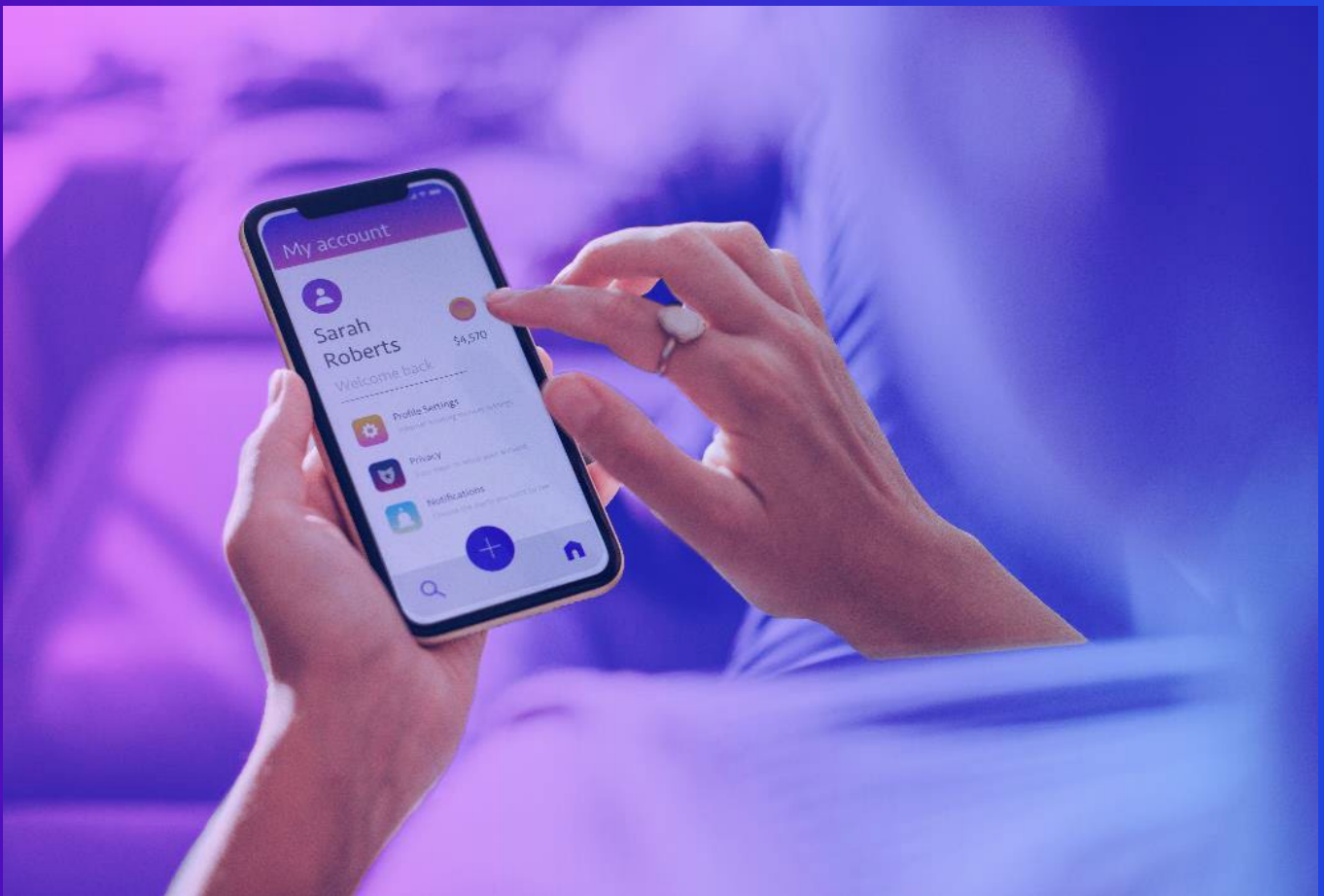


Building cross-border payments for an interconnected world



ABOUT KPMG

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ABOUT ELEVANDI

Elevandi is set up by the Monetary Authority of Singapore to foster an open dialogue between the public and private sectors to advance FinTech in the digital economy. Elevandi works closely with governments, founders, investors, and corporate leaders to drive collaboration, education, and new sources of value at the industry and national levels. Elevandi's initiatives have convened over 300,000 people to drive the growth of FinTech through events, closed-door roundtables, investor programmes, educational initiatives, and research. A flagship product is the Singapore FinTech Festival alongside fast-rising platforms, including the World FinTech Festival, Point Zero Forum, and the recently launched Elevandi Insights Forum.



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1 Introduction

Cross-border payments are at the heart of seamless interconnectivity in the ASEAN region. By 2030, Southeast Asia's payments market is expected to hit US\$2 trillion in transaction value, according to a Google-led report published in *The Business Times*¹. The domestic payments sector within ASEAN countries is an integral part of their respective regional digital economies, brimming with innovation, opportunity, and competition. To enhance regional as well as international collaboration for cross-border payments, Elevandi hosted a roundtable during the Singapore Fintech Festival. Representatives from central banks and regulatory bodies, banks, and fintechs were invited to share insights and perspectives.

During the panel, there was a major focus on how interoperability across different domestic payment clearing systems can change the narrative of cross-border payments and ultimately contribute to the ASEAN Economic Community (AEC) 2025 vision of financial integration. Given the several initiatives in ASEAN towards economic cooperation, multilateral connectivity for scaling cross-border payments regionally and internationally was another key area of focus.

The panel was co-moderated by Jo Yeo and Raihan Zulimran, Head of Payments Development and Data Connectivity, MAS, and Team Lead, Next Gen Payments, MAS respectively. There were 20 panelists and a number of observers from markets within the Asia, EU, and US regions.

