



December 2021

Realizing the Embedded Payments Opportunity

OPTIMIZING PAYMENT
EXPERIENCES FOR EXTERNAL AND
INTERNAL CUSTOMERS



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Optimizing payment experiences for external and internal customers

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Executive Summary

Enterprises are increasingly looking to seamlessly integrate financial services into their customer journeys, a trend known as embedded finance. This trend allows companies to take control of the end-to-end customer journey and generate new revenue by partnering with financial institutions. This white paper highlights the global trend to embedded finance and focuses specifically on payments as the most promising opportunity in this space. The study is based on Aite-Novarica Group's extensive expertise and research base in finance and payments.

Key takeaways from the study include the following:

- The growth of embedded finance is strongly accelerated by the digital transformation of financial services through APIs, leading to open finance. While the integration of financial services into corporate systems used to be a complex undertaking requiring a bespoke implementation project, APIs have made such integrations much easier. API integrations often require the inclusion of only a few lines of code in the logic of the enterprise.
- Within the embedded finance opportunity, payment applications represent the lion's share of expected value. The embedded payments case is forecasted to generate over 60% of the total value of embedded finance.
- To enable embedded payments, banks and other FIs have started to provide Payments-as-a-Service (PaaS) to fintech firms and other enterprises. PaaS enables the provision of payment services to nonbanks using an existing licensed financial institution's (FI's) secure and regulated infrastructure. The services are delivered through the FI's API platform or through a third-party platform that the FI has contracted with.
- With continued globalization, businesses have a greater choice of who to do business with, who suppliers are, how services are provided, and by whom. Faster payment methods, with account-to-account settlement, provide a significantly higher rate of satisfaction, strengthening business relationships. Companies are looking for a provider that can offer easy access to a global managed payment network, removing complexity and allowing the business to embed payments into both their customer (external) and enterprise (internal) journeys.

Introduction

Businesses around the world are increasingly looking to embed financial services into their customer proposition. This trend to embedded finance allows companies to take control of the end-to-end customer journey and generate new revenue by partnering with FIs. In turn, embedded finance creates an alternative distribution channel for FIs to deliver products through fintech and enterprise channels (Banking-as-a-Service).

Payment use cases are the prime example of embedded finance applications, enabling businesses to integrate payments into their offering and control the customer experience from start to finish. Think of Uber and Lyft, which embed payments in their apps, enabling a frictionless customer checkout experience, or Amazon, which provides monthly installment plans (buy now, pay later) to increase conversion.

This white paper, written by Aite-Novarica Group and sponsored by Nium, describes the business needs for embedded payments in the context of global commerce. It outlines the challenges that companies face in managing global payments and explores how companies can effectively partner with FIs through a platform (using Nium as an example) that provides the technological connective tissue to simplify service delivery through a superior developer experience and enhance customer experience.

Methodology

This study was completed using Aite-Novarica Group's market intelligence and extensive research library, as well as publicly available reports from reliable sources. The study also incorporates intelligence from interviews and briefings with executives of Nium (the sponsor of this paper).

