higher level of trust compared to newer fintech players, especially concerning financial security and data privacy. By leading wallet innovation, banks can extend this trust to the digital realm, offering secure and reliable wallet solutions.

- **Integrating with Core Banking Systems:** Banks can seamlessly integrate wallet services with their existing core banking infrastructure, offering a more holistic financial view and enabling smoother transitions between wallet-based services and traditional banking products (e.g., mortgages, complex investments).

- **Regulatory Expertise:** Banks possess deep experience in navigating complex financial regulations in South East Asian markets, a crucial aspect for sustainable wallet operations.

- **Customer Retention and Primacy:** In an era of increasing competition from fintechs and super-apps, a compelling bank-led wallet can be a powerful tool for customer retention and for maintaining the bank's role as the primary financial institution for its customers.

By leading wallet innovation, banks in South East Asia can ensure they remain central to their customers' financial lives, effectively harnessing data to provide superior value and build deeper, more profitable long-term relationships.

3.3 Key Characteristics and Consumer Benefits of Wallet Centric Banking

Wallet-centric banking models are defined by key characteristics designed to meet the expectations of the modern digital consumer in South East Asia. These translate into significant benefits for users.

Key Characteristics:

- **Mobile-First Design:** All functionalities are optimized for smartphone interfaces, ensuring ease of use on the go.[22]
- **Simplicity and Usability:** Intuitive navigation, streamlined onboarding processes (often involving eKYC for "lite" accounts), and clear, jargon-free communication are crucial. [22]
- **Accessibility:** This includes diversity of channels including support for Unstructured Supplementary Service Data (USSD) for users with basic feature phones, multilingual interfaces (CR2's solutions support 138 languages), and agent banking networks to serve remote or cash-reliant communities in SEA.
- **Comprehensive Security:** Non-negotiable, involving multiple layers like biometric authentication (fingerprint, facial recognition), tokenization, advanced fraud detection, and robust encryption.
- **Integration of Diverse Services:** Elevating a digital wallet to a financial hub by including bill payments, financial management tools, and access to credit or insurance, beyond just payments.

Consumer Benefits:

- **Convenience:** Users can manage a wide array of financial tasks from a single, readily accessible application.
- **Speed:** Transactions, from instant P2P transfers to rapid merchant payments, meet expectations for immediacy.
- **Lower Transaction Costs:** Digital platforms' operational efficiencies often translate into more affordable financial services.
- **Wider Range of Services:** Access to a broader array of financial tools from a unified interface simplifies financial management.
- **Enhanced Security:** Advanced security features provide peace of mind.[7]
- **Personalized Experiences:** Data analytics drive tailored services, making users feel understood and valued.[7]
- **Simplicity:** Well-designed wallets reduce cognitive burden, making financial management less daunting, especially for newly included individuals or those with lower financial literacy.[22]

04
Pathways to Financial Inclusion through Wallet-Centric Models

Wallet-centric banking models are powerful catalysts for financial inclusion across South East Asia, offering innovative solutions to overcome traditional barriers that have excluded large population segments from the formal financial system.

4.1 The Financial Inclusion Imperative: Bridging the Gap (Overcoming Traditional Barriers to Access)

Despite South East Asia's economic dynamism, a significant portion of its population remains outside the formal financial system. Reports indicate that roughly half the population in Southeast Asia remains unbanked, with an additional percentage being underbanked.[23]

Digital wallets are uniquely positioned to dismantle long-standing barriers to financial access.[5] In emerging APAC markets, 38% of consumers are unbanked or underserved, and digital wallets offer easier access than traditional accounts.[7]

Traditional barriers include:

- **Cost:** Digital wallets often have significantly reduced or zero fees for basic accounts and transactions due to lower operational expenditure, contrasting with potential maintenance fees of traditional bank accounts.

- **Distance:** The mobile-native nature of wallets brings financial services to users' devices, negating the need to travel to physical branches. For cash-in/cash-out (CICO) operations, crucial in cash-reliant SEA economies, agent networks extend service reach into remote areas.

- **Documentation:** Simplified Know Your Customer (KYC) and electronic KYC (eKYC) processes, particularly for "lite" wallet accounts, ease documentation burdens for individuals lacking extensive formal identification.[10] CR2's onboarding solutions, for instance, facilitate account opening in just a few steps and support an extensive range of document templates. In the Philippines, eKYC has improved access to financial services by enabling remote customer registration.[2]

- **Trust:** Addressed through secure technology, transparent operations, the established reputation of providers (banks, telcos, or reputable fintechs), and sometimes government endorsements.[7] However, lack of trust in information security is still a concern for some APAC consumers (27%).[7]

- **Literacy (Financial and Digital):** Tackled through intuitive user interfaces[22], multilingual support, and community-based agent support providing guidance. USSD support ensures access for feature phone users.

Effective "on-ramps" to the digital ecosystem, like robust agent networks for CICO and assisted onboarding, alongside simplified digital onboarding, are paramount for reaching the unbanked in cash-heavy or less digitally mature parts of SEA.

4.2 Designing for Inclusivity: Reaching Rural and Marginalized Communities

Effectively extending wallet services to remote rural areas and specific marginalized groups in South East Asia, such as women or persons with disabilities, demands tailored strategies.

- **Agent Banking Networks:** Indispensable for "last-mile" connectivity, providing CICO services, customer support, and a human touchpoint where digital literacy or trust may be low. CR2's Agency Wallet capability is designed to help banks reach these customers.

- **Inclusive UI/UX:** Wallet interfaces must be meticulously designed with comprehensive localization for multiple local languages and dialects relevant to SEA. Features like voice prompts can assist users with low literacy or visual impairments. Navigation must be exceptionally simple and intuitive.[22]

- **Sensitive Product Design:** This might involve developing specialized products like micro-savings accounts, affordable micro-insurance covering relevant local risks (e.g., crop failure for agricultural communities in SEA), or digital facilitation of traditional group savings practices.

- **Addressing the Gender Gap:** Across SEA, women often face greater barriers to financial services.[5] Digital wallets can empower women by providing secure and private means to manage finances. Initiatives specifically targeting women with tailored financial education are crucial.[5]

- **Hyper-Localization:** Deep understanding and adaptation of interfaces, product offerings, and support mechanisms to align with local languages, cultural norms, literacy levels, and economic activities are vital for last-mile inclusion.[5]

- **Dual Literacy Focus:** Sustainable financial inclusion requires concurrently addressing both digital skills (safe navigation, fraud prevention) and financial literacy (understanding products, risks, benefits).[5] This necessitates ongoing and adaptive educational efforts, including government-led cyber literacy campaigns.[13] Trusted local intermediaries (community leaders, agents) can be highly effective in disseminating this literacy.

4.3 Empowering the Unbanked and Underbanked: Case Studies across the Globe

Numerous initiatives across Asia, including South East Asia, illustrate the transformative power of digital wallets in driving financial inclusion.

Leading digital ID and payment wallets like GrabPay in Southeast Asia and GCash in the Philippines are playing important roles in expanding financial services to the unbanked.[2]

South East Asian Examples:

- **Philippines:** Digital banking platforms and e-wallets like GCash and Maya (formerly PayMaya), along with digital-only banks, are experiencing rapid growth, significantly expanding access to financial services beyond traditional urban centers.[1] GCash, for instance, evolved from a simple wallet to a super-app offering savings, credit, insurance, and investments, becoming deeply embedded in the daily lives of millions of Filipinos.

