



Welcome to the “Finance Anytime, Anywhere” World!

If you want to go fast, go alone; if you want to go far — go together. Is this true? Looking at what is happening with payments recently, it seems like **going together becomes faster!** Banks and fintechs, retailers and BNPL providers, tech giants and digital wallets are partnering to create unique products and services and deliver them to their customers. Remember recent [news](#) about Klarna and Stripe entering a strategic partnership as frenemies?

Embedded finance can potentially bring more revenue to companies who work together and build ecosystems. When everyone focuses on what they do best, they can deliver innovative joint propositions faster and cheaper – a merchant knows how to sell a product, a bank is an expert in processing payments uninterruptedly and providing loans, and an e-commerce platform delivers the most convenient online shopping infrastructure.

Maria Vinogradova, Director of Strategy & Market Intelligence, OpenWay:

“Banks can learn a lot from top brands like Ant Group who have been successfully growing revenues from embedded finance for a long time now. Embedded finance opens up a whole new world of business opportunities for financial institutions, and they can earn more from it than from pure transaction processing. Recently, the concept of embedded finance has been reborn thanks to rapid digitalization and proliferation of developer-friendly APIs. Never before has it been easier to access financial services right when you need them, whether it is an insurance for your trip, financing of your car purchase, or a salary card for an Uber driver. Using Way4, our clients – both tier-1 banks and fintechs – implement personalized payment solutions that raise the customer experience to a new level”.

Celent, a leading industry research and advisory firm focused on technology for financial institutions, recently has conducted research to find out what embedded finance means for banks and processors and how they can find their place in it. OpenWay, a top-ranked digital banking and payments software provider, believes the resulting report is highly relevant for



our partners and aims to make it available to a larger audience. The report contains deep analysis of the embedded finance phenomenon, and also:

- Defines **what embedded finance is** and what it is not
- Features **five leading strategies** that banks can use when exposing their services to third parties, and outlines the risks
- Highlights the **technological aspects of embedded finance**
- Exposes **what prevents companies from embracing new business models** based on embedded finance

What's Your Place in Embedded Finance?

Zil Bareisis, Head of Retail Banking, Celent:

“I’m not saying that the traditional banking model is dead, forget about getting customers through branches and online banking portals, that embedded finance is the answer. But it is happening. The ecosystem is opening up. And if you’re not thinking about what that means for you, if you’re not getting ready, if you’re not getting your technology in order, you will be missing out, and others will come in and be more successful. Of course, FOMO is not a valid strategic driver to invest, but it certainly should drive banks to evaluate their options and determine their strategy.”

Implementing embedded finance requires banks to rethink their role in the digital value chain. **Where will your company bring more value, and whom should you partner with? What are the changes required in terms of operations and technology?** As starting points, here are four ideas inspired by OpenWay clients that realize open ecosystem and embedded finance business models.

Super app ecosystem

Consider creating a super app with its own ecosystem of embedded services like loans and ticket booking. [SmartPay](#) created an ambitious financial inclusion business model for providing digital financial services to SMEs and the unbanked population, revolving around a



simple, user-friendly wallet app. Behind the app is a powerful platform capable of analyzing customer data and integrating with VAS providers via APIs. Now SmartPay connects 1,7 million consumers with 400,000 small and micro-merchants.

Buy Now, Pay Later

Like [LOTTE Finance](#), you can help retailers increase their conversion by embedding a BNPL payment option to their checkout. LOTTE Finance's BNPL offering was created on the OpenWay's platform with the needs of the Vietnamese consumers in mind and allowed this leading South Korean credit card company to launch a successful product in a new market.

Card-as-a-Service / Payment-as-a-Service / Banking-as-a-Service

Become a trusted payment partner for startups, offering them an affordable Banking-, Payments- or Card-as-a-service. [Enfuce](#), a Nordic cloud payments processor, delivers Card-as-a-service to lending and credit fintechs as well as neobanks. Through extensive use of APIs, the company provides open banking services and calculates carbon footprint consumption for each transaction. Together with OpenWay, Enfuce received the PayTech 2019 Award as the "Best Payments Solution for Payment Systems in the Cloud".