The route to embedded payments

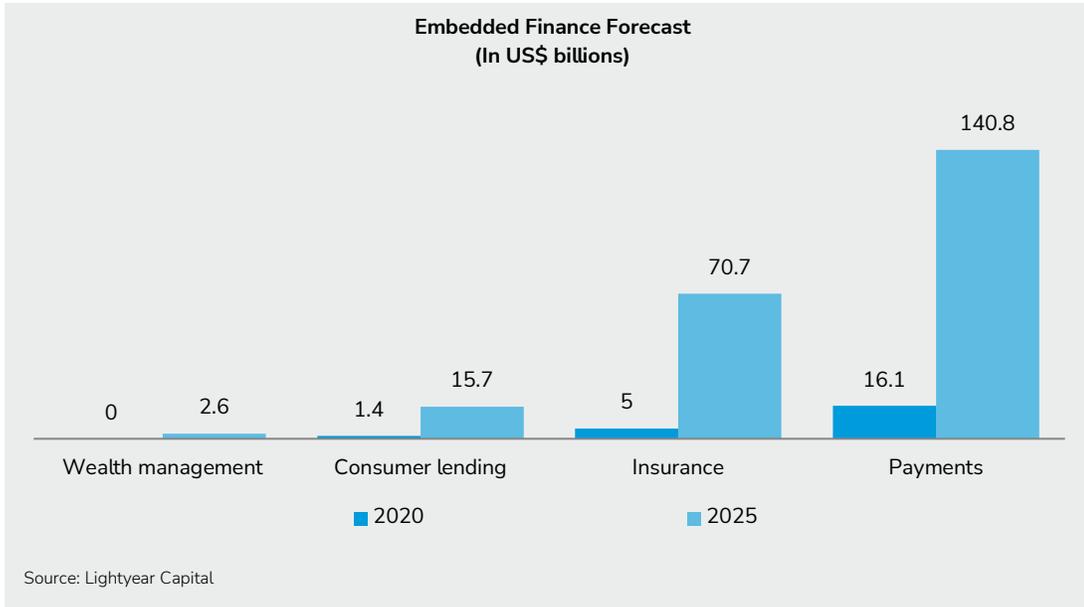
Businesses (fintech firms, corporations) seek to embed payment services into their native customer engagement platforms or white-label entire services. This way, companies do not have to hand over the customer relationship to a payment service provider and can maintain a consistent experience throughout the complete customer journey. The sales process becomes seamless for the customer when payment services are fully integrated into the buying journey, as opposed to redirecting customers to a bank channel or switching between different user interfaces.

Partnerships between FIs and businesses are facilitated by the use of APIs. While integrating financial services into corporate systems used to be a complex undertaking requiring a bespoke implementation project, APIs have made such integrations much easier. API integrations often require the inclusion of only a few lines of code in the logic of the enterprise.

The case for embedded payments

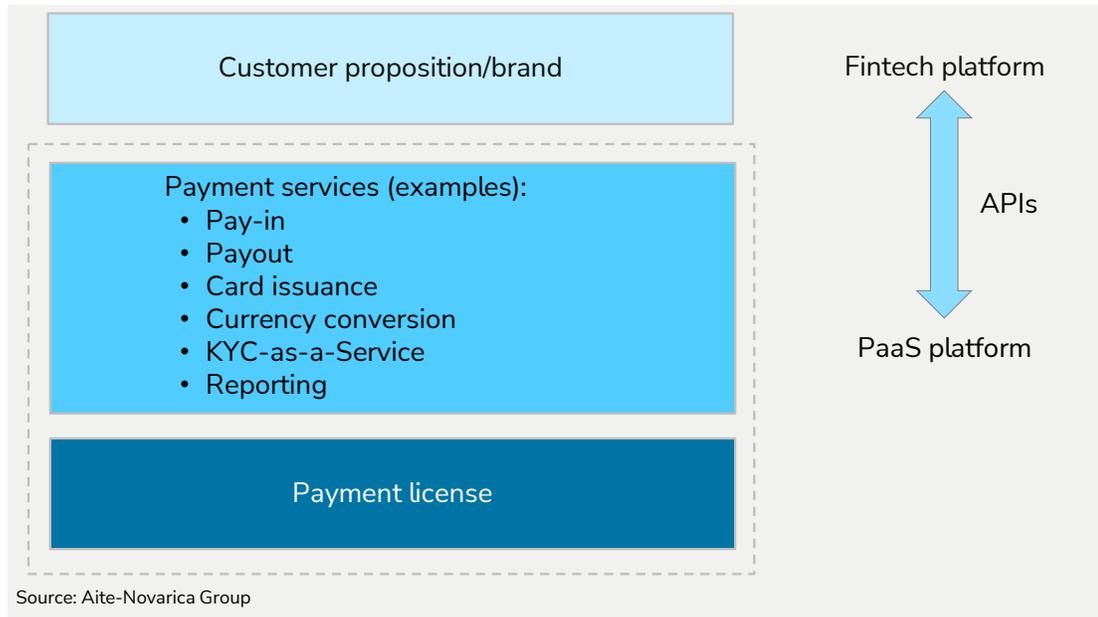
Payment applications represent the lion's share of the expected value within the embedded finance opportunity. The embedded payments case is forecasted to generate over 60% of the total value attributable to embedded finance, growing from US\$16 billion in revenue in 2020 to US\$141 billion by 2025—a compound annual growth rate (CAGR) of 54% (Figure 1).