The key themes emerging from the discussions centered around interoperability amongst domestic clearance systems, real-time value transfers, technology, and sandboxes. It was also evident during the dialogue that for any cross-border payment vision to materialize, there needs to be an establishment of uniform regulatory frameworks. Project Nexus and Project Dunbar were cited as exemplar models which could be used to inform future multilateral arrangements.

Project Nexus

Nexus is a blueprint for connecting national payment systems into a cross-border platform. It aims to enable cross-border payments in less than 60 seconds. The project concluded its testing phase in March 2023. It proved the technical viability of multilateral payment systems. The goal of the project is to speed up the process of linking FAST payment systems and standardise the way that they connect with one other across the G20 nations.

Project Dunbar

Project Dunbar explores how a common platform for multiple central bank digital currencies (multi-CBDCs) could enable cheaper, faster, and safer cross-border payments. It identified challenges of implementing a multi-CBDC platform shared across central banks and proposed practical design approaches to address them. These design approaches were validated through the successful development of technical prototypes on Corda and Partior, proving that the concept of multi-CBDCs was technically viable.

In addition to the panel, there were several payments-related events at the Singapore Fintech Festival (SFF). Hosting over 60,000 attendees, SFF explored the crossroads between finance and technology. There was a spotlight on the future of Central Bank Digital Currencies (CBDCs), Cryptocurrencies, and Stablecoins and pathways to integrate these new forms of digital money into payment systems of the future.

2 Interoperability and Connectivity in ASEAN

With an optimistic overlook at the way forward for payments interconnectivity in the region, discussions kicked off. Participants discussed that ASEAN is home to countries that are leading the way for innovation in payments. Several ASEAN member states are already involved in operational and lateral process payments that facilitate real time peer-to-peer fund transfers and QR code-based peer-to-merchant transactions. The example of the PayNow-PromptPay initiative between MAS and the Bank of Thailand² was shared- it is the first in the world to connect fast-payment systems between two countries.

