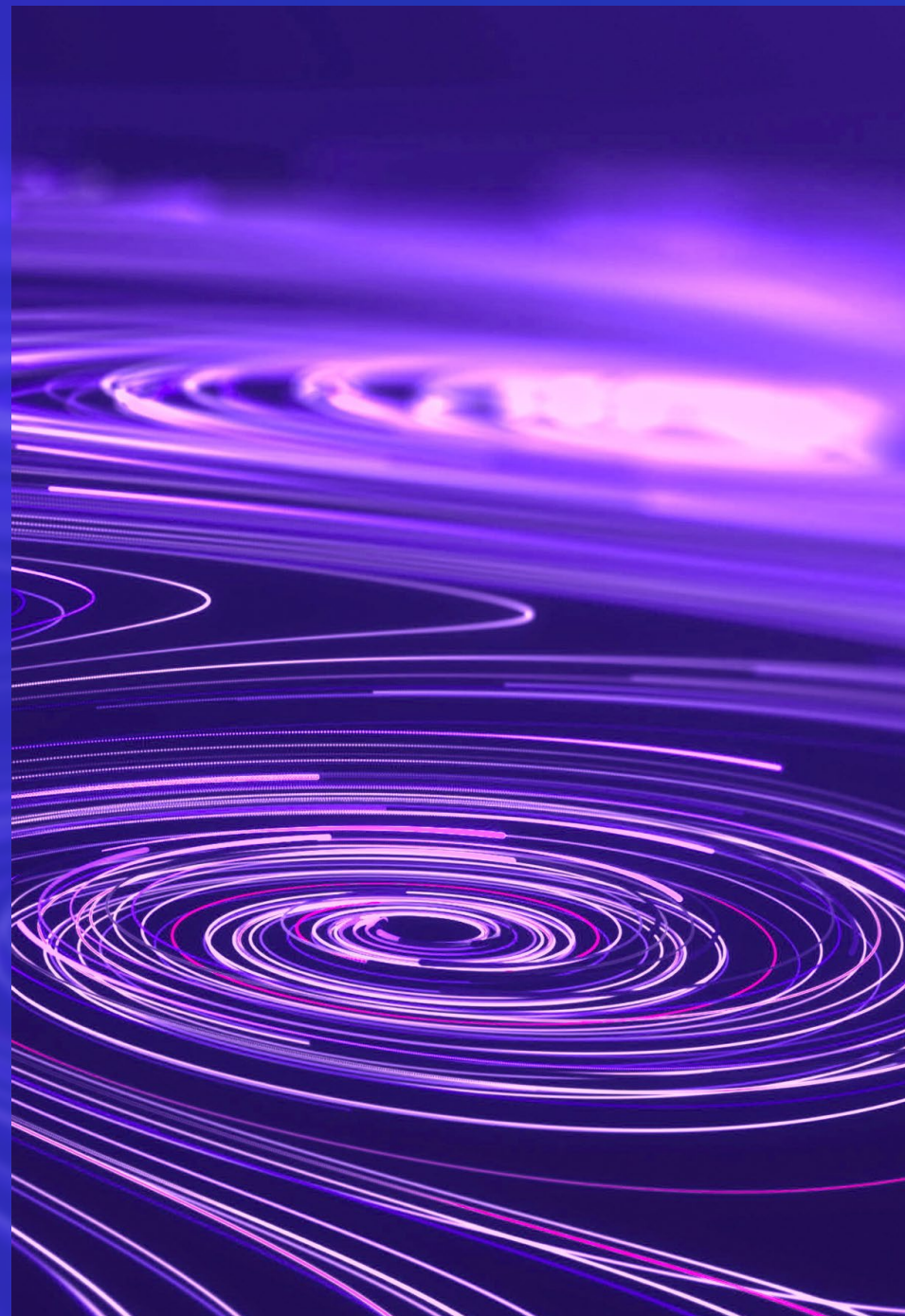




Embedded Finance

Partnering platforms
for success

KPMG in Singapore





Foreword

Embedded finance (EmFi) has proliferated over the last five years with the entrenchment of payment capabilities into many platform businesses. Whilst EmFi isn't a new concept, having been born out of traditional point of sale (POS) transacting, it is driving significant growth in the pace and scale of online transactions and credit. Asia Pacific's EmFi industry is expected to reach US\$110 billion in 2022.¹ From here, EmFi revenue in the region is estimated to increase to US\$360 billion by 2029, recording a compounded annual growth rate of 24.4%.¹

This growth is expected to be fuelled by changing demographics, consumer buying behaviour driven by increasing financial literacy, financial inclusion as well as the proliferation of online

transactions. Ultimately, we see EmFi benefiting customers and businesses alike. Over time, we expect EmFi to drift into B2B transactions to facilitate trade flows and supply chain efficiency. Investors will play an important role in funding EmFi and accordingly, we expect strong deal flow into EmFi and DeFi (decentralised finance) supporting business models and platforms.



Stephen Bates

Head of Financial Services Deal Advisory, ASPAC
Head of Transaction Services, Singapore

1. <https://www.globenewswire.com/news-release/2022/03/23/2408280/28124/en/Asia-Pacific-Embedded-Finance-Markets-Report-2022-50-KPIs-on-Embedded-Lending-Insurance-Payment-and-Wealth-Segments-2020-2029.html>

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Introduction to EmFi

The banking and financial services sector is constantly evolving. Traditional financial products and services are being disrupted by a wide range of factors, including innovative technologies (e.g., cloud computing, artificial intelligence), emerging fintechs with disruptive business models, and the proliferation of application programming interfaces (APIs) which are supporting Banking as a Service (BaaS).

Financial services typically offered by banks and other financial institutions are now being embraced by non-financial players—many of whom are integrating financial offerings within their own products, solutions, and platforms at their customer's point of need.

This concept is called embedded finance. The most obvious and prolific example used today is a company providing customers with the ability to purchase goods via a website or an app using different payment options (e.g., credit card, digital wallet, installment financing). This embeds finance into the transaction process and speeds up the customer journey.

Many non-financial companies provide embedded finance offerings via a third party fintech partner. These arrangements are viewed as a win-win for both parties, making it a highly attractive business model. While the use of embedded finance has increased in recent times, the next few years will likely see adoption rise exponentially. The size of the embedded finance

market is projected to reach US\$230 billion in 2025—more than ten times the US\$22.5 billion seen in 2020.²

Categories of embedded finance

The embedded finance space is growing increasingly diverse, although offerings typically fall within one of four key categories:

Embedded payments

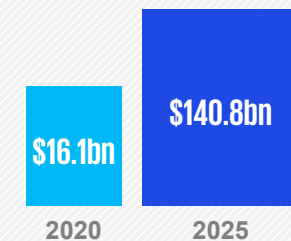
Embedded payments refers to the integration of digital payment options within a non-financial company's platforms and apps. This arrangement enhances customer convenience significantly by providing the ability to seamlessly pay for goods without having to leave a company's website or app. Key examples include digital wallets and instant payments.

Embedded insurance

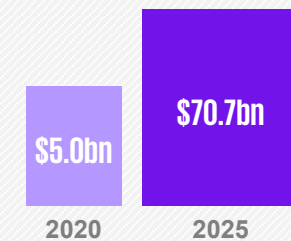
Embedded insurance involves the real time bundling and sale of insurance products as part of the sale of a separate product or service. This arrangement allows consumers to buy insurance products related or tangential to the item being purchased at the point of sale only. A common example is the offering of add-on insurance to customers when they purchase electronics (e.g., mobile phones, laptops) online, and more recently embedded finance into activities like ride hailing transport point to point.