- **Indonesia:** The country boasts high mobile wallet usage, with platforms like GoPay (linked to Gojek's super-app), OVO, and DANA becoming integral to daily commerce and financial management for millions, driving inclusion in a sprawling archipelago.[2] These wallets often started with use cases like ride-hailing or e-commerce payments and expanded to a wide range of financial services.

- **Vietnam:** E-wallets like MoMo have gained significant traction, offering a wide array of services including P2P transfers, bill payments, merchant payments, and even access to financial products like consumer loans and insurance, thereby reaching previously unbanked and underbanked segments of the population.

- **Malaysia: Wallets like Touch 'n Go eWallet, initially known for transit and toll payments, have broadened their offerings to include retail payments, bills, and financial services, contributing to the national push for a cashless society and greater financial inclusion.**

- **Thailand:** PromptPay, a national real-time payment system, often accessed via mobile banking apps and e-wallets, has facilitated widespread digital transactions. Thai QR code standards have also spurred merchant adoption and wallet usage, benefiting both consumers and small businesses.

Common Success Factors in SEA:

- **Government Support & National Initiatives:** Proactive development of digital public infrastructure, such as digital IDs and interoperable payment systems (e.g., national QR codes like QRIS in Indonesia, DuitNow QR in Malaysia, QRPh in the Philippines), has played a crucial "ecosystem orchestration" role.[1]

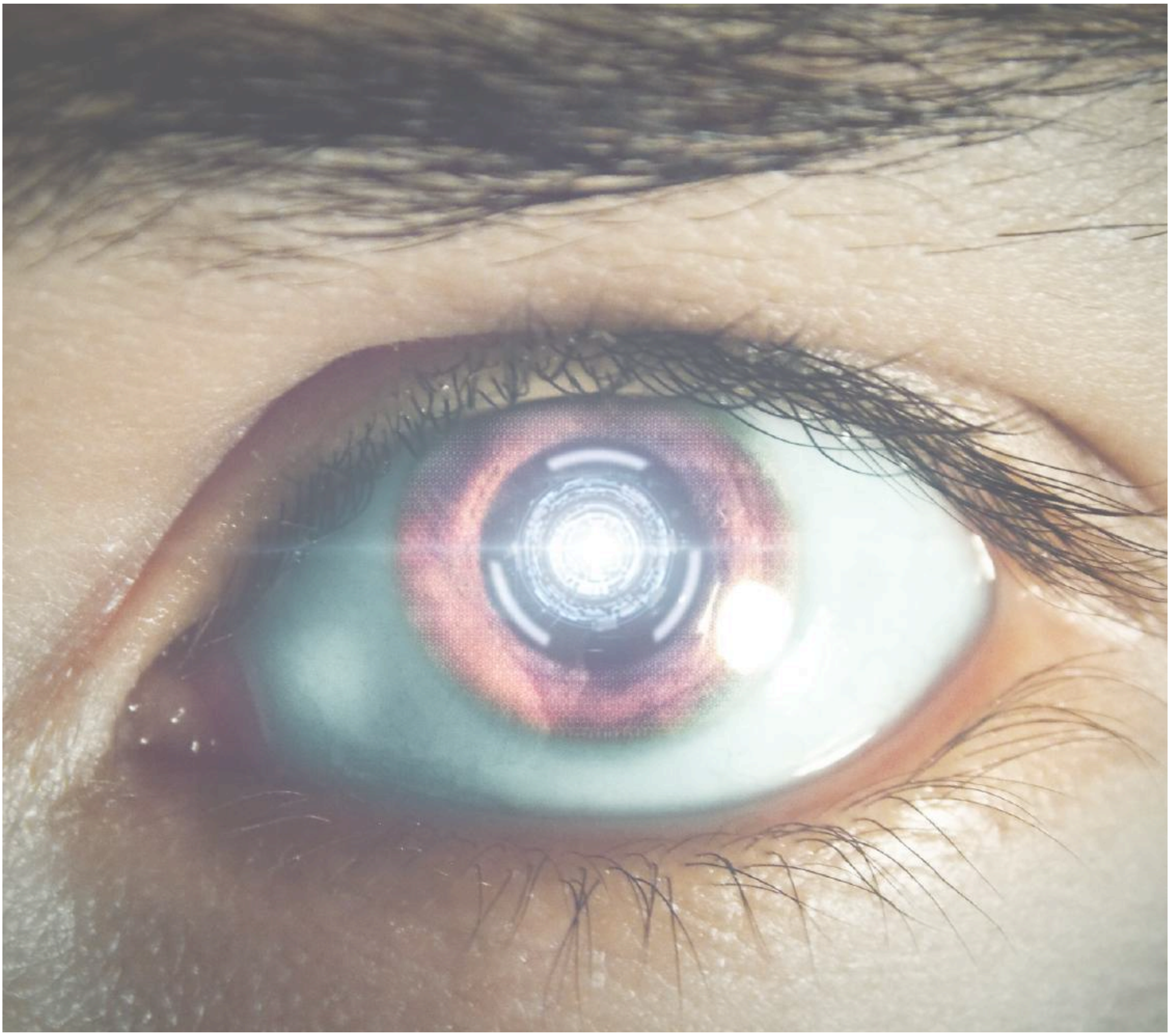
- **Addressing Local Needs:** Successful wallets in SEA address specific local pain points and integrate well with existing consumer behaviors and popular services.

- **Robust Agent Networks:** These are critical in many SEA markets for CICO and customer support, especially in areas with strong cash preference or lower digital penetration.

- **User-Friendly Interfaces & Localization:** Intuitive design, local language support, and seamless integration drive adoption and sustained engagement.

- **Integration of Key Services:** Efficient and affordable services like domestic and international remittances (important for countries with many overseas workers) often act as a "killer app" for wallet adoption, subsequently leading users to explore other financial services.

05 Igniting Innovation: Technologies and Products Shaping the Future



The vibrancy of wallet-centric banking in South East Asia is propelled by innovative technologies and an expanding array of financial products and services delivered through these platforms. This section explores key technological enablers and novel offerings defining the future of digital wallets in the sub-region.

5.1 The Mobile-First Foundation: QR Codes, NFC, and Seamless Payments

The foundation of South East Asia's digital payment boom heavily relies on mobile-first technologies prioritizing ease of use and accessibility.

- **Quick Response (QR) Codes:** These have become ubiquitous across the SEA payments landscape, serving as a low-cost and highly effective mechanism for merchant acceptance.[7] Their simplicity has democratized digital payment acceptance for millions of small merchants and micro-enterprises in countries like Thailand, Vietnam, Indonesia, and Malaysia. This widespread merchant adoption enhances the utility of digital wallets for consumers, creating a powerful network effect. National or regional QR standards in SEA, such as SGQR (Singapore), QRIS (Indonesia), Thai QR (Thailand), VietQR (Vietnam), DuitNow QR (Malaysia), and QRPh (Philippines), ensure interoperability, allowing a customer using one wallet to pay a merchant whose acquiring service is with another provider.[15][16] This simplifies the experience for both consumers and merchants, fostering wider adoption.