FIGURE 1: PAYMENTS ARE THE BIGGEST DRIVER FOR EMBEDDED FINANCE



Banks and other FIs have started to provide PaaS to fintech firms and other enterprises to enable embedded payments. PaaS facilitates the provision of payment services to nonbanks using an existing licensed FI’s secure and regulated infrastructure (Figure 2). The services are delivered through the FI’s API platform or through a third-party platform that the FI has contracted with.

FIGURE 2: SCHEMATIC OVERVIEW OF PAAS



Examples of banks providing PaaS are Goldman Sachs (partnering with Apple for its credit card product) and Bancorp Bank (partnering with Chime for debit card issuance). As more and more fintech firms seek partners to provide payment services, banks and other FIs have a significant opportunity to offer a PaaS solution and develop new relationships with enterprises, creating new revenue streams.

Embedded payment use cases

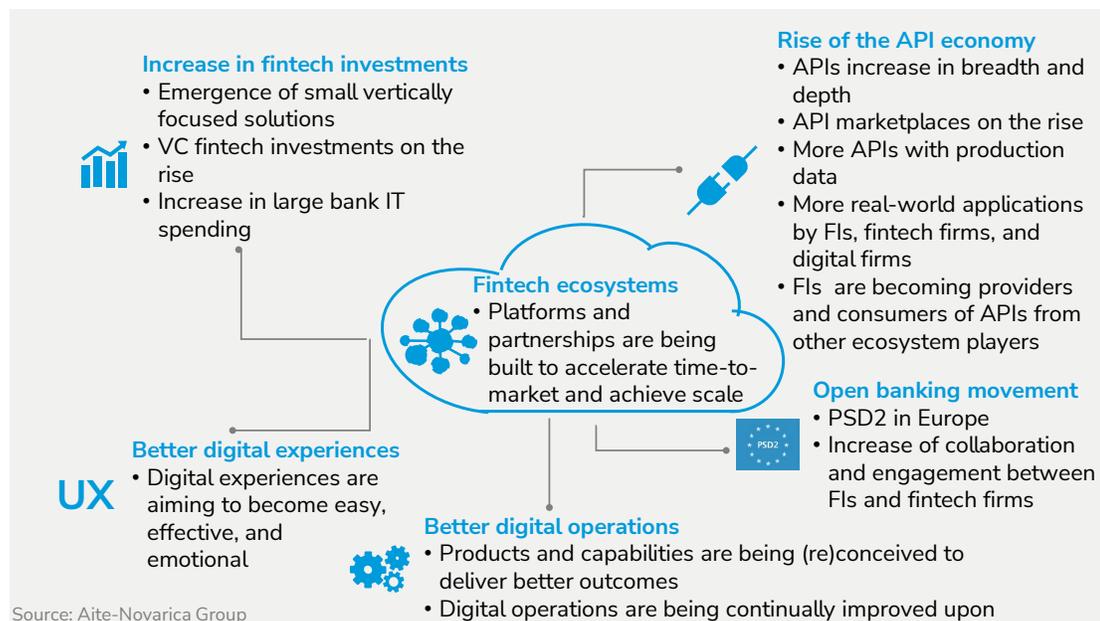
There are numerous use cases for embedded payments in today's digital economy. Examples are embedded payments applications for powering fintech development, global commerce, and business-to-business (B2B) supply chains.

Embedded Payments Are the Lifeline for Fintech Firms

The digital transformation has created a new paradigm for how consumers and businesses expect to interact with their financial institutions. Customers have become used to accessing their financial information in real time, 24/7, through any device or channel. Many banks, large and small, struggle to offer the experience that customers expect, presenting an opportunity for new entrants to occupy the digital banking space. Fintech firms have been successful in delivering superior digital customer experiences and can acquire large customer bases and attract attention from investors around the world.