2. <http://www.forbes.com/sites/ronshevlin/2020/08/03/ubers-departure-from-financial-services-a-speed-bump-on-the-path-to-embedded-finance>

Payments²



Insurance²





Embedded lending

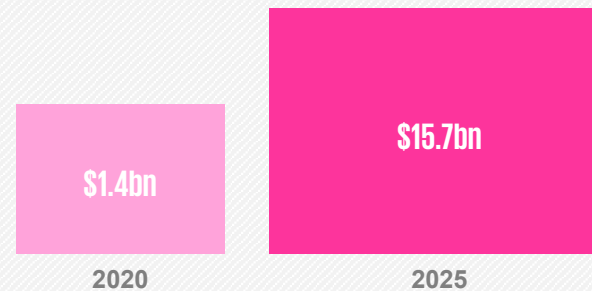
Embedded lending refers to the integration of lending services within the digital platforms or offerings of non-financial players. Common examples include “Buy now, pay later” (BNPL), financing for small and medium-sized enterprises, and co-branded credit cards. The BNPL model, in particular, has seen incredible growth in recent years; it allows customers to make purchases immediately while deferring payment to a future date. BNPL is not a new concept, it has merely been enabled through e-commerce platforms.

Embedded Investing/wealth management

Embedded investing and wealth management refers to the inclusion of investment products within the digital platforms of a non-financial company. For example, some health insurance providers offer investment options to customers through their existing accounts, while some ecommerce and ride-hailing companies allow customers to purchase cryptocurrencies using the available balance in their linked digital wallet.

While interest in embedded payments, lending, and insurance has grown significantly over the last few years, the embedded investing and wealth management space is still in its infancy. Service providers, however, are gradually starting to integrate wealth and investment services within their core product offerings, in what appears to be a natural progression from offering other embedded services.

Lending²



Wealth Management²



2. <http://www.forbes.com/sites/ronshevlin/2020/08/03/ubers-departure-from-financial-services-a-speed-bump-on-the-path-to-embedded-finance>



Best practice drivers for implementing EmFi

► Benefits of embedded finance

Embedded finance provides a wide-range of benefits—both directly to the participants involved in a given transaction and indirectly to other parties working to improve the economy (e.g., governments, regulators, not-for-profits). Benefits to key stakeholders include:

Financial institutions

Unlocking growth opportunities: The surge in both the volume and value of transactions due to the offering of financial services by non-traditional players can help banks and other regulated financial institutions increase their customer base and extend the value they can provide to their customers.

By embracing embedded finance, financial institutions can form meaningful strategic partnerships with non-financial players. They can develop new sales and distribution channels for their own organizations even as they provide non-financial players with well-established payment infrastructure, lending facilities, credit and fraud checking services, and other products and services—creating a win-win situation for all.

Consumers

Enhanced customer experience: Embedded finance enhances the customer experience significantly by providing seamless and convenient access to necessary financial services directly on a company's website or app—thus eliminating the need to navigate across different webpages, platforms, or apps to make a single purchase. Consumers also benefit from being able to seamlessly access other financial services (e.g., payments, instalment financing, insurance, investing) without the hassle of needing to visit a branch, navigating multiple websites or accounts, or repeating administrative procedures (e.g., login procedures).

Government

Improved financial inclusion amid increasingly cashless economy: Many governments have prioritised financial inclusion, particularly in developing economies with significant unbanked and underbanked populations. With the surge in internet and smartphone penetration, many countries also want to prioritise the transition to a cashless economy, although not at the expense of providing easy and accessible financial services to their citizens. Embedded finance can play a key role in achieving both of these objectives.



Non-financial institutions

Embedded finance provides non-financial institutions with numerous benefits, including:

Revenue diversification and growth: The ability to diversify their revenue streams by integrating financial services into their core product and service offerings is a key reason non-financial players are venturing into embedded finance. For example, an automobile company can obtain an additional revenue stream by providing insurance offerings at the point-of-sale rather than having their customers go to an insurance company directly. Providing customers with convenient and seamless access to related transactions at the point-of-sale can also lead to a higher percentage of completed sales which, in turn, can contribute to improved revenue.

Increased customer lifetime value: Globally, many retailers are challenged by the high volume of customers abandoning their online carts before final checkout on a retail platform. This often occurs because customers want more time to consider a purchase or because the company does not offer a preferred mode of payment. The ready availability of alternative payment options, such as BNPL or an equated monthly instalment (EMI) arrangement, can help address this issue. Customer brand loyalty is also viewed as a by-product of embedded finance as it contributes to customer retention rates and average order value.

Improved customer insight: By embedding financial services into their end-to-end sales process, non-financial businesses can also gain a more holistic view of the purchasing behaviour and payment history of their customers. By leveraging technologies such as artificial intelligence (AI) and smart data analytics, businesses can generate higher-value customer insights that they can use to customise offerings, improve services, and enhance the customer journey and revenues.



In the future, three key drivers are expected to help propel interest and use of embedded finance solutions. These include:

Changing demographics and consumer buying behaviours:

Globally, the number of people aged 15 to 24 is estimated to be at least 1.2 billion, with the number expected to grow to 1.3 billion by 2030.³ This growing demographic segment, combined with increasing digital and financial literacy in many areas of the world, is likely to drive embedded finance in the future as young people are typically early adopters of new technology and digital ecosystems.

Increasing internet penetration and technological

advancement: The surging rates of mobile phone and internet penetration will likely shape the shopping experience in the future and drive demand for innovative embedded finance solutions. The continued development and proliferation of APIs will also contribute to the evolution as APIs, making it easier for companies to embed banking and other financial services into their online stores, apps, and marketplaces.

User openness to information sharing: Embedded finance is highly dependent on open banking principles as it requires the sharing of personal and confidential financial information. As a result, consumer trust and openness towards information sharing will be a critical factor in the future adoption of embedded finance. The growth of two-factor authentication, combined with increasing regulatory guidelines that govern security, transactions, and data sharing with third parties, will likely help increase consumer trust in the future—and therefore, their potential willingness to share the information needed to enable embedded finance.

3 <http://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2020/07/2020-World-Youth-Report-FULL-FINAL.pdf>



► Key risk factors for EmFi

Embedded finance is not without its challenges. Key challenges that could hinder the evolution and uptake of embedded finance in the future include:

Evolving regulatory landscape: The financial services sector is highly regulated in most jurisdictions around the world. Even within a given jurisdiction, the presence of multiple regulatory authorities is not uncommon. The regulatory landscape for embedded finance is not as structured as for the financial services sector as a whole. In the future, embedded finance will likely come under increasing scrutiny from regulators, which could create complexities in terms of licensing, compliance, and the overall development of the embedded finance ecosystem and specific solutions.

Managing cybersecurity and data privacy risks: Given that the internet and digital infrastructure are the building blocks of embedded finance ecosystems, exposure to cybersecurity risk is inevitable. Embedded finance players are also vulnerable to data privacy risks as they collect and share sensitive consumer data in return for enabling a seamless customer experience. As integration of APIs across multiple partners becomes more common, and the volume of transfers of complex and confidential data rises, businesses need to ensure that their systems and data are secure and that information privacy is maintained.

Forging the right partnerships: The use of embedded finance is often dependent on partnerships and collaborations between different parties (e.g., banks, retailers, API or platform providers). This makes identifying the right partner(s)—with compatible technologies and capabilities—critical to the successful development and delivery of embedded finance solutions. Working with partners that may have different technologies or processes in place lead to operational complexities and risks if not considered in advance.

Lack of end-user knowledge: While the concept of embedded finance has gained traction on the supply side (e.g., e-commerce players, merchants, payment providers, financial institutions), there is still limited awareness on the demand side (e.g., from consumers). This lack of awareness and understanding of embedded finance and its related concepts (e.g., open banking, data sharing, app permissions) could act as a major barrier to adoption and uptake. Regulators are also constantly looking at the approach to selling of these products where financial literacy is low, this could lead to potential adverse use of credit for customers in the short or long term.



► Value chain of embedded finance

When it comes to the value chain of embedded finance, there are three main categories of players: providers of financial services, infrastructure providers, and platforms and marketplaces. Historically, each of these types of businesses has had a distinct role from the others. However, as technology becomes more sophisticated and market players compete to capture a larger share of revenue by expanding across the value chain, the lines between these categories are blurring.