- **Near Field Communication (NFC):** This technology enables "tap-to-pay" functionality in mobile wallets, offering convenience for contactless transactions, particularly in more developed urban centers across SEA and for transit systems.

Both QR codes and NFC contribute to creating frictionless payment experiences[10], critical for driving adoption and sustained usage among South East Asian consumers.

5.2 Artificial Intelligence (AI) and Big Data: Personalization, Enhanced Security, and Intelligent Credit Scoring

AI and Big Data analytics are indispensable in the South East Asian wallet-centric banking ecosystem, enabling advanced personalization, security, and intelligent decision-making.[24]

- **Hyper-personalization:** This understanding fuels tailored offers, services, and financial advice delivered through wallets, making the user experience in SEA more relevant and engaging.[24]
- **Enhanced Security:** AI plays a critical role in advanced fraud detection and prevention. Machine learning models analyze transaction patterns in real-time, identifying anomalies indicative of fraud specific to regional typologies, and flagging or blocking suspicious transactions with speed and accuracy.[24] CR2, for example, incorporates AI-powered features in its onboarding and security solutions, including advanced liveness detection and biometric verification.
- **Intelligent Credit Scoring:** A transformative application in SEA is AI-driven credit scoring using alternative data (digital payment history, mobile usage, e-commerce activity) to assess the creditworthiness of individuals and SMEs lacking traditional credit files.[5][21] Singapore-based FinbotsAI, with its AI-powered platform CreditX, is adopted by banks like Sathapana Bank in Cambodia and KBZ Bank in Myanmar for credit scoring.[25]

The integration of AI and Big Data signifies a shift from reactive to proactive risk management.

However, ethical considerations around algorithmic bias, data privacy, and transparency of automated decision-making are paramount and are subject to increasing regulatory scrutiny in SEA.[5]

These technologies allow FIs to derive deep customer insights from vast quantities of transactional and behavioral data from wallet usage.

5.3 Blockchain and Distributed Ledger Technology (DLT) for Cross-Border Payments

While AI and Big Data are transforming personalization and risk assessment, Blockchain and DLT are emerging with significant potential to enhance cross-border payments in South East Asia, a region with substantial remittance flows and growing intra-regional trade. Traditional cross-border payments are often slow, costly, and lack transparency due to multiple intermediaries. Blockchain offers a potential solution by enabling faster, cheaper, and more transparent transactions.[18]

Benefits for SEA:

- **Reduced Costs and Faster Settlement**: By reducing intermediaries, blockchain can lower transaction fees and enable near real-time settlement, which is highly beneficial for migrant workers sending remittances and for SMEs engaged in regional trade.[26]

- **Enhanced Transparency and Security:** The immutable and transparent nature of blockchain (for permissioned networks) can reduce fraud and errors in cross-border transactions.[32] Cryptographic security is a core feature, though wallet vulnerabilities and smart contract bugs remain concerns that need addressing.[26]

- **Improved Accessibility:** DLT-based solutions can potentially provide more accessible cross-border payment options for individuals and businesses currently underserved by traditional banking channels.

Adoption and Initiatives in SEA:

- While widespread adoption is still in its early stages, there's growing interest and exploration. Projects like mBridge, which involves central banks from Hong Kong, Thailand, China, and the UAE, are testing how CBDCs and DLT can facilitate multi-currency cross-border payments.[18,27]

- Fintechs in the region are also exploring blockchain for remittances and trade finance.

Challenges:

- **Scalability:** Public blockchains currently struggle with the transaction volumes required for mainstream cross-border payments, though Layer 2 solutions and permissioned blockchains offer improvements.[26]
- **Regulatory Uncertainty:** While some SEA countries like Singapore have clearer frameworks for digital assets, regulatory approaches to blockchain and cryptocurrencies vary across the region, creating complexities for cross-border implementations.[26,27]
- **Interoperability:** Ensuring interoperability between different blockchain platforms and with legacy financial systems is a significant hurdle.[26]
- **Security Concerns:** Despite inherent security features, vulnerabilities in smart contracts, wallet security, and the risk of 51% attacks on smaller chains need careful management.[26]

Despite challenges, the promise of more efficient and inclusive cross-border payments makes blockchain a key technology to watch in the evolution of South East Asia's financial landscape.

5.4 Novel Financial Products and Services within the Wallet

Digital wallets in South East Asia are rapidly transforming into financial supermarkets by expanding their product offerings beyond simple payments.[21]

- **Micro-finance services:** Micro-loans and micro-savings are increasingly common. Wallets provide an ideal platform for delivering small-ticket credit to individuals and micro-enterprises in SEA who may not qualify for traditional bank loans, often leveraging AI-driven credit scoring.[5]

- **Digital Insurance (Micro-insurance):** Wallets facilitate offering affordable, contextually relevant insurance products (e.g., travel, health, device protection) with easy purchase options within the app, catering to specific needs in SEA markets.

- **Accessible Investment Options (Micro-investments):** Emerging options allow users in SEA to invest small amounts in various asset classes (mutual funds, stocks, digital assets) directly through their wallets, democratizing access to investment opportunities.[21]

- **Buy Now, Pay Later (BNPL) and Earned Wage Access (EWA):** BNPL is popular for e-commerce in SEA, allowing instalment payments. EWA offers employees early access to earned salaries.[5]

- **Value-Added Services (VAS):** Seamless bill payments, mobile top-ups, ticketing services, loyalty program integration, and merchant services enhance wallet "stickiness" and user engagement in SEA.[7]

South East Asian Case Insights:

- **Grab (SEA):** Originating as a ride-hailing app, Grab rapidly expanded its GrabPay wallet and financial services arm (GrabFin) to offer payments, lending (e.g., PayLater, loans for drivers and merchants), insurance, and investments across multiple SEA countries.[2, 28] This demonstrates the super-app model integrating diverse financial products contextually.

- **GoTo (Indonesia):** Formed from the merger of Gojek and Tokopedia, GoTo's GoPay wallet is deeply integrated into a vast ecosystem of services including ride-hailing, e-commerce, food delivery, and bill payments. They offer various financial products like BNPL (GoPayLater), merchant loans, and are exploring further wealth management solutions for the Indonesian market.[2, 24]

- **MoMo (Vietnam):** This leading Vietnamese super-app provides an extensive range of services including P2P transfers, bill payments, mobile top-ups, merchant payments, movie tickets, travel bookings, and access to consumer loans, savings products, and insurance, showcasing a comprehensive digital financial lifestyle platform.

These examples highlight the trend of "contextual finance" in SEA[24], where relevant financial solutions are offered precisely when and where the customer needs them within their daily digital journey. This often leads to holistic "financial wellness" solutions, leveraging data to provide personalized advice and automated tools for better financial management.[10, 24]

06 Fueling Growth: Strategies for Financial Institutions and Economies

Wallet-centric banking is a potent engine for growth in South East Asia, providing financial institutions with new avenues for market expansion, revenue generation, and deeper customer engagement, while also contributing to broader economic development by facilitating e-commerce and empowering SMEs.