PayNow-PromptPay allows the following benefits :

Speed: end-to-end transfers within minutes, rather than a minimum of 1-2 hours

Convenience: optimizes the processes, reducing the steps by only needing recipient's phone number

Competitive Pricing: fees are transparent and benchmarked against the current market

PayNow-PromptPay

A collaborative effort between MAS and Bank of Thailand to receive funds via a mobile phone number, rather than a bank account number, via electronic channels – namely internet banking, mobile banking, and ATMs. It is the first in the world to achieve this. It received the “Initiative of the Year” award in 2022.

“It is evident that collaboration between regulators is reducing friction points in cross-border payments and enabling cross-border trade”

Regulators pointed out how the G20 endorsed an ambitious roadmap to enhance cross-border payments around the world. The G20 roadmap was developed by the Financial Stability Board (FSB) in coordination with the BIS Committee on Payments and Market Infrastructures (CPMI) and other international bodies. Maintaining the commitment and momentum of cross-border payments in discourse with regulators and crucial decision-makers during the G20 remains a priority. Most participants voiced that considering the existing traditional infrastructures and individual regulations, laws and monetary frameworks need to be incorporated into each step of achieving interconnectivity. It is not just about enhancing existing infrastructure, however, but building new infrastructures that can adapt to demands across the region.

Connectivity across the markets needs to be cost-effective and timely as well. For traditional infrastructure, several participants concurred on the benefits of using new technologies, such as APIs, to bridge the gap.

Further, the need for a more in-depth look into the co-existing and partnerships of the variety of systems was emphasized. The next steps involve a holistic approach towards interoperability and using a local currency transaction framework (LCT). The LCT covers money markets, foreign exchange, and cross-border payments.

Currency arrangements and the cooperation between different currencies:

Innovation in the payments industry also needs to be supported with the facilitation and development of payment linkages by central banks, which will help the transition from bilateral to multilateral connectivity.

This requires not only the interlinking of the LCT framework – finding what works and coming to a middle ground but also domain-wise alignment on what the needs are for different lines of business.

3 Bilateral connectivity to multilateral connectivity

ASEAN hosts a diverse range of perspectives and processes that can foster collaboration towards connectivity. The use of digital distribution channels and infrastructures can provide broad new levels of global access to central bank money and payment services. Leveraging on the existing connectivity and capabilities within the region will allow for holistic and improved payment connectivity in future projects. ASEAN has started addressing this issue by launching the “PayNow-PromptPay linkage” ie, a linkage between PayNow (Singapore) and PromptPay (Thailand) in April 2021. To continue on this path, it can consider some successes outside the region and take away key learnings to incorporate in their emerging systems.

For instance, the European Union, where the monetary union is harmonized, payments connectivity is advanced. Participants discussed the key features of IPS in the European Union (EU). This uniform payment system across Europe has lowered costs significantly and removed several complexities with regards to payments processing for businesses.

As another example, Banca d’Italia (Bank of Italy) has devised TIPS (TARGET Instant Payment System), which functions as a European multi-currency platform for connecting instant payment systems. One of the key features of TIPS is that it allows settlement in different currencies, which highlights a strong multilateral model.

Several references were made to Project Nexus, a platform that helps to overcome the complexity of linking IPS on a country-to-country basis by providing a standardized way for domestic payment systems to speak to each other, thereby enabling interoperability across different payment systems. This process is illustrated in Figure 1 below.