In 2020, the global investment in fintech firms was US\$33.9 billion. In the U.S. alone, there are more than 10,000 fintech firms of one type or another. More than two-thirds of financial services executives believe fintech will impact their business, especially in the digital wallet and payments sector.¹ Fintech ecosystems are developing as fintech companies seek partnerships and build platforms to scale more quickly and accelerate time to market (Figure 3).

FIGURE 3: DEVELOPMENT OF FINTECH ECOSYSTEMS



For example, Plaid developed an ecosystem that incorporates over 50 partner companies across North America and Europe, including payment and tech providers and Banking-as-a-Service (BaaS) platforms, serving a spectrum of verticals from e-commerce to gaming. The goal is to create connected payments experiences for fintech companies using Plaid and its partners.

Embedded payments are at the core of many fintech offerings, but they need access to a regulatory license to provide payment services and operate. In the U.S., some fintech firms—including Square, SoFi, and Varo Money—have applied for a national bank charter. However, the majority of fintech firms do not have the means to apply for a banking charter, so they seek a partnership with existing banks. They operate under the

1. See Aite-Novarica Group's report [Neobanks: The Bumpy Road to Profitability](#), December 2020.

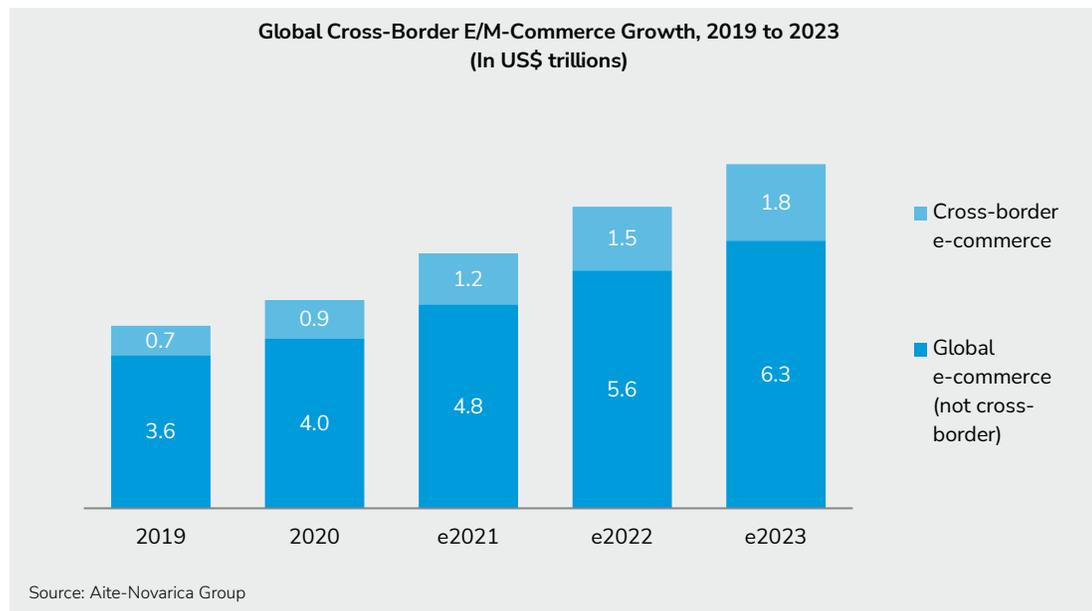
incumbent bank’s banking license to get access to banking services so they can reduce time to market and scale more quickly.

If fintech firms operate globally, they will need a license in each market they operate in—either a banking license or some other regulatory license, such as the payment institution license in Europe. These firms will be looking for a FI partner that can provide easy access to disbursements (payout) and collections (pay-in) globally.