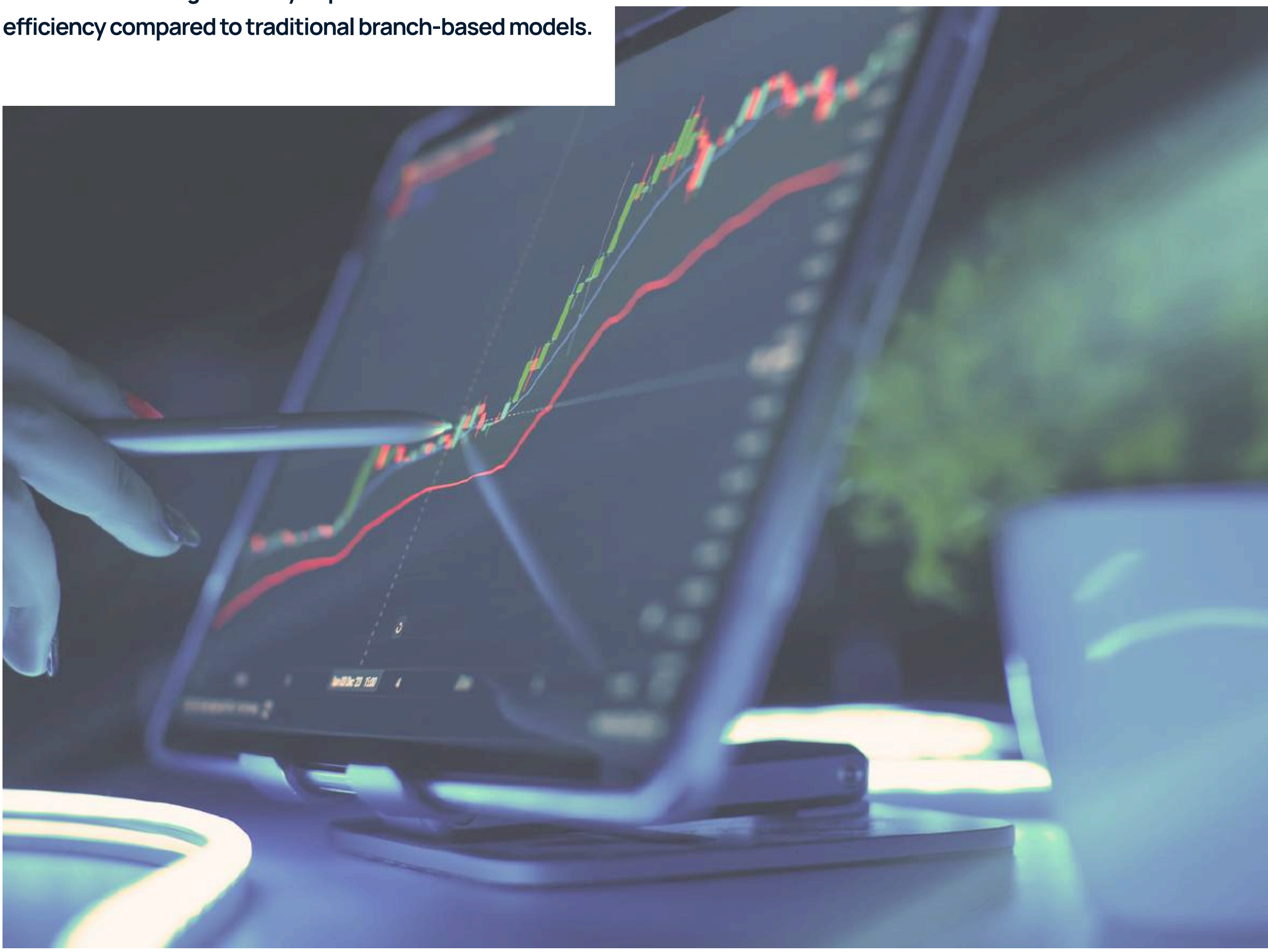
6.1 Expanding Market Reach and Customer Acquisition at Scale

Digital wallets enable FIs in South East Asia to dramatically expand their market reach and acquire customers with significantly improved scale and cost-efficiency compared to traditional branch-based models.

Simplified digital onboarding, often featuring KYC-light requirements for basic accounts, allows FIs to rapidly integrate previously untapped segments like the unbanked, underbanked, youth, and rural populations.

Agent networks are pivotal in extending this reach into remote or cash-dominant areas in SEA, acting as human touchpoints for CICO and assisted onboarding.

Each newly onboarded wallet user in SEA increases the potential for P2P transactions, merchant payments, and other digital interactions, creating a positive feedback loop that benefits the entire digital economy.[29]



6.2 Unlocking New Revenue Streams and Enhancing Customer Lifetime Value

Digital wallets allow FIs in South East Asia to diversify beyond traditional revenue models and tap into new income streams, enhancing customer lifetime value (CLTV).

- **Ethical Data Monetization:** Leveraging aggregated and anonymized data (with user consent and adherence to SEA privacy regulations) for market insights or premium analytical services.[10]

- **Value-Added Services (VAS):** Generating fees or commissions from services like bill payments, ticketing, integrated marketplaces, and mobile top-ups.[7]

- **Cross-selling and Up-selling:** Using wallet interaction data to offer tailored loans, insurance, investments, or premium account upgrades.

- **Merchant Services:** Offering businesses tools and analytics for managing transactions and running promotions for a fee or revenue share.

Increased and diversified engagement through multi-service wallets enhances customer loyalty and CLTV in the SEA context.[21]

The "**flywheel effect**" – where more services lead to more engagement, richer data, better personalization, and thus even more relevant services – is a potent driver of CLTV.

This model also facilitates a strategic shift towards more diverse, often higher-margin, fee-based income streams, making FIs more resilient.[12]

6.3 Powering E-Commerce and Supporting SME Digital Transformation

The synergy between digital wallets and the e-commerce sector is a major driver of economic growth in South East Asia.

Seamless wallet integration is critical for e-commerce platforms in SEA, reducing checkout friction and enabling quick, secure mobile commerce transactions preferred by the sub-region's mobile-first consumers.[1]

Digital wallets play a pivotal role in the digital transformation of SMEs across South East Asia by:

- **Simplified Payment Acceptance:** Low-cost QR code solutions enable SMEs to easily accept digital payments, moving from cash-only operations.[7]

- **Expanded Market Reach:** Facilitating SME participation in online sales channels and e-commerce marketplaces.

- **Improved Cash Flow Management:** Providing better visibility and control over cash flow.

- **Access to Credit:** Consistent wallet use helps SMEs build a verifiable digital transaction history ("digital footprint dividend"), invaluable for credit assessment by FIs and fintech lenders, making it easier to access working capital even without traditional collateral.[5 9] Research indicates that around **80% of SMEs reported growth in revenue**, **net profit, and customer base as a result of financing obtained through digital finance platforms.**[9]

- **Access to Financial Tools:** Advanced wallet platforms may offer SMEs tools for invoicing, payroll, and inventory tracking.

This empowers a new wave of micro-entrepreneurship and supports the vibrant gig economy across South East Asia.[7]

6.4 The Role of Data Analytics in Driving Growth and Personalization

Data generated through widespread digital wallet usage in South East Asia is an immensely strategic asset for FIs.[10]

Advanced analytics allow FIs to:

- **Segment Customers and Target Marketing:** Identify distinct customer segments for highly targeted campaigns and product offers.