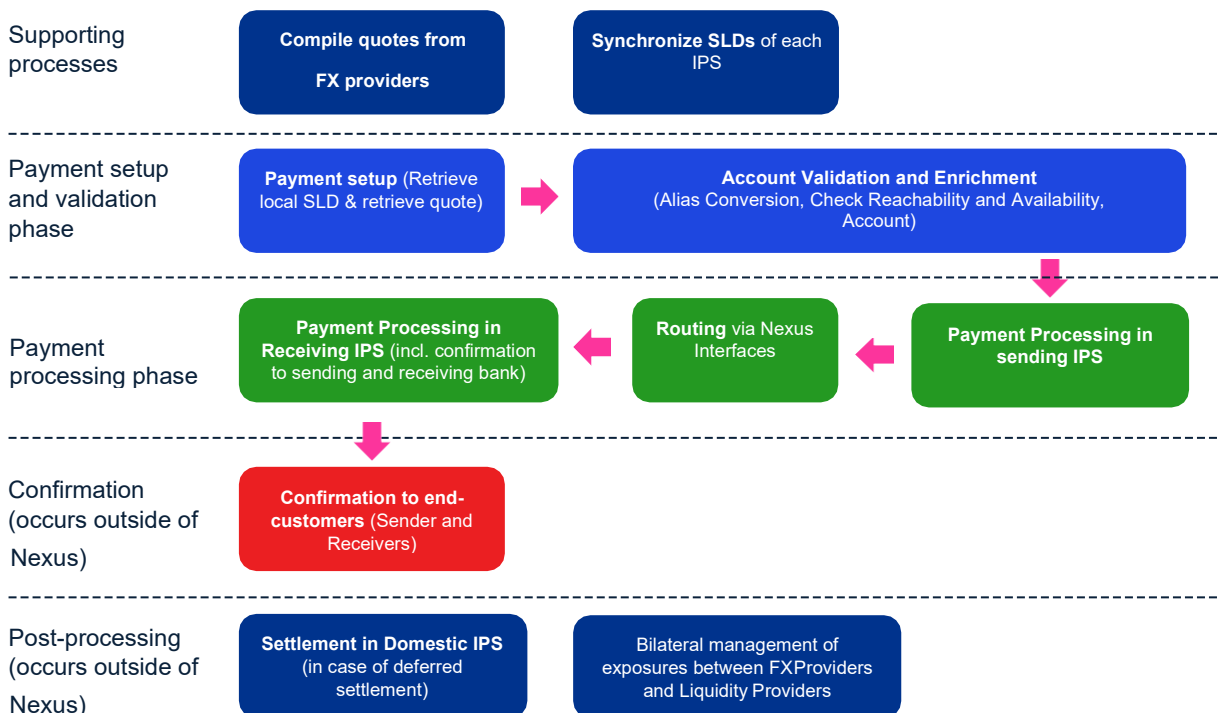


Fig.1

The outcomes achieved from the proof-of-concept stage of Project Nexus will allow ASEAN to not only use the Nexus model³, but also build their own initiatives to further cross-border payments. In particular, the project's progress in its Proof of Concept connecting domestic instant payments systems across jurisdictions with TIPS is seen as promising. This shift from regional multilateral payment systems to global multilateral payment systems could become a significant platform for value exchange.

Notwithstanding the potential benefits, an ASEAN regulator cautioned that bilateral connectivity needs to be carefully and properly achieved before shifting to multilateral connectivity. Prior to considering any corridors for connectivity, payment regulators need to look at the compatibility between governments and central bank operations. Payment regulations and systems are driven from the top, which means that without compatibility and cooperation in governance, these corridors will be more difficult to achieve. Similarly, even if there is governance compatibility, payment systems need to work with central bank operations- and there needs to be operator-to-operator compatibility for proper functioning as well. The multi-dimensional nature of such corridors needs to be considered in the wider scope of establishing connectivity across payment systems.

Ultimately, delaying the establishment of bilateral and multilateral connectivity is an opportunity cost for the payments industry. Despite the challenges, participants noted that ASEAN is well-positioned to capitalize on the opportunity now.

Collaboration is not straightforward though. The region must consider the discrepancies in resources and regulation, which will impact consistent cooperation. Participants discussed this with the role of the private sector in payment systems. Regulators came back with different views on their existing regulations. In Indonesia, there has been a revamp of the regulatory framework, which subjects all relevant institutions to regulations under the same standards. The financial landscape across Southeast Asia encourages open competition and open infrastructure to make a level playing field between banks and non-banks. Central banks are encouraging non-banks to raise their security standard, data governance and risk management. In India, these sentiments are echoed, highlighting that there is no discrimination between banks and non-banks, and that the public and private sector must work together to achieve cross-border connectivity. Meanwhile in Singapore, there is direct access to FAST payments for all. Considering these differences in regulation can help strengthen collaboration amongst ASEAN states.