Providers of Financial Services (Capital)

- Includes large banks, small finance banks and non-banking financial institutions that manage regulatory risks, credit risks and compliance risks
- Provides financial backing for embedded financial services such as lending, insurance, BNPL, banking, payment facilitation, etc.



Infrastructure Providers (Data & Process)

- Includes companies that provide APIs to connect financial institutions with digital platforms
- Helps in activities such as credit scoping, payments, and data security, connectivity and insights



Platforms and Marketplaces (Data & Distribution)

- Includes non-financial businesses that own the website, mobile app, and other customer-facing digital platforms within which finance offerings are embedded
- Enables services such as B2C shopping, gig economy, B2B procurement, etc.



EmFi market participants and platform models

► Shifting role of market participants

With the financial services sector evolving so rapidly, many traditional banks are struggling to keep up with the ever-changing demands of their clients, including growing pressure to have everything 'digital and mobile'. With customer expectations only expected to grow, financial institutions can no longer do everything in-house. This is driving many to focus on driving innovation through partnerships and collaborations with technology providers and digital platforms. When equipped with a vast amount of customer data, these organizations can tailor-make financial solutions in ways that most traditional financial institutions simply cannot do.

While banks may face challenges establishing and building such partnerships and collaborations, it is important that they view this

challenge as a key opportunity instead—one that can help enhance their diversification strategy. By forging meaningful partnerships and being willing to experiment with banking-as-a-service (BaaS) offerings and platforms, they can increase their customer base, drive repeat transactions, provide more personalised financial solutions, and improve margins. Some forward-thinking banks have already embraced this opportunity, either organically or inorganically.

As BaaS gains more traction and prominence, digital platforms will increasingly replace banks as the face of financial services. This could disrupt the traditional banking stack model significantly over time.



► Trade finance in the world of embedded finance

Globally, the trade finance gap stood at an all-time high of US\$1.7 trillion in 2020⁴, driven by pandemic-led economic and financial uncertainties and trade disruptions. SMEs were hit hardest, accounting for 40% of rejected trade finance requests.⁴ With economic uncertainties expected to continue, SMEs could face even more difficulties accessing traditional funding sources due to their lack of collateral and poor loan approval rates. Such dynamics will likely increase the number of SMEs looking for alternative credit sources, including embedded finance.

Business to business (B2B) marketplaces: A number of digital marketplaces have ventured into embedded B2B lending, offering their customers quicker access to financing, subject to credit worthiness. Equipped with user friendly interfaces and modern risk algorithms, such platforms can reduce the time consuming and highly manual lending processes commonly found within traditional banks. By enabling the growth of their customers' businesses, these marketplaces can forge deeper and more meaningful client relationships, enhance their own sales, and expand their customer pool.

Invoice factoring: Invoice factoring is another tool by which embedded finance can enable greater access to funds. When the process of invoice factoring is embedded into marketplaces, portals, and apps, it can address the mismatched payment and credit expectations of suppliers and buyers with the help of an underwriter. While the option to procure on credit can increase buyer stickiness, instant payments can enhance seller cash flow and improve their balance sheet. This makes it a win-win value proposition.

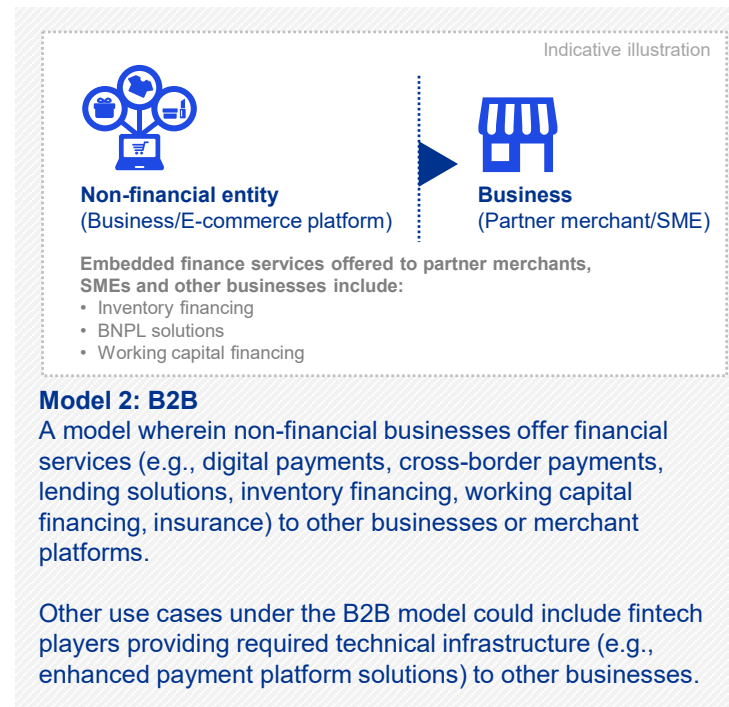
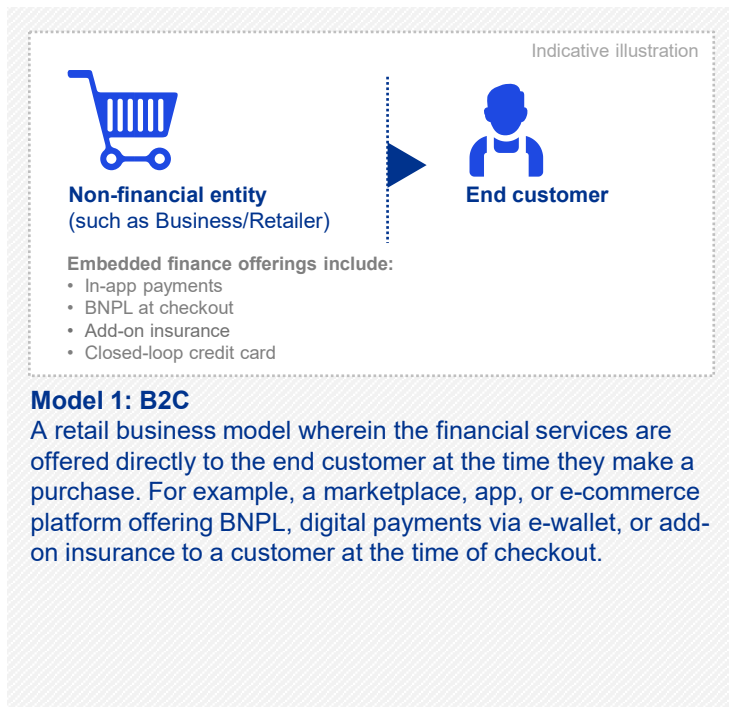
International business: In this context, embedded finance involves the integration of physical activities (e.g., ordering and shipping of goods) and financial supply chain activities (e.g., financing for the shipments) into a single platform. Typically, the logistics component is linked to the flow of funds, with any funding gaps during the shipping process addressed by providing direct access to financiers. Technological advancements—like digitised paper documents, Internet of Things (IoT) connectivity, AI, and machine learning—can also be used to reduce the time required to assess the credit worthiness of the party, including conducting checks for the quality and presence of goods, storage and handling conditions, and the location of goods.

4. <http://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2020/07/2020-World-Youth-Report-FULL-FINAL.pdf>



► Embedded finance enabling platform business models

A number of different business models exist in the embedded finance space. While business-to-consumer (B2C), business-to-business (B2B), business-to-business-to-consumer (B2B2C), and business-to-business-to-business (B2B2B) models are the most prevalent in the market today, emerging models like consumer-to-consumer (C2C) and government-to-government (G2G) are expected to gain more attention over time. Each of these six business models is described briefly below.