- **Drive Product Development:** Reveal unmet needs to guide the development of new products and features aligned with SEA market demand.

- **Offer Personalized Recommendations:** Deliver personalized financial advice and product recommendations through wallets.

- **Optimize Customer Journeys:** Analyze user interactions to identify friction points and refine workflows for better engagement.

- **Enable Proactive Risk Management:** Utilize analytics and AI for identifying and mitigating fraud and for more accurate credit risk assessment.

Advanced analytics facilitate a shift from reactive customer service to proactive relationship management in SEA, using data to detect changing circumstances or needs and engage with timely support or solutions.[24]

The digital nature of wallets allows for continuous iteration and optimization through A/B testing and data-driven decision-making, ensuring wallet propositions evolve with changing SEA consumer preferences.[30]

07 The Future of Wallet-Centric Banking in South East Asia

The trajectory of wallet-centric banking in South East Asia points towards an increasingly integrated, intelligent, and inclusive financial future.

Several key trends are shaping this evolution, presenting both profound opportunities and strategic imperatives for financial institutions.

7.1 Designing Winning Wallet-Centric Propositions

Super-apps, which integrate a multitude of services like messaging, e-commerce, payments, and financial services into a single platform, have become household names in Southeast Asia with platforms like Grab and Gojek demonstrating widespread adoption.[34] Grab boasts 34 million monthly transacting users, while Gojek has over 190 million app downloads.[28]

These platforms are not just a convenience but are becoming central to daily life, driven by urbanized, tech-savvy populations and supportive digital innovation policies in many Asian countries.[28]

The Draft WP previously noted their rise, and recent trends confirm their continued expansion and deepening integration of financial services.[24 28] In Asia-Pacific, **loyalty programs** are increasingly integrated within super-apps, which are leading consumer engagement alongside fintech firms and e-commerce platforms.[31]Consumer habits are deeply tied to these ecosystems, making it challenging for new entrants.[31] Super-apps are transforming banking by embedding finance contextually into everyday social, mobility, and retail experiences.[24]

For traditional FIs in SEA, this necessitates a clear strategy: either develop competing ecosystems (a high-risk endeavor), partner with existing super-apps to offer financial products (Banking-as-a-Service)[20], or identify niche services where they can offer superior value.

7.2 The Emergence and Impact of CBDCs

Central Bank Digital Currencies (CBDCs) are progressing from research to pilot stages across several South East Asian nations, with the potential to significantly alter the payments landscape.

Globally, by the end of 2022, 93% of central banks were engaged in some form of CBDC work, with almost a quarter piloting a retail CBDC.[32] The BIS survey suggested there could be 15 retail and nine wholesale CBDCs publicly circulating globally by 2030.[32]

In SEA, projects like Thailand's involvement in mBridge (for wholesale cross-border CBDC) and Singapore's Project Orchid (exploring retail CBDC use cases) are notable.[14,27,32] The mBridge project, a collaboration including the central banks of China, Hong Kong, Thailand, and the UAE, is testing how CBDCs can enable real-time, low-cost cross-border payments.[27]

While some reports about extensive CBDC linkage across ASEAN may be premature[33], the underlying trend is towards exploring digital versions of national currencies.

Impact on Digital Wallets in SEA:

- **New Payment Rail:** CBDCs could offer an additional, highly efficient, and secure payment rail that digital wallets can integrate, potentially reducing transaction costs.
- **Financial Inclusion:** CBDCs accessible via simple digital wallets could further drive financial inclusion for the unbanked in SEA.
- **Role of Private Sector Wallets:** The prevailing model appears to be a two-tier system where the central bank issues the CBDC, and commercial banks and PSPs (including existing wallet providers) manage customer-facing services and innovate value-added offerings on top of the CBDC infrastructure.
- **Interoperability:** Ensuring interoperability between CBDCs, traditional payment systems, and existing digital wallets will be crucial.
- **Competition and Innovation:** The introduction of CBDCs might spur further innovation in the private digital wallet space as providers seek to offer superior user experiences and integrated services.

FIs and wallet providers in SEA need to monitor CBDC developments closely and prepare for integration to leverage this new form of digital currency.

7.3 Hyper-Personalization and AI-driven Financial Wellness

The future of digital wallets in South East Asia will be characterized by deep hyper-personalization and a focus on AI-driven financial wellness. Roughly 90% of FinTech companies globally now rely on AI and machine learning.[24]

Banks in APAC are increasingly leveraging vast data and AI for hyper-personalized banking, tailoring apps to show relevant tips or products based on customer behavior.[24]

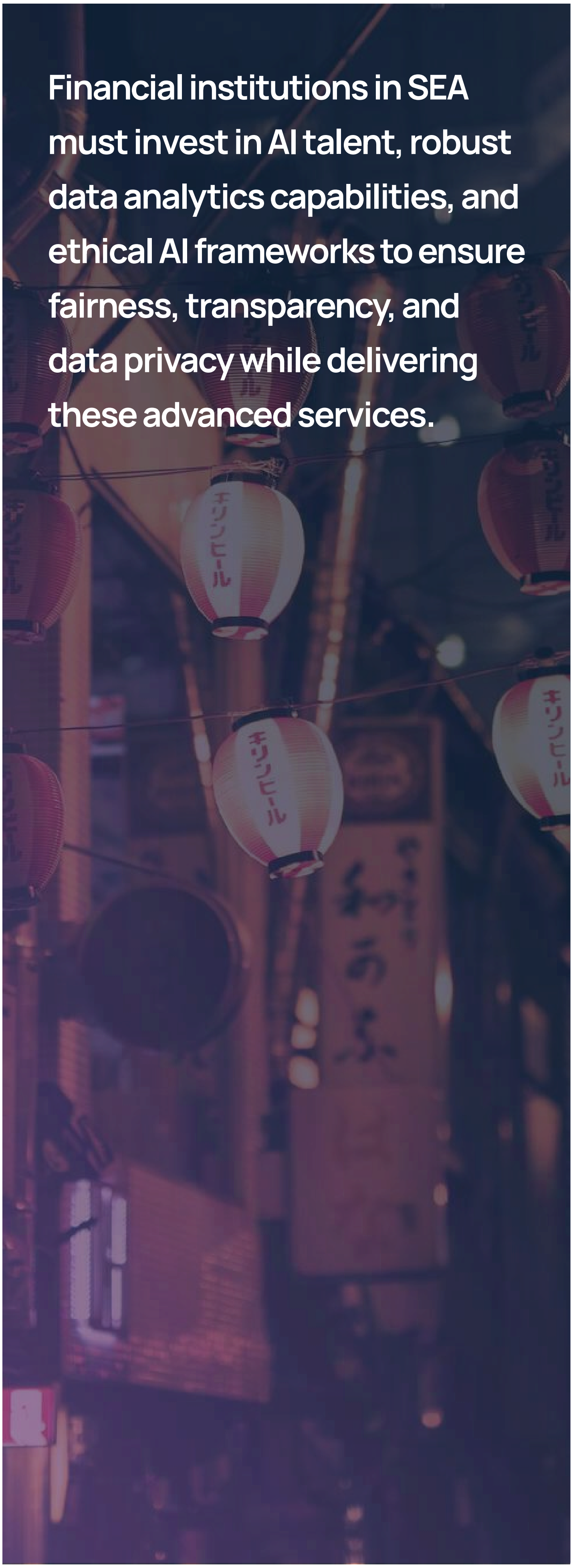
- **AI-Powered Insights:** AI algorithms will analyze individual spending patterns, savings habits, and financial goals to provide predictive insights (e.g., upcoming bill alerts, cash flow forecasts) and personalized financial planning tools directly within the wallet.