Having demonstrable use cases will help drive cooperation and formulate strong solutions. One participant highlighted remittance as a key use case on cross-border peer-to-peer payments that ASEAN governments can showcase in fulfilment of the G20 priorities. The road ahead is full of challenges, but ones that can be overcome if cooperation and communication remain open between all parties. Ecosystems will need to be able to handle large volumes of data and transactions. These more extensive networks could be more vulnerable to cyber hacks and crime. The key here, however, is that all countries are equal in the road to connectivity and should work with collective resources to build the optimal FAST payments system.

Institutions move at different paces. Concluding on a shared understanding of the goals and endgame will allow each country to plan and invest their resources towards the most ideal form of interconnectivity. Trust is a core element, and solutions should be neither overwhelmed nor undermined by a flurry of priorities, regulations, and decisions. But most importantly, international connectivity will not happen overnight. Regulators emphasized that this is an ongoing learning process and no one corridor of connectivity provides more value than the other. There are various possibilities, and as the region sees more volume and demand, banks will come back with more challenges. There is still a long way to go, but with the crucial developments taking place, ASEAN is capable of moving beyond just a regional level of interconnectivity. A promising path forward is in exploring emerging technologies like Distributed Ledger Technology (DLT) and Digital Currencies and how they can be integrated into current and future payment system models to enable multilateral cross-border payment capabilities.

3.1 Emerging Technologies in Cross-Border Payments

The panel highlighted that incrementing current technology would not provide leapfrog benefits. They explained that cross-border payments still rely heavily on the correspondent banking model, where an international payment passes through multiple correspondent banks using the foreign currencies held with each of them. This results in an extremely expensive and inefficient process. Additionally, there are very high foreign exchange conversion costs for small to medium size transactions.

Nevertheless, the panel expressed optimism at the potential of emerging technologies like CBDCs, DLT, and Tokenization in enhancing cross-border payments. Most panelists agreed that CBDCs and DLTs require regulation to adapt to the payments connectivity systems in ASEAN.

“There is optimism on the potential of Central Bank digital Currencies (CBDCs), Distributed Ledger Technology (DLT), Tokenization, and Web3.0”

3.2 DLT and Digital Currencies: What models exist?

A regulatory authority shared the case study of the Bakong payment system in Cambodia, which is a DLT-based payment infrastructure that connects financial institutions and payment service providers and allows transactions to be settled securely in real-time using digital Cambodian Riel (KHR) or United States Dollars (USD). Through the use of blockchain technology, Bakong enables interoperability between banks and financial institutions, streamlines payments processing, and reduces the costs associated with interbank transactions.

Bakong

A hybrid CBDC initiative launched by the National Bank of Cambodia in late 2020. Using blockchain technology, it allows peer-to-peer transactions to be made faster and at a lower cost, while maintaining interoperability with legacy payments infrastructure. It is one of the first in the world to be in daily use since its inception⁴.

Bakong also introduces new and more efficient models for cross-border payments, particularly for international remittances as it allows peer-to-peer transactions to be carried out at a lower cost. Bakong redefines cross-border payments by combining e-wallets, mobile payments, online banking, and financial applications within one easy-to-use interface for any registered user. The panel highlighted the potential of the model to be replicated across the region.

As of July 2022, there are over 445,000 users of the Bakong digital wallet, while around 12.7 million transactions valued at US\$7.2 billion have been processed through the system. The steady adoption of Bakong underscores the utility of emerging technologies like blockchain and Digital Currencies in reducing frictions in the payments process and promoting greater financial inclusion.