**Fintech / Tech
platform provider /
Financial institution**

Provides embedded
finance platform or a
financial service

**Non-financial entity
(Corporate / Business /
Retailer)**

Ties up with platform/
infrastructure/ financial
service provider to provide
end-consumer with
suitable embedded
financial offering

**End customer**

Avails embedded financial
services ranging from
digital payments, e-wallets,
insurance, wealth
management, BNPL
services

Indicative illustration

**Fintech / Tech
platform provider /
Financial institution**

Provides embedded
finance platform or a
financial service

**Non-financial entity
(Corporate / Business /
Retailer)**

Ties up with fintech/tech
platform provider or
infrastructure/financial
service company to
provide access to
customer base

**Business
(Partner merchant/ SME/
Distributor)**

Avails embedded financial
services ranging from digital
payments, e-wallets,
insurance, BNPL services for
business payments, merchant
and working capital financing

Indicative illustration

Model 3: B2B2C

This model typically involves a fintech, technology company, or financial institution partnering with another non-financial company to provide embedded financial offerings to end-consumers of the latter. One example of this model would be an insurtech collaborating with a furniture retailer to offer product insurance to the retailer's end customer at the time of purchase.

Financial institutions can also leverage this model to enhance their customer base and innovate their offerings. For example, a bank could partner with a smartphone company to offer a credit card that is integrated into a smartphone app. The users of the app benefit from a frictionless experience and easy access to a credit card and its usual perks, while the bank enjoys greater customer reach. In this context, the bank would remain responsible for card issuance, compliance, and customer service.

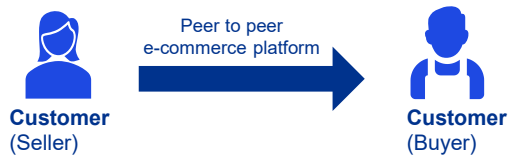
Model 4: B2B2B

A model wherein non-financial businesses offer financial services (e.g., digital payments, cross-border payments, lending solutions, inventory financing, working capital financing, insurance) to other businesses or merchant platforms.

Other use cases under the B2B model could include fintech players providing required technical infrastructure (e.g., enhanced payment platform solutions) to other businesses.



Indicative illustration



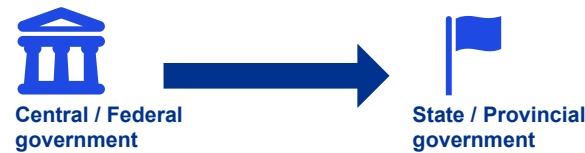
Embedded payment offerings:

- Digital wallets
- Mobile based money transfers

Model 5: C2C

This model involves embedding financial services into C2C marketplaces, such as by embedding flexible payment options into an e-commerce platform being used to facilitate the exchange of goods and services between customers. Other use cases might include online peer-to-peer (P2P) car rental platforms or online platforms for freelancers.

Indicative illustration



Embedded payment offerings:

- Digital payments
- Disbursement of relief package, development funds

Model 6: G2G

This model involves the integration of embedded financial services into transactions between governments or levels of government. For example, such a model could be used between federal and state governments to disburse funds, make tax payments, or facilitate other digital payments/transactions.



EmFi and DeFi

The global fintech space is evolving rapidly, driven in part by ongoing technology innovations and regulatory changes, such as the implementation of the Payment Services Directive 2 (PSD2) regulations in Europe. PSD2 opens the door to the democratisation of financial services by facilitating open banking. By requiring financial institutions to provide third parties with access to financial data via APIs, open banking makes financial services more accessible, regardless of consumers' standard of living, income, or geographic location.

PSD2 enables both embedded finance and decentralised finance. While embedded finance is aimed at the democratisation of financial services, decentralised finance targets the democratisation of both financial instruments and financial services. This means that within decentralised finance regimes, alternative money instruments can be used as a medium of exchange instead of fiat money issued by centralised and traditional financial institutions. Decentralised finance is based on P2P transactions—open to anyone with access to the internet, rather than requiring the use of traditional intermediaries (e.g., brokerages, banks, security exchanges). Blockchain, digital assets (e.g., cryptocurrencies), and smart-contracts are key components of decentralised finance.

Blockchain

In a number of jurisdictions, cryptocurrencies and blockchain-based technologies are being used to provide investment alternatives—such as the trading of digital currencies (i.e., bitcoins and other cryptocurrencies), the purchasing of non-fungible tokens (NFTs) as digital investments, and the issuing of initial coin offerings as an alternative to IPOs. Having been well-established in the investment space, crypto and blockchain-based technologies are now being used to revolutionise the financial sector more broadly by providing alternative money instruments. Real-world applications might include a company accepting cryptocurrencies from customers making a purchase or an online payments company enabling the exchange, transfer, and trade of cryptocurrencies by users.



Digital assets

The use of digital assets might involve a distributor (i.e., a non-financial company) of embedded finance issuing reward tokens to consumers of their products or services. For example, a fitness app may issue tokens based on workouts completed by users during the day, which can then be accessed and spent by smartphone subscribers. Many companies already allow customers to make purchases via reward points, tokens, or coins in offline and online channels. With the integration of decentralised finance and embedded lending, non-financial players could enable BNPL, point-of-sale loans, or EMI payments via tokens. Brands could also replace their current reward points or tokens with digital currencies to better facilitate a seamless financial experience for users.

Decentralised insurance

Apart from investments, payments, and lending, decentralised insurance can also be integrated into the embedded finance ecosystem. The scope of DeFi insurance is not limited to the insurance of blockchain or cryptocurrency-related transactions, but also encompasses the use of blockchain-based technology to

power alternatives to traditional insurance. For example, a Swiss-based decentralised insurance company offers flight delay insurance based on a self-executing smart contract operating on a public blockchain. Based on the customer's flight details, the smart contract is coded to monitor real-time flight data and initiate instant payouts in the case of flight delays or cancellations. Airline companies can embed DeFi insurance offerings into their existing apps and digital ecosystems instead of traditional insurance options to provide a more seamless and accessible experience to users.

Bringing embedded finance and decentralised finance together

In the coming years, as embedded finance and decentralised finance become more prevalent, they will likely play a big role in reshaping access to, and consumption of, financial services. We believe that the business case for amalgamating these two concepts is very strong, given their combined value proposition of enhanced democratisation, improved financial inclusion, and greater transparency.



Sector applications

The success and wide adoption of embedded finance in the retail and e-commerce space is driving companies to consider use cases for other sectors. While the use of embedded finance within different sectors might follow different adoption and

maturity curves, the opportunities associated with the use of embedded finance are vast—making a future where financial services are highly embedded across sectors almost inevitable.

Embedded finance opportunities across the financial value chain

	Payments	Digital wallets	Lending	Insurance	Cross border payments	Personal Finance	Credit scoring
▶ Retail/ E-commerce and consumer packaged goods							
▶ Logistics							
▶ Telecommunications							
▶ Manufacturing							
▶ Consumer Health							
▶ Education and Ed-tech							



► Retail and E-commerce

The pandemic-driven acceleration of digitalisation and omni-channel interactions have created a positive environment for the integration of financial services in the retail and e-commerce sector. Digital wallets, single-click payments, BNPL, point-of-sale lending via EMLs, insurance at the point-of-sale, reward points and loyalty programs are now somewhat commonplace. One could not have imagined purchasing apparel online using instalments just a few years back, but it is now a standard option when making a purchase on many e-commerce sites.

Embedding financial services is allowing retailers and ecommerce players to engage with their customers more effectively, paving the way for increased sales and enhanced customer loyalty. While the rate of adoption of embedded finance offerings varies within the retail and ecommerce space, it is not limited to larger players. Small businesses are also experimenting with this trend. For example, some traditional shops are offering embedded finance options in their physical stores, not only on their digital platforms (e.g., BNPL).

While many of the applications of embedded finance are now well-established in the B2C segment of the retail space, they are increasingly being used in the B2B segment as well (e.g., providing loans and credit lines to partner merchants).