- **Contextual Offers:** Wallets will deliver highly relevant product offers (loans, insurance) precisely at the moment of need, identified through data analytics.

- **Automated Financial Management:** Features like automated bill payments, smart fund transfers, and potentially automated investment rebalancing will become more common.

- **Financial Wellness as a Service:** Beyond transactions, wallets will act as intelligent financial companions. For example, BPI in the Philippines partnered with Personetics to launch an AI-powered tool, "Track and Plan," providing personalized insights on spending habits and financial recommendations to its digital customers.[33] Singapore's OCBC also unveiled OCBC GPT to assist employees and better serve customers.[25]

- **Inclusive AI:** AI-powered chatbots speaking local languages are helping educate and onboard rural users in developing Asian markets into digital finance.[24] AI is also transforming credit scoring for individuals with non-traditional employment in SEA, making lending more inclusive.[25]



7.4 Enhancing Consumer Access, Experience, and Engagement

As digital wallets become more integral to financial life in South East Asia, the sophistication of security threats will also escalate, demanding continuous advancements in security measures.

Enhanced security is a key factor for digital wallet adoption in APAC.[7,34]

- **Advanced Biometrics:** Moving beyond basic fingerprint or facial recognition to more robust forms like behavioral biometrics (analyzing typing patterns, device handling) for continuous and passive authentication. The integration of digital identity with payments, as seen with initiatives like Singpass, leverages biometric authentication for secure transactions.[2]

- **Ubiquitous Tokenization:** Wider adoption of tokenization for all sensitive data elements, not just payment card numbers, to minimize the impact of data breaches.

- **AI-Powered Real-Time Threat Intelligence:** Next-generation fraud prevention systems will leverage AI to analyze vast networks of transaction data in real-time, predictively identifying and neutralizing complex fraud attempts, including identity theft, account takeovers, and sophisticated bot attacks, often before they impact the customer. The increasing integration of AI/ML technologies enhances fraud detection and service personalization.[35]

- **QR Code Security:** While QR codes are prevalent, there's a rising trend of QR code-based cyberattacks, necessitating enhanced security around their generation and scanning processes.[13]

- **Cyber Resilience and Regional Cooperation:** Given the rise in cyberattacks in ASEAN[13], organizations must prioritize building cyber resilience by identifying critical assets and implementing modern security tools. Regional cooperation in sharing cyberthreat information and conducting joint exercises is also essential.[13]
- **User Education:** Continuous efforts to improve cyber literacy among users are crucial to help them recognize and avoid scams and phishing attempts.[13]

Wallets are becoming increasingly important for digital interactions, holding not just payment credentials but potentially cryptocurrencies, CBDCs, and digital identity elements, all requiring secure management of secret keys.[36]

Financial institutions in SEA must make security a foundational pillar, continuously investing in cutting-edge technologies and transparent data governance to maintain user trust.

7.5 Embedded Finance and BaaS: A Strategic Pathway for SEA Banks

The rise of embedded finance—integrating financial services into non-financial platforms and apps—is rapidly changing the banking landscape in South East Asia.

This trend, where financial transactions become a seamless part of broader customer journeys (e.g., in e-commerce, ride-hailing, or SaaS platforms), is powered significantly by Banking-as-a-Service (BaaS) models. BaaS enables banks to offer their licensed infrastructure and services via APIs to fintechs and other businesses, who then build customer-facing financial products.[37]

Viability and Opportunity for South East Asian Banks:

- **Market Growth:** The embedded finance industry in Asia-Pacific is projected to grow substantially, from US$73.75 billion in 2024 to US$255.49 billion by 2029, at a CAGR of 28.2%.[38] Traditional banks stand to gain significant additional revenue through embedded finance, particularly from SMEs.[39] This indicates a massive opportunity for SEA banks that position themselves as BaaS providers or participants in embedded finance ecosystems.

- **Reaching New Customer Segments:** BaaS allows banks to reach new customer segments, including the unbanked and underbanked, through partners with established user bases in non-financial sectors.[40] This is particularly relevant in SEA with its large underserved population.[41] Fintechs, often leveraging BaaS, are more likely to reach first-time borrowers in SEA compared to traditional FSPs.[42]

- **Competing with Fintechs and Super-apps:** Rather than solely competing, BaaS offers a collaborative model. Banks can leverage their regulatory expertise, trust, and infrastructure, while partners (fintechs, super-apps, other enterprises) bring customer reach, agility, and innovative user experiences.[40 43] This strategy allows banks to "opt-in" and share revenue, rather than ceding ground entirely to tech players.[37]

- **New Revenue Streams:** BaaS creates new revenue streams for banks by monetizing their licenses, technology, and compliance capabilities.[37 43] Banks can offer services like payments, accounts, lending, and compliance-as-a-service.

- **Driving Financial Inclusion:** Embedded finance, facilitated by BaaS, is a powerful tool for financial inclusion in SEA, offering convenient access to financial services through familiar non-financial platforms.[41]

Challenges and Considerations for SEA Banks:

- **Legacy Systems:** Traditional banks may face challenges in adapting legacy IT systems to support the API-first, real-time infrastructure required for BaaS.[37 44] Modernizing core banking systems is often an imperative.[44]

- **Regulatory Scrutiny and Compliance:** As BaaS models grow, they face heightened regulatory scrutiny regarding governance, risk management (especially with third-party partners), and consumer protection.[37] Banks acting as BaaS providers must ensure robust compliance for themselves and their partners.

- **Mindset Shift:** Adopting BaaS requires a shift from a product-centric approach to a service-oriented, ecosystem mindset, focusing on enabling partners rather than solely owning the end-customer relationship.[37 40]

- **Investment Costs:** Significant upfront investment in technology and API infrastructure is required.[37]

- **Competition:** While BaaS offers opportunities, banks also face competition from specialized BaaS platform providers and nimble fintechs.

HPS x CR2 HPS Group

Opinion on Viability in SEA:
Embedded finance and BaaS represent a highly viable and strategically crucial pathway for banks in South East Asia.

The region's high digital adoption, large unbanked and underbanked population, and the proliferation of super-apps and digital platforms create fertile ground for these models.

For SEA banks, BaaS is not just an option but increasingly a necessity to:

- **Extend Reach Cost-Effectively:** Tap into new customer bases without the need for extensive physical branch expansion.

- **Foster Innovation through Collaboration:** Partner with agile fintechs to bring innovative products to market faster.

- **Generate New Revenue:** Diversify income beyond traditional interest margins.

- **Stay Relevant in an Ecosystem-Driven World:** Integrate banking services into the platforms where customers are already active.

The success of this strategy hinges on banks' willingness to invest in modern API-driven architectures, adopt a partnership mindset, and navigate the evolving regulatory landscape proactively.