Financial services marketplace

No longer does a bank need to develop and maintain every product or services by itself at great expense. Think about selecting best-of-breed partners for separate products and services and integrating them into your branded marketplace via APIs. The largest banks in the regions have already been growing their revenue from non-financial lifestyle services, such as delivery, food tech, taxi, carsharing, music, video, health, ID, cloud, and telco services.



How Can OpenWay Help You with Embedded Finance?

OpenWay Group is a global company and developer of Way4, a digital payment software platform covering every aspect of the payments business — card and account issuing, merchant acquiring, switching, digital wallets, and fleet cards. Way4 software solutions are used both by fintech startups and market leaders such as Worldline in Europe, Network International in the Middle East, Equity Bank in Africa, and LOTTE in Asia. OpenWay holds a #1 global ranking in software solutions for payment processing platforms, evaluated by Aite. It was also awarded as "Best Payment Software Solution Provider in the Cloud" by PayTech.

Banks and processors can leverage Way4 payment solutions by OpenWay **to develop and launch their own embedded finance offering** for fintechs, retailers, startups, EMLs, and neobanks. The Way4 platform is designed for open banking and real-time payments. It is based on an open framework with flexible, separated granular modules available via APIs.

Reach us at OpenWay if you are looking for a payments platform to implement these business models:

- Your own marketplace or ecosystem of financial and lifestyle services
- Payments-as-a-service
- Card-as-a-service
- Banking-as-a-service
- All-in-all digital wallet
- Open payments within the PSD2 framework

Contact OpenWay

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CELENT

DEMYSTIFYING EMBEDDED FINANCE

Promise and Peril for Banks

Zil Bareisis and Stephen Greer

April 19, 2021

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The report was written by Celent and
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EXECUTIVE SUMMARY

Embedded finance is a burgeoning space with the potential to dramatically reshape the way customers engage with financial services. And yet, different things get labeled embedded finance, causing confusion, while much of the industry's discussion focuses on disruptors rather than banks. The purpose of this report is to help financial institutions navigate this new territory. We propose our definition of embedded finance, discuss the technology enablers, provide examples of how banks already engage with embedded finance, and offer guidance for banks wishing to pursue this model.

Celent defines embedded finance as the discovery and acquisition of tailored financial services products at the point of need within the digital experience curated by a non-bank third party.

Embedded finance is one of **four new major models** of how banks can participate in an increasingly open financial services ecosystem. The established banking model is primarily manufacturing and selling products through banks' own channels. These days banks must also consider these questions:

1. Should banks seek to deliver **bank-curated customer experiences** by adding **third party products**—either financial (Financial Platform/ Marketplace models) or non-financial (Beyond Finance)— to what they sell through their own channels to their customers?
2. Should they participate in **third party-curated experiences** by enabling **access to data** (Open Banking) and **offering their products and capabilities** (Embedded Finance) via third parties?

We recognize that enabling third parties to provide financial services is not a new phenomenon, and the last thing we want is to appear too precious about the definitions. And yet, we believe that precision matters. While making FS products available *to use* seamlessly at a third party can lead to fantastic customer experiences (e.g., storing a card on file with Uber or Netflix), the capabilities the bank needs to deliver modern embedded finance are qualitatively different.

Figure 1: Modern Embedded Finance

	Traditional Partnerships/ White-label	Card on File (“Invisible Payments”)	Innovative Digital Channels	Open Banking/ A2A Payment Initiation	Modern Embedded Finance
Digital experience?	✗	✓	✓	✓	✓
Third party curated experience?	✓	✓	✗	✓	✓
Customer acquires a new FS product?	✓	✗	✓	✗	✓
<i>Selected Examples</i>	<ul style="list-style-type: none"> Buying car insurance at the dealership Tesco/ RBS JV 	<ul style="list-style-type: none"> Payment card stored with the merchant (e.g., Uber, Netflix) 	<ul style="list-style-type: none"> Banco Davivienda and PayKey 	<ul style="list-style-type: none"> NatWest Payit Plaid TrueLayer 	<ul style="list-style-type: none"> “Neobanks” (e.g., Chime) Apple Card Stripe Treasury
<i>New bank capabilities required to support</i>					

Source: Celent

Three major components are needed to deliver an embedded finance ecosystem: the customer experience provided by a non-bank brand, which recognizes the need for a financial services product; the technology and capability stack; and the license required to provide regulated financial services and ensure compliance.