References were also made to Project Dunbar on exploring the use of CBDCs for international settlements. Participants discussed how they can leverage the outcomes achieved from Project Dunbar to help facilitate efficient back-end settlement of central bank money on a 24/7 basis. By integrating a multi-CBDC network with a common settlement infrastructure, Project Dunbar demonstrated that transacting parties could use CBDCs issued by different central banks to transact directly with each other on the shared platform, leading to less reliance on intermediaries like correspondent banks and consequently, reducing the costs and time involved in processing cross-border transactions.

This initial phase of the project successfully developed working prototypes and demonstrated practicable solutions that proved the technical viability of multi-CBDCs. The prototypes validated the design approaches taken to resolve some of the key challenges in implementing a shared multi-CBDC platform, particularly in relation to access, jurisdictional boundaries, and governance.

Initiatives like Bakong and Project Dunbar offer interesting insights into the capacity of emerging technologies in improving financial systems for all participants. By combining the decentralized architecture of DLT, programmability of smart contracts, and Tokenization capability (for the issuance of Digital Currencies like CBDCs) into an integrated platform design, innovative new models of payment solutions for cross-border payments have been produced. While the panel noted that the payment landscape is currently characterized as a proliferation of 'digital islands' or 'networks of payment systems', such emerging technologies have the potential to connect the value of these digital islands together in a secure and stable manner.

A panellist concluded that although there may be significant benefits to conducting settlements on a common platform, challenges regarding operations, regulations, and cyber resilience remain.

3.3 Operations

The challenges in creating new cross-border payment methods and utilising new digital advancements lie within 'operations, frameworks and cyber'. These concerns were shared by several participants, who argued that emerging technologies and payment systems remain largely untested, especially in the context of systemically important market infrastructure. Further, designing an appropriate governance framework that covers DLT-based systems and powers a multi-CBDC approach needs collaboration across several regulators and central banks. One of the regulators emphasized the current inconsistency of regulations for Digital Currencies and emerging technologies across different jurisdictions meant that the innovation across domestic payment systems would hamper replicating operational success at cross-border levels.

3.4 Regulations

The panel agreed that central banks and regulators can ensure there is an inclusive and pragmatic framework to protect the interest of relevant parties. Payment regulations are different in each country, and participants in a cross-border payment are subject to these different regulatory regimes, which lead to inefficiencies, with regards to time, cost, and resources. A key challenge is how to simplify the cross-border payments flow while respecting regulatory differences across jurisdictions. Panellists coined the term "uniform soft infrastructure" which helps with delineation of jurisdictional boundaries, adherence to regulatory policies of different jurisdictions, and the streamlining of settlement processes.

There was conjecture on frameworks that are used for bilateral sandboxes and their potential provision of building blocks for the multilateral cross-border payments arrangements. Additionally, certain regulators pointed out that countries such as Singapore, India and Indonesia have frameworks which can be exported to such cross-border initiatives. It was agreed that it is important that the payments community doesn't try to solve for everything but that it initiates a set of well-defined strategic projects with a view to learn and evolve.

3.5 Cyber Resilience

The security of CBDCs has a real-world impact and can affect their implementation. Potential cybersecurity flaws can deflate public trust in Digital Currencies and cross-border payment platforms. Although databases exist with digital payments today (e.g., credit cards), CBDCs present an even greater potential for data centralization, thus a similarly increased cybersecurity risk. Regulatory agencies have less to no visibility into this type of data, which is something regulators might consider trying to address in any processes they design for industry engagement or digital market infrastructure.

Panelists shared concerns about new payment methods and technologies demonstrating cyber resilience especially in the context of high payment volumes. It was discussed that cyber security needs to be a part of the fundamental design in comparison to added characteristics. One panelist discussed how robust infrastructure, along with adequate cyber security measures, will be required to secure high rates of adoption. The exemplar that was highlighted was India's UPI, with a quoted 7.1 million daily transactions.

The moderator concluded that innovation when coupled with resilience, can help create a robust new payment infrastructure, which will power growth across the interconnected economies within ASEAN.