While challenges exist, particularly around legacy systems and managing partner risks, the potential rewards in terms of market access, revenue diversification, and enhanced customer engagement in the dynamic SEA market are substantial.

Banks that successfully implement BaaS strategies will be well-positioned to thrive in the future of finance, which is increasingly embedded and ecosystem-driven.

08

Conclusions: Charting the Course in South East Asia's Wallet-Driven Future

The rise of wallet-centric banking is fundamentally reshaping South East Asia's financial services landscape, driven by a confluence of technological advancements, evolving consumer behaviors, and economic imperatives.

This white paper highlights several major points:

- **Transformative Shift:** Wallet-centric banking in SEA is evolving beyond payments into comprehensive digital ecosystems, becoming central to consumers' financial and daily digital lives.
- **Key Drivers of Adoption:** High mobile penetration, a significant unbanked/underbanked population, the dynamic growth of e-commerce and SMEs, and proactive national digitalization initiatives are fueling this transformation.
- **Financial Inclusion Engine:** Digital wallets are critical in dismantling traditional barriers to financial access (cost, distance, documentation), offering tangible pathways to inclusion for millions in SEA. Tailored design and agent networks are crucial for reaching marginalized communities.
- **Innovation as a Core Pillar:** Technologies like QR codes, AI, and Big Data are enabling hyper-personalization, enhanced security, and intelligent credit scoring. Blockchain also shows promise for improving cross-border payment efficiency. Novel financial products (micro-services, BNPL, contextual offerings) are expanding wallet utility.
- **Significant Growth Opportunities for FIs:** Wallet-centric models allow FIs in SEA to expand market reach, acquire customers at scale, unlock new revenue streams (VAS, data insights, merchant services), and deepen customer lifetime value, particularly by supporting e-commerce and SME digitalization.
- **Navigating Critical Challenges:** Success requires addressing interoperability hurdles (both national and regional), ensuring robust data privacy and cybersecurity, bridging the digital and financial literacy gap, and navigating complex, evolving regulatory frameworks across diverse SEA nations.
- **Future Trajectory:** The path ahead will be shaped by the continued dominance and evolution of super-apps, the cautious but impactful emergence of CBDCs, increasingly sophisticated AI-driven hyper-personalization for financial wellness, and continuous advancements in security technologies (biometrics, tokenization).
- **Strategic Role of Embedded Finance and BaaS:** For SEA banks, embracing embedded finance and Banking-as-a-Service models offers a viable strategy to compete, collaborate, extend reach, and generate new revenues in an ecosystem-driven financial world.
- **Imperatives for Financial Institutions:** To thrive, FIs in South East Asia must adopt an ecosystem mindset, prioritize exceptional and localized customer experiences, invest deeply in data and AI, champion trust through robust security and ethical governance, foster agility, proactively navigate regulations, and actively contribute to digital and financial literacy.

By strategically adapting to this new wallet-centric paradigm, financial institutions in South East Asia can effectively drive inclusion, foster innovation, and achieve sustainable growth in this dynamic and rapidly evolving era of finance.