Cross-Border Commerce Requires Global Payment Access

Commerce is globalizing rapidly. With access to commerce sites all over the world, global delivery systems, and the ability to pay through the payment networks, cross-border business-to-consumer (B2C) e-commerce and m-commerce grew to nearly US\$1 trillion annually by 2020, with a CAGR of nearly 27% over the past five years. Cross-border B2C e-commerce is expected to grow to US\$1.8 trillion by the end of 2023 (Figure 4).

FIGURE 4: GROWING IMPORTANCE OF CROSS-BORDER E-COMMERCE



According to a study by Visa, 87% of global merchants see cross-border sales as critical to their long-term success.² When dealing with international customers, merchants should match the service level and checkout experience that consumers expect from domestic providers. According to respondents in Visa's survey, the most important success factors for selling cross-border were quick delivery (44%), easy checkout (41%), and convenient payment methods (41%). This means that merchants need to offer local payment methods for each buyer, enabling the customer to pay in local currency using the payment methods they are comfortable with.

Online marketplaces drive an increasing share of global payment volume. According to EY-Parthenon, 44% of global e-commerce volume is already passing through these marketplaces, which offer payment services directly to the large communities of merchants aggregated on their platforms, disintermediating traditional acquirers from direct merchant relationships.

As a result, multinational merchants and marketplaces are looking for partners to offer payment capabilities in multiple countries as an embedded experience for their customers.

Embedded Payments for B2B

Embedded payments can also be used to enhance the experience for business customers, e.g., on B2B marketplaces. However, the major application of embedded payments is the seamless integration of payments into corporate payables and receivables processes. Here, embedded payments improve the experience of the internal customer, i.e., the corporate finance department. Some examples include the following:

- Marketplaces and other two-sided businesses can pay out to sellers globally in different currencies.
- Merchants that sell cross-border and expand to multiple local markets must reckon with an expansion of their international B2B supply chain involving suppliers and downstream partners. This means that the complexity of managing mass collections and disbursements increases. Embedded payments can help reduce costs and

² "New Visa Study Shows Cross-Border eCommerce Sales Poised for Explosive Growth," Visa, October 29, 2019, accessed October 21, 2021, <https://usa.visa.com/about-visa/newsroom/press-releases.releaseId.16661.html>.

payment delays, optimize foreign exchange (FX), increase automation of back-office processes, and improve reconciliation.

- One other application is the use of embedded payments to streamline a company's international billing processes with its business customers. This enables international customers to be invoiced in their local currency while allowing the biller to reconcile collections in its account receivables system, simplifying a typically complex, costly, and slow process for both parties.

Managing global embedded payments

Embedded payments allow the enterprise to control the end-user experience under a single brand, making the actual payment provider “invisible” to the customer. It also enables the company to streamline its internal processes for B2B disbursements and collections. However, building the capability in-house requires significant work, technical expertise, and a firm grasp of all of the costs that can arise. This complexity multiplies for multinational companies that have to manage payment processes across borders. These firms face many challenges in managing cross-border payments, having to deal with local regulations, different currencies, different payment methods, and different service levels (e.g., uncertainty when the funds will arrive, and at which cost). There is pressure on the payments ecosystem to find ways to simplify and remove the friction in the cross-border space (Table A).

TABLE A: MARKET TRENDS IN CROSS-BORDER PAYMENTS

Market Trends	Market Implications
Friction in the cross-border correspondent banking model is causing issues for businesses that make these types of payments.	Businesses are seeking alternatives to the correspondent banking model that solve some of the biggest pain points.
Many FIs are behind in offering cross-border capabilities outside correspondent banking.	Businesses are seeking solutions from nonbank financial services vendors, disintermediating banks, which impacts revenue from these transactions.
More small and midsize businesses need to make cross-border payments.	The opportunity to increase revenue from cross-border payments is expanding beyond large businesses.
The expectations of real-time settlement for and transparency of domestic payments have created the same expectations for cross-border payments.	Innovations in the cross-border landscape are making cross-border payments faster and more transparent, providing businesses more options in the market than ever before.