► Logistics

Over the past two years, the logistics sector has experienced accelerated transformation, including the adoption and application of advanced technologies and solutions, such as automation, real time tracking, and integration of relevant financial services. Logistics players are now providing vehicle financing solutions, fuel cards, freight factoring, leasing, invoice discounting, driver and goods insurance, digital wallet services, and other services within their existing ecosystems. These solutions are helping logistics players expand their driver base by ensuring easy access to credit, enabling timely payments, fulfilling working capital demands, and providing a secured experience through insurance and other coverage.



► Consumer health

As a result of the pandemic, the healthcare sector is experiencing a major transformation in terms of healthcare delivery, with much greater use of digital health solutions and easily accessible solutions. Healthcare providers and pharmacies are also increasingly embracing the trend of integrating financial services into their offerings.

Embedded finance provides an opportunity for lenders (i.e., financial entities) and healthcare providers (e.g., hospitals, clinics) to connect and provide flexible and convenient payment options (e.g., credit lines, EMIs, BNPL) to patients. The availability of large volumes of patient data can also be used to generate customer insights that can be used to enhance customer relationship management (CRM) and potentially gain more revenue.

Adoption of embedded finance by pharmacies closely resembles adoption by companies in the retail and ecommerce space, with a growing number of both online and physical pharmacies provide embedded financial services—primarily in the form of enhanced payment options, digital wallets, and BNPL.



► Education

As the world came to a pandemic-led standstill, learning and training experienced a momentary halt, with educational institutions and offices shuttering physical premises. However, the sector adapted quickly, pivoting to online and remote learning. This shift not only provided opportunities for learning to take place 24/7 and globally, but also created an environment conducive to embedded finance as edtech platforms thrived.

Integration of payment capabilities on edtech platforms can help students and content providers alike. For instance, easy and customisable payment plans offer flexibility to students and parents while automation of project-based contract payments or the ability to access earned pay before pay day benefits content providers. Furthermore, such an integration can provide financial institutions and lenders with more insights and in-depth analysis related to a student's capacity to repay loans, allowing them to extend better credit on a quicker basis.



► Manufacturing

Although adoption of embedded finance in the manufacturing sector appears to be at a relatively nascent stage, market players have nonetheless started to offer insurance, loans, credit lines, and flexible payments as bundled offerings with their core products.

For instance, vehicle manufactures are increasingly offering embedded insurance to drivers, thereby providing a complete package and eliminating the need for customers to go beyond the manufacturer's direct ecosystem. In line with their focus on increasing their digital footprint, manufacturers of other products have also been offering embedded payment solutions on their platforms, allowing them to strengthen their user base and explore online distribution channels.



► Telecommunications

Amid intense competition and declining revenues from traditional voice calls, telecommunication (telecom) companies have been increasingly expanding and diversifying their service portfolios to include unconventional revenue streams, including embedded financial services. While many telecoms have been reluctant historically to open their infrastructure to third party service providers, they are now turning their attention to finding collaborations that can enable them to take advantage of new opportunities and enhance their profits.

In a financial institution and telecom partnership, the former provides the payment infrastructure and lending facilities, while the latter provides access to information, innovative communications technologies, and a pool of existing and loyal consumers. As a result, telecom operators are increasingly offering financial services such as digital banking (e.g., P2P transfers) and wallets, BNPL, and other payment, credit or options (e.g., EMIs, credit lines).



Venture Capital (VC) EmFi investments

Unsurprisingly, the accelerating adoption of embedded finance is driving significant investment into the space.

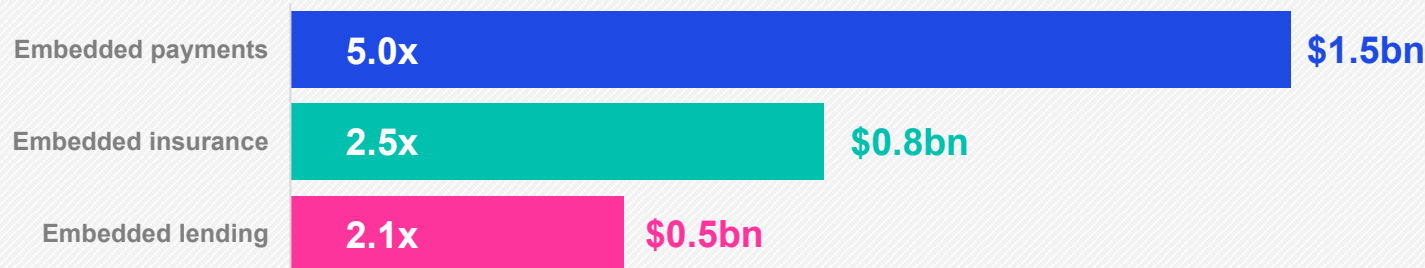
Investors are particularly interested in embedded finance providers with a well-defined business strategy, infrastructure capable of transitioning into a fully digital financial ecosystem, strong financials, and an eye for product design. The strong funding and investor interest is helping embedded finance startups fuel global expansion, product and technology innovations, and organic and inorganic growth initiatives.

As a result of heightened investor interest, there was a funding inflow of US\$3.1 billion⁵ into embedded finance companies in 2021, tripling vis-à-vis 2020. While embedded payments led the charge for investments—a fivefold increase in 2021 relative to

2020—embedded insurance also saw a substantial hike, with a 2.5x growth in funding to US\$0.8 billion over the same period.⁵ Insurtech investors are increasingly interested in data-driven companies focused on enabling activities, and infrastructure companies working to help sector participants improve efficiencies or extend their value across the value chain.

The investment momentum is expected to continue for the remainder of 2022 and well into 2023, particularly for embedded payments and insurance solutions in the B2B space. Embedded lending, however, could potentially face a downturn after growing twofold in 2021, as investors exercise a “wait-and-see” approach to investments, particularly for BNPL, given the heightened risks associated with recent economic disruptions and surging inflation and interest rates.

VC funding growth, USD bn, 2021 vs 2020



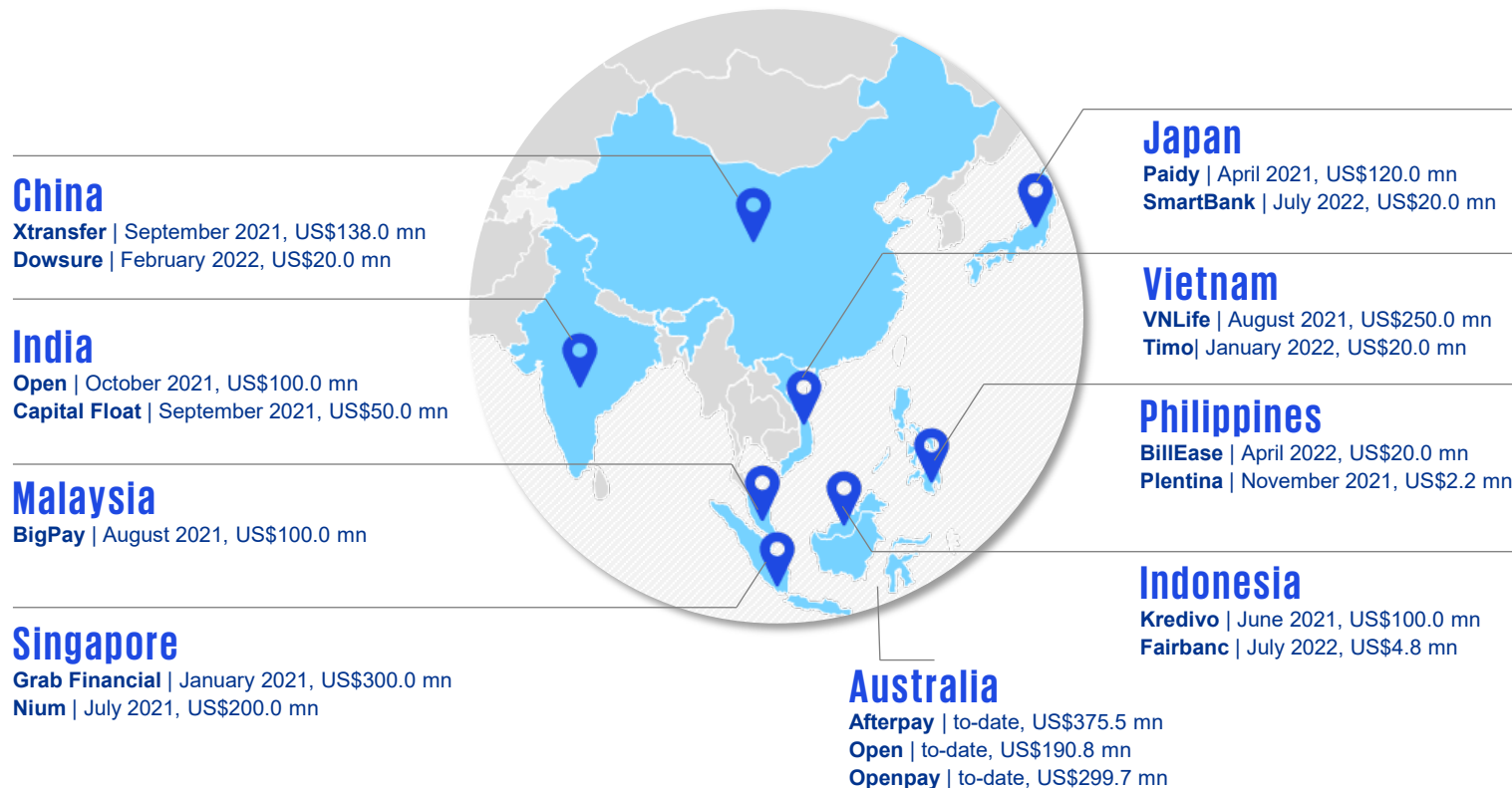
5. <http://www.dealroom.co/uploaded/2022/03/Dealroom-embedded-finance-v2-.pdf>