References

1. Asia Pacific Digital Banking Market Size, Share & Trends, 2033. (n.d.). Accessed on May 7, 2025, from https://www.marketdataforecast.com/market-reports/asia-pacific-digital-banking-market
2. Rise of digital wallets integrating payments and digital identities across Asia. (n.d.). Accessed on May 7, 2025, from https://www.biometricupdate.com/202503/rise-of-digital-wallets-integrating-payments-and-digital-identities-across-asia
3. Is APAC Ready for a Cashless Future? - Fintech Singapore. (n.d.). Accessed on May 7, 2025, from https://fintechnews.sg/98458/payments/is-apac-ready-for-a-cashless-future/
4. Turrin, R. (n.d.). How will Asia's Money Move in the Future? 2025'S View of 2035. Retrieved from https://richturrin.substack.com/api/v1/file/a61f13aa-0d19-4564-9d8c-60510dfe5f07.pdf
5. Financial Inclusion in Asia: Bridging the Gap with Digital Solutions ... (n.d.). Accessed on May 7, 2025, from https://holbornassets.asia/blog/financial-inclusion-in-asia-bridging-the-gap-with-digital-solutions/
6. Southeast Asia's E-Commerce to Reach New Heights, Driven by Digital Payments and Cross-Border Commerce Growth I Business Wire. (n.d.). Accessed on May 7, 2025, from https://www.businesswire.com/news/home/20250311192743/en/Southeast-Asia%E2%80%99s-E-Commerce-to-Reach-New-Heights-Driven-by-Digital-Payments-and-Cross-Border-Commerce-Growth
7. Euromonitor International. (2025, February 4). Digital Wallet Opportunities in Emerging Asia Pacific Markets ... Accessed on May 7, 2025, from https://www.euromonitor.com/article/emerging-opportunities-for-digital-wallets-in-developing-asia-pacific-apac-markets
8. SME Policy Index: ASEAN 2024- Enabling Sustainable Growth and Digitalisation. (n.d.). Accessed on May 7, 2025, from https://asean.org/wp-content/uploads/2024/09/Full-Report_ASEAN-SME-Policy-Index-2024_20-Sept-2024.pdf
9. MSME Access to Digital Finance Study: in Selected EMDE Countries in Asia. (n.d.). Accessed on May 7, 2025, from https://smefinanceforum.org/post/msme-access-to-digital-finance-study-in-selected-emde-countries-in-asia?page=25
10. Unique Digital Wallet Features Boosting Customer Experience - DigiPay.Guru. (n.d.). Accessed on May 7, 2025, from https://www.digipay.guru/blog/unique-features-of-digital-wallet-solution/
11. Payment regulations in Asia: A detailed overview - Payop. (n.d.). Accessed on May 7, 2025, from https://payop.com/uncategorized/payment-regulations-in-asia-a-detailed-overview/
12. Malaysia Financial Sector Blueprint 2022-26 - A Booster for Digital Finance. (n.d.). Accessed on May 7, 2025, from https://www.komunikasi.gov.my/awam/berita/233-kkd-news/21482-malaysia-financial-sector-blueprint-2022-26-a-booster-for-digital-finance
13. Positive Technologies. (2025, March 19). Cybersecurity threatscape in Southeast Asia. Retrieved from https://global.ptsecurity.com/analytics/cybersecurity-threatscape-in-southeast-asia
14. Navigate APAC's Current Digital Payments Landscape - Forrester. (n.d.). Accessed on May 7, 2025, from https://www.forrester.com/blogs/navigate-apacs-latest-digital-payments-landscape/
15. Integrating Digital Payments in ASEAN. (n.d.). Accessed on May 7, 2025, from https://www.eria.org/uploads/Integrating-Digital-Payments-in-ASEAN.pdf
16. Establishing the Southeast Asian QR Code Payment Alliance through interoperability - CardInfoLink. (n.d.). Accessed on May 7, 2025, from https://cardinfolink.com/en-US/newsroom/article/12
17. A Comprehensive Analysis of ASEAN's Digital Payment System and Economic Integration. (n.d.). Accessed on May 7, 2025, from https://www.thailand-business-news.com/banking/203109-a-comprehensive-analysis-of-aseans-digital-payment-system-and-economic-integration
18. Holborn Assets. (n.d.). Cross-Border Payment Innovations in Asia. Retrieved May 13, 2025, from https://holbornassets.asia/blog/cross-border-payment-innovations-in-asia/
19. AI-Based Credit Scoring: Transforming Financial Risk Assessment - Litslink. (n.d.). Accessed on May 7, 2025, from https://litslink.com/blog/ai-based-credit-scoring
20. Holborn Assets. (n.d.). Unlocking Growth in Southeast Asia's Financial Services Sector. Retrieved May 13, 2025, from https://holbornassets.asia/blog/%E2%80%8Bunlocking-growth-in-southeast-asias-financial-services-sector/
21. How digital wallets are evolving to shape the future of finance - Payments Cards & Mobile. (n.d.). Accessed on May 7, 2025, from https://www.paymentscardsandmobile.com/how-digital-wallets-are-evolving-to-shape-the-future-of-finance/
22. Designing Digital Wallets: Key Principles of UI/UX, and Emerging Trends - RNDpoint. (n.d.). Accessed on May 7, 2025, from https://rndpoint.com/blog/digital-wallet-design-trends/
23. Delivering digital financial inclusion in Southeast Asia I Macquarie Group. (n.d.). Accessed on May 7, 2025, from https://www.macquarie.com/au/en/insights/delivering-digital-financial-inclusion-in-southeast-asia.html
24. The Asian Banker: Banking & Financial Services Publication Company. (n.d.). Accessed on May 7, 2025, from https://www.theasianbanker.com/updates-and-articles/ai-reshapes-banking--driving-innovation-and-risk-management
25. Fintech Singapore. (2025, January 14). Southeast Asia's Financial Institutions Embrace AI for Enhanced Productivity, Customer Experience. Retrieved from https://fintechnews.sg/106290/ai/southeast-asias-financial-institutions-embrace-ai-for-enhanced-productivity-customer-experience/
26. ResearchGate. (2025, April 7). (PDF) Security, Scalability, and Compliance: Challenges and Opportunities of Blockchain Adoption in Cross-Border Financial Systems. Retrieved from https://www.researchgate.net/publication/390535242_Security_Scalability_and_Compliance_Challenges_and_Opportunities_of_Blockchain_Adoption_in_Cross-Border_Financial_Systems/download
27. Ledger Insights. (2025, April 11). Fake news? China links CBDC payments to 10 ASEAN, 6 Middle eastern countries. Retrieved from https://www.ledgerinsights.com/fake-news-china-links-cbdc-payments-to-10-asean-6-middle-eastern-countries/
28. Netguru. (2025, April 10). Why Europe Is Lagging Behind in the SuperApp Race. Retrieved from https://www.netguru.com/blog/europe-lagging-superapp-race
29. The economic impact of mobile money in Asia I GSMA. (n.d.). Accessed on May 7, 2025, from https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2025/04/The-Economic-Impact-of-Mobile-Money-in-Asia.pdf
30. Best practices for building a fintech company, from four startups - Stripe. (n.d.). Accessed on May 7, 2025, from https://stripe.com/guides/building-a-fintech-company
31. Business Wire. (2025, February 18). Asia Pacific Loyalty Programs Business Report 2025. Retrieved from https://www.businesswire.com/news/home/20250218603575/en/Asia-Pacific-Loyalty-Programs-Business-Report-2025-Market-to-Increase-From-%2430.81-Billion-in-2024-to-Reach-%2460.03-Billion-by-2029---Competition-Driven-by-e-Comm-Giants-Super-Apps-Digital-Payments---ResearchAndMarkets.com
32. Bank for International Settlements. (2023, July). BIS Papers No 136 Making headway – Results of the 2022 BIS survey on central bank digital currencies and crypto. Retrieved from https://www.bis.org/publ/bppdf/bispap136.pdf
33. Personetics. (2023, October 7). BPI and Personetics Partner to Help Customers Make Better Money Decisions Through AI. Retrieved from https://personetics.com/resource-center/bpi-and-personetics-partner-to-help-customers-make-better-money-decisions-through-ai/
34. IT Ukraine Association. (2025, May 10). FinTech Trends 2025 — Consumer Finance Meets AI Across Regions. Retrieved from https://itukraine.org.ua/en/fintech-trends-2025-consumer-finance-meets-ai-across-regions/
35. Data Insights Market. (2025, May 11). e-Wallet (Digital Wallets) CAGR Trends: Growth Outlook 2025-2033. Retrieved from https://www.datainsightsmarket.com/reports/e-wallet-digital-wallets-1453503
36. Biometric Update. (2025, March 5). Digital wallets key to securing trust in the crypto world. Retrieved from https://www.biometricupdate.com/202503/digital-wallets-key-to-securing-trust-in-the-crypto-world
37. The Fintech Times. (2025, April 12). Are Traditional Banks Keeping Up With Embedded Finance, or are They Falling Behind? Retrieved from https://thefintechtimes.com/are-traditional-banks-keeping-up-with-embedded-finance-or-are-they-falling-behind/
38. Business Wire. (2024, September 30). Asia Pacific Embedded Finance Business Report 2024. Retrieved from https://www.businesswire.com/news/home/20240930928848/en/Asia-Pacific-Embedded-Finance-Business-Report-2024-Revenues-to-Reach-%24255.49-Billion-by-2029-from-%2473.75-Billion-in-2024---75-KPIs-on-Embedded-Lending-Insurance-Payment-and-Wealth-Segments---ResearchAndMarkets.com
39. Fintech Singapore. (2025, January 27). 5 Payment Trends in Asia Shaping its Financial Landscape in 2025. Retrieved from https://fintechnews.sg/106915/e-wallets/asia-payment-trends-2025-digital-finance-revolution/
40. Fintech Singapore. (2021, August 18). Banking-as-a-Service: A Promising Sector in Southeast Asia. Retrieved from https://fintechnews.sg/54144/innovation/banking-as-a-service-a-promising-sector-in-southeast-asia/
41. TNGlobal. (2023, November 10). The promising and challenging terrain of embedded finance in Southeast Asia. Retrieved from https://technode.global/2023/11/10/the-promising-and-challenging-terrain-of-embedded-finance-in-southeast-asia/
42. UNCDF. (2023, June 7). First-Ever Impact-Focused Southeast Asian Financial Inclusion Report Charts Pathways to Accelerate Impact Beyond Access. Retrieved from https://www.uncdf.org/article/8264/first-ever-impact-focused-southeast-asian-financial-inclusion-report-charts-pathways-to-accelerate-impact-beyond-access
43. KPMG International. (2024, April). Bridging Horizons. Retrieved from https://assets.kpmg.com/content/dam/kpmg/sg/pdf/2024/04/bridging-horizons.pdf
44. EY Singapore. (2024). How 2024 will spark financial services innovation in Southeast Asia. Retrieved from https://www.ey.com/en_sg/insights/financial-services/asia-pacific/how-2024-will-spark-financial-services-innovation-in-southeast-asia
45. Accelerating Digital Ecosystem Development through Strategic Alliances - Deloitte. (n.d.). Accessed on May 7, 2025, from https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/strategy/sea-strategy-monitor-deloitte-accelerating-digital-ecosystem.pdf