Source: Aite-Novarica Group

Businesses that need to make payments across geographical lines are becoming aware of the benefits of faster, more transparent payment capabilities. As globalization has made commerce across borders critical to the health and growth of businesses of all sizes, the ability to facilitate payments for goods and services rendered is a requirement. Aite-Novarica Group research shows that about 30% of U.S. small businesses need to make cross-border payments, and that percentage increases to about 60% when looking across segments of all businesses. In Europe, this number is even higher, with an estimated 50% of small businesses making cross-border payments and about 85% across segments of all businesses. An important part of the strategy for many of these businesses is how to move money across geographies and in multiple currencies.³

Business needs for global payments

Businesses want to remove the friction and pain points of cross-border payments. They want end-to-end control over the payment process with predictable fees, fast and secure settlement, transparency into payment status, and robust data attached to the payment. This is important for controlling and predicting the internal costs of doing business as well as the cash flow cycle. The outdated model of traditional correspondent banking is not good enough. Fortunately, businesses have options that are growing in efficiency and accessibility.

Recipient satisfaction is also increasingly becoming more important to businesses. Payment strategies that not only support the internal goals of the organization but also consider the external satisfaction of payment recipients are being developed. Suppliers, for instance, benefit if the cost of payment is transparent (e.g., no deduction of bank costs from the principal amount), and the full remittance data is included in the payment to facilitate reconciliation. With continued globalization, businesses have a greater choice of who to do business with, who their suppliers are, how services are provided, and by whom. Faster payment methods, with account-to-account settlement, provide a significantly higher rate of satisfaction, strengthening business relationships.

For payment providers, this means that the expectation to enable frictionless payments, even in the cross-border space, is increasingly important. Businesses do not really care what payment network is utilized or the infrastructure in place to make that happen, but

³ See Aite-Novarica Group's report [Frictionless Cross-Border Payments: Alternatives to Correspondent Banking](#), March 2021.

they do want fast, predictable, secure, and efficient payment settlement. Account-to-account technology solutions allow FIs to better meet these businesses' needs.

Payment options: the embarrassment of choice

Depending on the receiving bank, currency, country, and payment value, not all cross-border payments can be serviced the same way. Payments to emerging regions may be better served by a blockchain solution, payments in which debit card information is available may be better served using a card network, and payments between financial institutions with a direct relationship may be most effective using a more traditional banking model. Financial institutions need to be aware of the options and enable solutions that allow them to serve business clients with the flexibility and transparency required for each transaction (Table B).

TABLE B: DIFFERENT TYPES OF PAYMENT NETWORKS AVAILABLE FOR BUSINESSES

Payment network type	Example networks	Description
Correspondent banking	SWIFT	This is a network of FIs in different countries that hold accounts with each other to provide banking services, including payments. Correspondent banking is mainly used for high-value payments (wires) sent by businesses.
Global ACH	Earthport (now Visa), transaction banks	FIs provide a network of clearing connections around the world (either directly through their own branches or through partners), enabling businesses to send low-value disbursements (payout) or collections (pay-in) across borders. Disbursements are increasingly made through real-time payments networks in the different countries rather than via traditional ACH.
Card based	Visa Direct, Mastercard Send	Global card networks provide businesses with the option to pay a beneficiary's card or to issue a virtual card for the recipient to receive money.

Payment network type	Example networks	Description
Distributed ledger	RippleNet	Fintech networks use crypto-payment rails to offer businesses alternative ways to pay.
Money service business	Western Union, Currency Cloud	Nonbank FIs provide money transfer and FX services. They can use their own networks to transfer funds or use existing networks, as described above.

Source: Aite-Novarica Group

For now, the cross-border landscape is dominated by the major banks that make up the membership of the SWIFT messaging consortium. This has been particularly true since the introduction of the SWIFT Global Payments Innovation (gpi) service, which effectively boosted the speed of international payments in line with domestic clearing systems—40% of gpi payments are credited to end beneficiaries in less than five minutes, and almost 50% are credited within 30 minutes. Since its introduction in 2017, SWIFT gpi has grown rapidly. More than 65% of all cross-border payments on SWIFT are now sent via gpi, representing more than US\$300 billion in daily value.⁴ However, there is continued innovation in the space, providing alternatives to SWIFT gpi that compete on cost, geographic coverage, and service level.