3.6 The Future of Cross-Border Payments

Panelists concluded the future of cross-border payments is bright, given the level of focus and experimentation to solve real-world, everyday challenges. The discussion provided four key actionable items:

1. Interoperability across payment methods and connectivity across multiple domestic payment systems will be the key to developing new cross-border payments solutions. Exploration via sandbox projects such as Nexus, Dunbar or others will provide unique learning experiences which in turn can then be scaled into wider market execution.
2. It is evident that CBDCs, DLT and Tokenisation are becoming crucial to interconnectivity. While the use of such emerging technologies could potentially bring about significant economic benefits for cross-border payments, these technologies are still at a very nascent stage of development and their associated risks need to be properly managed through responsible innovation to safeguard the integrity of the financial ecosystem.
3. Resilience will need to be built into the design of any new platform, both across operational and cyber layers of any infrastructure. This capability will need to operate at scale from day one.
4. Regulators and Central Banks across ASEAN will need to collaborate much more and start plotting out their 'soft infrastructure'. Uniform framework and regulations will be the cornerstone of any successful cross-border payments venture.

The goal will not be to build the most optimum payment platform, but rather work together to establish a practical 'value transfer mechanism' that truly helps elevate trade and commerce across the interconnected economies of ASEAN.

For more information on KPMG’s extensive work on fintech and blockchain, refer to the selection of publications below.



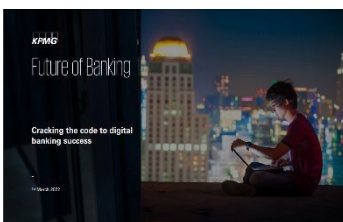
Pulse of Fintech: H2'22

The breadth of fintech solutions attracting investment continued to expand and grow, with surging interest in cryptocurrencies and blockchain, wealthtech, and cybersecurity. Entering 2022, the optimism for fintech investment globally is very strong, with different subsectors well-positioned to keep evolving and new ones expected to emerge and flourish.



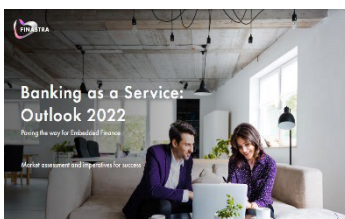
Fintech Wire: A spotlight into the Insurtech investment ecosystem

The integration of technology with financial services, widely characterized as 'Fintech' has emerged as a key disruptor requiring financial services companies to rethink their business and operating models. Given this scenario, it is important for industry leaders to be aware of the fintech ecosystem and its nuances to drive meaningful conversation with clients.



Future Banking: Cracking the code to digital banking success

The digital bank of the future will help customers achieve their goals by connecting their finances through the various digital providers. In this way, customers can see a more holistic and seamless progress of achieving their various goals. We foresee the Digital Bank as the engine for a fully customer-centric, data-driven business model, “connecting” the front, middle and back office.



Banking as a Service: Outlook 2022

Banking as a Service (BaaS) has become one of the most important strategic agenda items for chief executives across numerous industries beyond banking, from manufacturing to healthcare. BaaS enables any business to develop new and exciting propositions with relevant financial services embedded into the customer experience. Overall, BaaS is expected to reach a value of US\$7 trillion by 2030. Those that wait will be left outside looking in.

Endnotes

- 1 Digital payments hold key to untapped e-commerce growth in S-E Asia:
<https://www.businesstimes.com.sg/opinion-features/columns/digital-payments-hold-key-untapped-e-commerce-growth-s-e-asia>
- 2 Joint BOT-MAS Release:
https://www.bot.or.th/English/AboutBOT/Activities/Pages/JointPress_29042021.aspx
- 3 BIS Innovation Hub: Overview of Nexus Flow:
<https://docs.bis.org/nexus/an-end-to-end-payment-through-nexus/overall-flow>
- 4 “Bakong” user numbers surge:
<https://www.phnompenhpost.com/business/bakong-user-numbers-surge>

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