EmFi in Asia Pacific

► Brief snapshot of funds raised in the Asia Pacific embedded finance space

This graphic provides a high-level view of companies that have received funding related to embedded finance activities. This is not an exhaustive representation and has been built based on secondary disclosure information. Deals are categorised based on the headquarters of the companies.





► Asian Market: In focus

While the European and North American markets are more developed when it comes to embedded payments and lending, the Asian market is catching up quite rapidly, with notable superapps in the region increasingly embedding financial services into their ecosystems especially in Australia with players like Afterpay, Humm and Openpay.

While the pandemic accelerated the digital transformation of businesses and financial services in the region, Asia has long exhibited strong digital and ecommerce fundamentals, translating to a strong business case for embedded finance. Factors such as surging ecommerce sales, high rates of smartphone and internet penetration, a significant unbanked and underbanked population, and a generally tech-savvy population are expected to help facilitate the adoption and success of embedded finance solutions over the next few years.

South East Asia alone is home to 430 million unbanked individuals, of whom 240 million have access to a mobile phone.⁶ With the basic requirement of a mobile phone with internet connectivity in place, embedded finance can help address the long-standing issue of a lack of financial inclusion in the region by providing easy access to financial activities like

digital payments, insurance, and maintenance of savings in a digital wallet.

Regulators in the ASEAN region have also shown interest and support—in part through the provision of banking licenses to telecoms, technology, and ecommerce players, especially in Malaysia, Singapore, Indonesian and Vietnam. Regulatory changes in the region are expected to further facilitate integration of financial services with traditional offerings.

While the market for embedded payment solutions is strongest in Asia, embedded lending offerings like BNPL are gaining traction given the low penetration of credit cards in the region. Embedded insurance is also beginning to gain momentum. Developments in embedded finance in the region primarily focus on the B2C and B2B spaces. In addition to expanding product offerings for end-consumers, digital platforms and fintech are widening their scope to include B2B solutions, such as merchant financing, digital payments for SMEs, and BNPL solutions for retail channels.

The following sections illustrate the market dynamics in the region, including market trends and recent developments, the regulatory landscape, funding, investment initiatives, and an industry overview.

6. The Global Findex Database 2021



Market trends and key developments

The embedded finance space in Asia is very active, with robust measures in place to propel its growth and expansion. The region enjoys active government support for enhancing financial service offerings through non-financial players, product innovation, geographic expansion by market players, and strategic partnerships and collaboration. Despite recent macroeconomic challenges globally, the space is attracting thriving investment activity.




This section covers key trends and recent developments in the embedded finance space across the retail, e-commerce, telecom, consumer health, and technology sectors.

Digital banking and payment licenses

In a bid to promote financial inclusion, a number of Asian

countries have exhibited openness to digital banking. This is reflected in their issuance of multiple digital banking and payments licenses over the past few years. Several governments and regulatory authorities have also relaxed norms to enable the entry of non-financial entities into the financial services space. Given the support shown by governments, a number of international entities have shown increasing interest in making an entry into Asia or further penetrating the Asian market.

Within Asia, Singapore is seen as particularly attractive for companies interested in digital banking and embedded finance. The Monetary Authority of Singapore (MAS) issued four digital bank licenses in 2020, which resulted in the launch of several digital banks by the license holders—including telecom, technology and ecommerce players—in 2022.

Date	Sector	Development (brief)
Jul 2022	 Technology	Sleek, a Singapore-based platform provider for incorporation and accounting services, obtained a Major Payment Institution License (MPI) to offer cross border transfers and e-money issuance to SMEs.
Jan 2022	 Technology	Airwallex, an Australian fintech, received an MPI license in November 2021. It has since launched its global payment services in Singapore, including global account issuance, domestic and cross-border money transfer, multi-currency wallets, and online payments acceptance.
Dec 2021	 Telecom	State Bank of Vietnam granted mobile money licenses to three telecom operators (i.e., VNPT, Mobifone and Viettel), to run a pilot program for mobile money services.






Product innovation and geographic expansion






Companies across sectors, including retail, e-commerce, telecom, and consumer health, are increasingly taking steps to expand their product portfolios, innovate their financial services offerings, or expand and strengthen their geographical presence.

Cross-sector partnerships, collaboration, and merger and acquisition (M&A) activities continue to be prominent in Asia's embedded finance space. The purpose of these deals and activities are varied, from expansion of payment offerings and the introduction of BNPL to new ventures into insurance or wealth management.

Key developments (indicative)

Date	Sector	Development (brief)
May 2022	 Telecom	Telkomsel, an Indonesian wireless network operator, and Kredivo, an Indonesian digital credit platform, partnered to launch BNPL Telco service 'Telkomsel Paylater'.
May 2022	 Telecom	Viettel Telecom, a Vietnam-based telecommunications operator, in partnership with Bolttech, a Singapore-based insurtech, launched insurance exchange platform services focused on health, travel, home, car, and motorbike insurance on its customer app 'MyViettel'
May 2022	 Telecom, Retail, E-commerce / Platforms & CPG	Matchmove, a Singapore-based embedded finance API provider, acquired Singaporean ecommerce platform Shopmatic for US\$200 million, in order too integrate BaaS in Shopmatic's ecosystem of over a million ecommerce SME customers.






Date	Sector	Development (brief)
Mar 2022	 Telecom	Airtel, an Indian telecom operator, and Indian-headquartered Axis Bank collaborated to launch co-branded credit cards, with further plans to introduce pre-approved instant loans and BNPL offerings to penetrate tier 2 and tier 3 markets in India.
Feb 2022	 Consumer Health	Fibe (formerly EarlySalary), an Indian consumer lending platform, launched BNPL services for emergency and operative medical care treatment, elective and planned treatment, and cosmetic and aspirational treatments.
Dec 2021	 Retail, E-commerce / Platforms & CPG	Latitude, an Australian digital consumer finance provider, announced a strategic partnership with Harvey Norman, an Australia headquartered retail chain, to launch BNPL services online and across 12 Harvey Norman stores in Singapore and Malaysia.
Jul 2021	 Technology, Retail, E-commerce / Platforms & CPG	Grab partnered with Adyen, a Netherlands-based payments platform provider, to expand BNPL options for more merchants in Singapore and Malaysia, enabling further penetration in the Southeast Asian market.
Apr 2021	 Technology, Consumer Health	Credify, a Singapore-based embedded finance platform, signed a memorandum of understanding with Med247, a Vietnam-based healthcare startup, to provide Med247 users access to credit, insurance, and banking services via Credify's platform.