The card networks—particularly Mastercard and Visa, both of which have been quick to react to the opportunities and threats presented by the emergence of real-time payments networks—are major players in this space as well. Both Mastercard and Visa have solutions in the market that leverage the card network of debit cards to facilitate cross-border payments. Both companies also have distributed ledger solutions to vastly increase market penetration, particularly where the debit card network is not an applicable option for payment messaging and settlement. Through significant acquisitions of Vocalink and Earthport, Mastercard and Visa have built account-to-account capabilities that remove the constraints of being just a card network. These create even more choice in the cross-border payments market.

⁴ "SWIFT gpi Traffic Soars to \$77 Trillion in 2019," SWIFT, March 2, 2020, accessed October 21, 2021, <https://www.swift.com/news-events/news/swift-gpi-traffic-soars-77-trillion-2019>.

A further set of cross-border services comes from other providers, including money transfer firms such as Western Union, FX networks such as Currency Cloud, and distributed ledger networks such as RippleNet. Completely new entities are also entering the market and are attempting to modernize cross-border payments technologies with quicker settlement, greater transparency, and greater reach into emerging markets and regions. As traditional cross-border services age and fail to meet demands, innovation will continue to fill the gaps and provide businesses with robust choices.

Therefore, businesses are looking for a provider that can offer easy access to a global managed payment network, removing complexity and allowing the business to embed payments into both its customer (external) and enterprise (internal) journeys.

Provider case: How Nium addresses the opportunities and challenges of embedded payments

Nium—a global fintech company founded in 2014 with headquarters in Singapore, London, and San Francisco—provides businesses with access to global payment services via a single integration. Nium’s core product offering includes payouts, pay-ins, card issuance, and Crypto-as-a-Service. Nium also offers a multicurrency account with payout and a virtual/physical card (Figure 5).

FIGURE 5: NIUM'S CORE PRODUCT OFFERING FOR PAYMENTS AND CARD ISSUANCE

	 Payout	 Pay-in	 Card issuance	 Multifeatured offering	 Crypto-as-a-Service
Use case	Cross-border and domestic real-time payments	Multicurrency virtual accounts for localized payment collection	Virtual/physical multicurrency card issuance	Multicurrency account with payout and virtual/physical card	Buy, hold, and sell cryptocurrencies: Bitcoin, ETH, LTC, PAXG (expanding to 22 currencies in late 2022)
Geographies covered	Payout to over 190 countries	35 countries; SEPA, U.K., Hong Kong, Singapore, Australia, India, U.S.	33 countries; SEPA, U.K., Hong Kong, Singapore, Australia	Asia-Pacific, U.K., EU; U.S. planned for late 2021	34 countries planned by end of 2022
Value proposition	Real-time payments in over 40 countries via wholly owned network, strong FX capability	Enabling multicurrency, multigeography collections on virtual IBANs	Licence holder and BIN issuer in over 30 countries, full-stack (issuing, processing, program management)	Flexible testing environment, fully customizable front end and feature integration	Comprehensive crypto-investment services; seamless integration, customer engagement, and compliance with closed-loop crypto

Source: Nium

Core to Nium is its network, which is built from the ground up and is supported by its license infrastructure, building and owning money transfer, electronic money, and card-issuance licenses. Nium’s license portfolio covers 11 jurisdictions, enabling seamless global payments and rapid integration, regardless of geography.

Nium's target market includes five key verticals: financial services, travel/hospitality, fintech, digital platform businesses, and corporate clients.

Nium's Key Value Proposition

Businesses are increasingly embedding financial services within their customer engagement platforms to make their product offerings and brand experiences more compelling. With distributed customers and employees, they are also becoming more global than ever before. As companies scale, they need a modern, unified, compliant, and cost-effective payments network that can seamlessly send and receive money, and issue cards across different countries. To address its customers' needs, Nium's key value proposition consists of four pillars:

- **Ease of integration:** Nium connects its clients to global payments with a single integration.
- **Scale and reach:** Once connected to the Nium platform, businesses have the ability to pay out in more than 190 countries—85 of them in real time. Funds can be received in 33 markets, including Southeast Asia, the U.K., Hong Kong, Singapore, Australia, India, and the U.S. Nium's growing card-issuance business can issue both virtual and physical cards; it is available in 33 countries, including the Single Euro Payment Area (SEPA) zone, the U.K., Australia, Hong Kong, and Singapore.
- **Network ownership:** Nium has developed its own network of banking partners, licenses, and technology enablers, translating to improved customer experiences and better economics.
- **Modular approach:** Nium offers a modular suite of payment services via its platform so that customers can mix and match payout, pay-in, and card-issuance technologies based on their international journey.

Nium also supports its clients with its expertise in regulatory compliance (Know Your Customer [KYC] and anti-money laundering) and fraud monitoring. In addition, the company provides KYC-as-a-Service to its clients.

Summary

Nium's sweet spot is facilitating cross-border money movement for FIs, fintech firms, and enterprises. With the rapidly increasing importance of cross-border commerce, businesses require easy access to global payment capabilities to reduce complexity and improve time to market. Nium's modern, cloud-based, single-API-driven platform

provides this. Clients can create new solutions on top of the Nium platform or white-label Nium's solutions.

Nium's investment in its own real-time payment network is a valuable asset that differentiates the company from the competition. Network ownership means that Nium can better control the client experience than competitors that aggregate partner networks. With real-time payments supported in 85 countries, Nium is an attractive partner for FIs that want to extend their reach in this fast-growing segment.

With its solid funding and long track record in delivering cross-border payment solutions, Nium is well-positioned to monetize the global payments opportunity based on its modern technology stack and network capabilities.

Conclusion

Enterprises:

- Embedded payments provide an innovative way for companies to optimize their payments capabilities to reach new markets, reduce cost, and create customer stickiness.
- When dealing with international customers, merchants should match the service level and checkout experience that consumers expect from domestic providers. This means that merchants need to offer local payment methods for each buyer, enabling the customer to pay in local currency using the payment methods they are comfortable with. Therefore, multinational merchants and marketplaces should be looking for partners to offer payment capabilities in multiple countries as an embedded experience for their customers.
- For B2B payments, enterprises should consider embedded payments to streamline the seamless integration of payments into corporate payables and receivables processes. Here, embedded payments improve the experience of the internal customer, i.e., the finance department.
- Companies looking for embedded payments can leverage Nium's global financial services platform, providing access to payments worldwide through a single API. Nium can deliver a comprehensive solution, including dedicated implementation support; a global network of licenses; payment corridors and banking partnerships; and multicurrency, multichannel, multicountry capabilities.

Banks and FIs:

- Embedded payments create an alternative distribution channel for FIs to deliver payment services through fintech and enterprise channels. As more and more fintech firms seek partners to provide payment services, banks and FIs have a significant opportunity to offer a PaaS solution and develop new relationships with enterprises, creating new revenue streams.
- The expectation to enable frictionless payments, even in the cross-border space, is increasingly important. Businesses do not really care what payment network is utilized or the infrastructure in place to make that happen, but they do want fast,

predictable, secure, and efficient payment settlement. Account-to-account technology solutions allow FIs to better meet these businesses' needs.

- Developing embedded payment solutions in-house can be resource-intensive and time-consuming. Therefore, FIs should look for the right partner to support them in their modernization journey and provide an easy way to go to market and monetize the embedded payment opportunity.

About Aite-Novarica Group

Aite-Novarica Group is an advisory firm providing mission-critical insights on technology, regulations, markets, and operations to hundreds of banks, payments providers, insurers, and securities firms as well as the technology and service providers supporting them. Our core values are independence, objectivity, curiosity, and a desire to help all participants in financial services create better, more effective strategies based on data, well-researched opinions, and proven best practices. Our experts provide actionable advice and prescriptive business guidance to our global client base.

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