Investments/Funding initiatives

Investors in Asia have been paying close attention to players operating in the embedded finance market, recognising the concept's high growth potential in the region.

Key developments (indicative)

Date	Sector	Development (brief)
Sep 2022	 Retail, E-commerce / Platforms & CPG	Be Group, a Vietnam based ride-hailing platform, received a loan facility of US\$60 million from Deutsche Bank (with an option to borrow an additional US\$40 million) to expand its service portfolio, including ride-hailing, food delivery, and digital banking.
Jul 2021	 Technology	Nium, a Singapore-based B2B payments platform, raised US\$200 million in Series D funding round, led by Riverwood Capital.
Jan 2021	 Retail, E-commerce / Platforms & CPG	Grab Financial Group, raised US\$300 million in Series A funding from an investor group led by South Korea-based Hanwha Asset Management, for the expansion of their financial services business (which includes insurance, lending, wealth management and payments).



► The Singapore market: In focus




Singapore is seen as a global hotspot for fintech startups, with several international players incorporating their businesses in the country to capitalise on its strategic location, strong ecosystem, and growth potential. Interest in Singapore has accelerated in recent years, driven in part by the country's supportive regulatory environment.

In the embedded insurance space, the emergence of new insurtech firms is expected to fuel innovations—such as the use






of AI/ML—and heighten competition. Over the last twelve months, there has also been an increase in both partnerships between insurtech firms and e-commerce platforms and in M&A activity.

Innovations and technology advancements are expected to help drive interest in the embedded lending space. Given the Singapore government's support of the fintech ecosystem, and innovation in the financial sector in general, the country will likely continue to see rapid introduction of new products and evolutions in payment platforms and embedded finance offerings.

Key developments (indicative)

Date	Theme	Development (brief)
Apr 2022	 Product innovation/expansion	Nium announced the acquisition of Socash, a Singaporean alternative payments network platform, aimed at expansion of its payment acceptance offerings for digital commerce, especially in emerging markets.
Feb 2022	 Product innovation/expansion	Bolttech acquired AVA Insurance Brokers and AVA Insurance Agency, a Singapore-based insurance intermediary and specialist broker, with the aim to accelerate the deployment of Bolttech's insurance exchange platform in Singapore.
Sep 2021	 Product innovation/expansion	RootAnt Global, a Singapore-based fintech, introduced the central lending platform, BANCER, into its BANCO platform—which is Asia's first neobank transaction platform.



Date	Theme	Development (brief)
Jul 2022	 Geographic expansion	Nium announced the acquisition of Wirecard Forex India, a provider of foreign currency exchange, pre-paid cards, and remittance services, to expand its payment services across India.
Jul 2021	 Geographic expansion	Bolttech acquired Berlin-based i-surance, a B2B2C digital insurance platform, allowing Bolttech to expand in Europe.
May 2021	 Product innovation/ expansion	StashAway has launched StashAway Term Life, a group term life insurance policy underwritten by Prudential Singapore. With this new product brings StashAway is one step closer to becoming an all-in-one wealth management platform.
Jun 2021	 Investment/ Funding	MatchMove received a US\$100 million investment from a US information technology company Nityo, aimed at enabling other organizations to embed their own-branded digital financial services into their ecosystems.
May 2021	 Product innovation/ expansion	Bolttech entered into a strategic alliance with Tiki, an e-commerce platform in Vietnam, to make Bolttech's device protection plans available on Tiki's platform



► Developments from non-corporates

Given the growing importance of the digital economy and the desire to improve financial inclusion, a number of non-corporates, such as universities and non-profit organisations, have undertaken initiatives focused on fintech development, promotion, and training and education.

- **April 2022: Ecosystm**, a Swiss disruptive technology research and advisory company, and **Elevandi**, a non-profit entity set up by MAS, signed a partnership to jointly organize the '**Point Zero Forum**' in Zurich in June 2022. Key points of discussion included advances in finance (i.e., how it is embedded, decentralised, open, and sustainable), in addition to the implications for policymakers, and opportunities for fintech.

- **March 2022: ADGM Academy**, an institute in the UAE, signed a partnership with the **Asian Institute of Digital Finance (AIDF) at the National University of Singapore (NUS)**, with an aim to foster collaboration in financial technology and entrepreneurship. The partnership is focused on addressing challenges in the fintech space by researching AI, digital transformation, cyber security, credit, big data analytics, and sustainable finance.
- **September 2021: NUS, MAS, and the National Research Foundation** jointly announced the **formation** of the '**Asian Institute of Digital Finance**' to train future fintech talent, provide thought leadership, and strengthen the links between education, research, and entrepreneurship.



► Efforts and initiatives aimed at elevating the embedded finance/fintech space

Singapore

Singapore has a strong fintech ecosystem, including the presence of multiple investing networks, private equity firms, venture capital firms, startup incubators and accelerator programs that focus on assisting or developing new fintech businesses. In positioning Singapore as a key global financial centre, the Singapore government has also undertaken a number of initiatives, including:

- Setting up of the Financial Sector Development Fund (FSDF). This fund provides grants to firms and individuals in the financial services sector. One of its objectives is the development of infrastructure to support financial services in the country.
- In September 2022, MAS and the International Financial Services Centers Authority (IFSCA, headquartered in India) signed the 'Fintech Cooperation Agreement' to support the experimentation of technology innovation in the fintech sector, strengthen the fintech ecosystem in both countries, and collaborate on emerging fintech issues.

Vietnam

The Ministry of Finance, in collaboration with the State Bank of Vietnam (SBV), announced a 'regulatory sandbox' in 2021 that allows startups and other new fintech businesses to conduct experiments under regulatory supervision. Key fields of interest include P2P lending, payments, credit, and consumer identification.

A five-year project (2021-2025) was also approved in Vietnam to support the development of cashless payments—aimed at providing financial inclusion for all population types and making the cashless system more secure. Such an environment would help create the structural support needed for fintech businesses to flourish.



► Efforts and initiatives aimed at elevating the embedded finance/fintech space (continued)

Malaysia

The Securities Commission of Malaysia has organised an annual fintech event, 'SCxSC', since 2014, with the aims of enhancing awareness of local, regional, and global fintech developments and trends, and bringing together policymakers, innovators, investors, and financial services providers to explore new ideas in the evolving capital market.

In April the Malaysian central bank awarded digital banking licenses to groups led by ride hailing and food delivery giant Grab Holdings, Shopee owner Sea Group and Malaysian mobile carrier Axiata's fintech unit Boost Holdings, as the Southeast Asia nation seeks to embrace online financial services amid an e-commerce boom.

Philippines

The central bank of the Philippines, Bangko Sentral ng Pilipinas (BSP), has identified various steps in its Digital Payment Transformation Roadmap 2020 - 2023 aimed at promoting the digital payment ecosystem and financial inclusion. This is likely to act as a catalyst for building an inclusive digital financial ecosystem in the country, potentially benefitting fintech and embedded finance players.



► Regulatory overview of Southeast Asia

The regulatory landscape for embedded finance in Southeast Asia is still in a relatively nascent stage. Several countries, including Singapore, Malaysia, and Indonesia have taken initial steps to establish a regulatory framework for related activities. Given the increasing focus on encouraging the digital economy, enhancing financial inclusion, and safeguarding consumer interests, policymaking could become more prevalent and stringent across countries.

► Indicative regulations that are likely to affect embedded finance (directly or indirectly)

Singapore

- All BNPL providers are expected to ensure a minimum user age of 18 years old.
- To safeguard consumer interests, the Singapore Fintech Association (SFA) formed a 'BNPL Working Group' in March 2022 to create and establish a BNPL framework and develop a code of conduct for all BNPL providers. The BNPL code of conduct was announced in October 2022 and will take effect from 1 November 2022.

- MAS is closely monitoring the BNPL sector's borrowings amid rising concerns over consumer debt risk.
- In December 2020, MAS issued digital banking licenses to four non-banking entities to expand the scope of financial services in the country.

Malaysia

- The Central Bank of Malaysia, Bank Negara Malaysia (BNM), has been awarding digital banking licenses aimed at enhancing financial inclusion, strengthening the banking sector, and driving fintech innovation.
- In January 2022, BNM announced plans to create a regulatory framework for digital insurers; this is expected to cover secular and Islamic takaful insurance firms.
- In March 2020, BNM introduced an updated exposure draft on the 'Licensing Framework' for digital banks, which included a simplified regulatory framework for digital banks aimed at reducing the regulatory burden for new entrants.
- In the consumer lending space, BNM is likely to enact the Consumer Credit Act in 2022 to tighten the regulatory requirements for all consumer credit activities, including 'Buy Now Pay Later'.



Thailand

- ▶ Non-banking entities carrying out peer-to-peer lending are required to participate in the Bank of Thailand's regulatory sandbox prior to applying for a license from the Ministry of Finance. The regulatory sandbox has been set up to test services and ensure proper risk management and consumer protection.
- ▶ As per the new policy guidelines for the banking sector, Bank of Thailand is likely to announce policy guidelines on virtual banks and open banking at planned public hearings in early 2023.

Indonesia

- ▶ Otoritas Jasa Keuangan (OJK) and Bank Indonesia (BI)—the financial services authority and central bank of the Republic of Indonesia respectively—act as the two primary regulators in the country. They have implemented a regulatory sandbox to test fintech products, services, technologies, and business models aimed at enhancing the digital economy within the country.

- ▶ BI has issued several regulations to reform the legal framework for digital payment systems in the country—which includes the involvement of non-banking players.
- ▶ In March 2021, Indonesia's digital banking sector received a boost from new rules allowing (almost) full foreign ownership of local banking service providers. This move reduces red tape for new services and spurs growth in the country's emerging digital banking industry.
- ▶ In June 2021, BI announced regulations to reform the payment system. These regulations included the need for non-bank payment services players be at least 15% Indonesian owned, with at least 51% of shares with voting rights held by Indonesians, individuals or entities.



Philippines

- In January 2022, the central bank of the Philippines introduced a three-year strategy to boost open finance, allowing fintech companies to develop new offerings for its customers aimed at improving economic resilience and financial inclusion.
- Regulations in the space of consumer lending, including BNPL, appear to be fairly placed, with the Securities and Exchange Commission (SEC) proactively going after unscrupulous players to maintain consumer protection.

Vietnam

- The Vietnamese government and banking sector participants have been encouraging the digitalisation of the financial system in the country, including online banking and the use of biometric authorisation.
- In April 2022, the SBV released the second draft of a decree related to the implementation of a regulatory sandbox for fintech operations in banking—aimed at fostering innovation, creativity, and the modernisation of the sector.

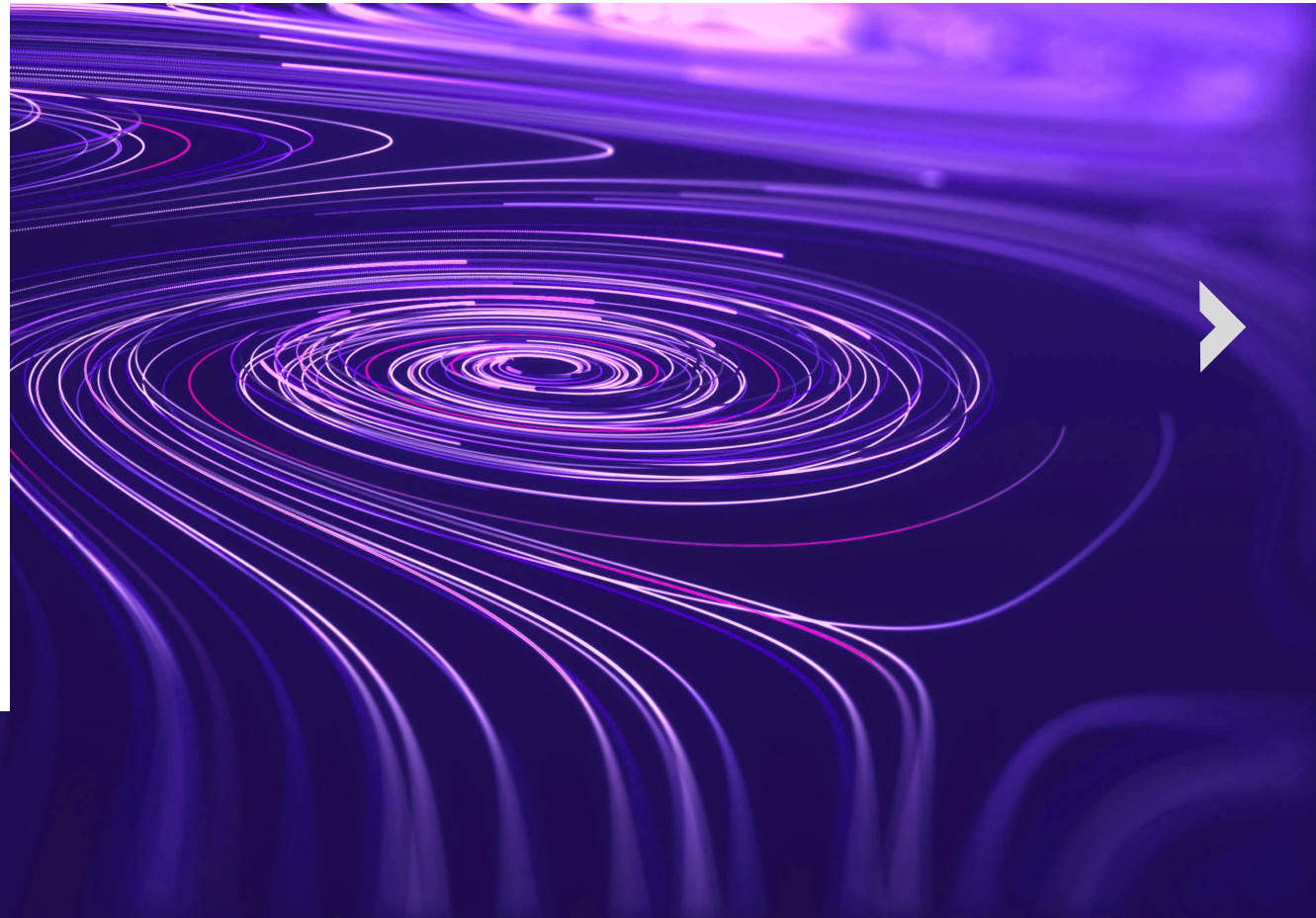


Conclusion

Our research on embedded finance brings us to believe that EmFi will increasingly feature as an important driver of online transactions and support customer engagement and speed of transacting.

We expect the embedded finance industry to grow through continued innovation of technology and data while increasing financial inclusion and broadening product offerings. It will also encourage openness to information sharing as KYC processes and customer information and identity sharing becomes more accepted.

As we have demonstrated in this report, there is an abundance of future EmFi opportunities within Asia Pacific and this is in line with the significant forecasted growth in the market. Banks and other players within the payments ecosystem need to pause and carefully assess how they shall pivot to position themselves while adapting their best practice drivers and value chains to manage these trends, maintain relevance and benefit from the forthcoming growth.





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