While embedded finance is sometimes used interchangeably with **Banking-as-a-Service (BaaS)**, the two are distinct. BaaS describes one of the main approaches to deliver embedded finance. In other words, embedded finance is the “what,” and BaaS is often, although not exclusively, the “how.”

BaaS consists of an **FS technology and capability stack** and the **licenses** required to provide regulated financial services and ensure compliance. The technology and capability stack can be broken down further into distinct **layers**, such as the **API/orchestration layer** that maintains connectivity, the **“as-a-service” layer** that delivers products and capabilities, and the **flexible core/ledger** that maintains accounts.

The players with technology relevant for enabling the embedded finance ecosystem are incredibly diverse. We group them into three major categories.

1. **Full-stack BaaS platforms:** platforms that combine all the layers above to deliver BaaS, either under the same roof or through pre-arranged partnerships.
2. **Cards- and Payments-as-a-Service:** vertically focused platforms that specialize in moving money and providing regulated access to card schemes and payment rails. They may need regulatory support from partner banks.
3. **Bank Software Vendors:** traditional incumbents and next-gen providers focused on selling applications mainly to banks (e.g., core platform, loan origination/ servicing, payments) to enable the granular services required. These are pure technology players; the regulatory license remains with the client bank.

These archetypes are generalizations, and the list is not exhaustive. For example, firms that started with a focus on **open banking** are rapidly developing capabilities and use cases relevant to embedded finance. In other instances, multiple players need to come together to deliver a service. As always, the devil is in the detail.

Celent research identified that **leading banks already engage** with embedded finance in five primary ways:

1—Tech-led	2—License-led	3—License + tech	4—Collaboration (B2B2C)	5—Collaboration (B2B2B2C)
Making it easier to integrate bank standard products into the partners' digital experience.	Using the regulatory license to be a partner or sponsor bank for fintechs and other non-banks.	Combining a banking license with a technology platform to offer a full BaaS package.	Collaborating with third parties to help co-create tailored products for their direct customers.	Collaborating with technology firms to support <i>their</i> BaaS propositions to <i>their B2B</i> clients.

As the market begins to move, financial institutions need to consider what embedded finance means to them, why they might want to participate (or not), and if so, how. Celent's research indicates that banks typically engage with embedded finance because they see **the opportunity** to:

1. Rapidly acquire customers and deposits.
2. Grow fee revenue through partnership agreements.
3. Reduce customer acquisition and unit processing costs.
4. Change the valuation narrative.

However, they also need to be aware of **various risks**, such as:

1. Third-party conduct risks.
2. Customer profitability risks.
3. Loss of customer engagement.
4. Loss of access to transaction data.
5. A reduced ability to innovate and add value beyond the core proposition.

And yet, the biggest risk to banks may be **doing nothing at all**. If you believe the future of financial services is a world in which partnerships drive customer acquisition and embedded finance powered by BaaS is a critical revenue generator, then waiting might be risky. Early movers are likely to secure the most lucrative partnerships and gain valuable experience, cementing their competitive advantage.

Financial institutions seeking to **capture the embedded finance opportunity** should have a clear view of:

1. Objectives and potential risks.
2. What they have to offer that differentiates them.
3. How they will secure brand partners.
4. How they will close any technology gaps.
5. The people or teams who will drive this effort in their organization.
6. Other areas that might require investment.

It remains to be seen how big the embedded finance opportunity turns out to be. We are **not yet ready to pronounce the death of the traditional banking model** of banks selling proprietary products through own channels. However, there is no doubt that the financial services ecosystem is becoming increasingly open. Each institution needs to determine what role they want to play within that ecosystem and whether embedded finance is the right strategy for them.

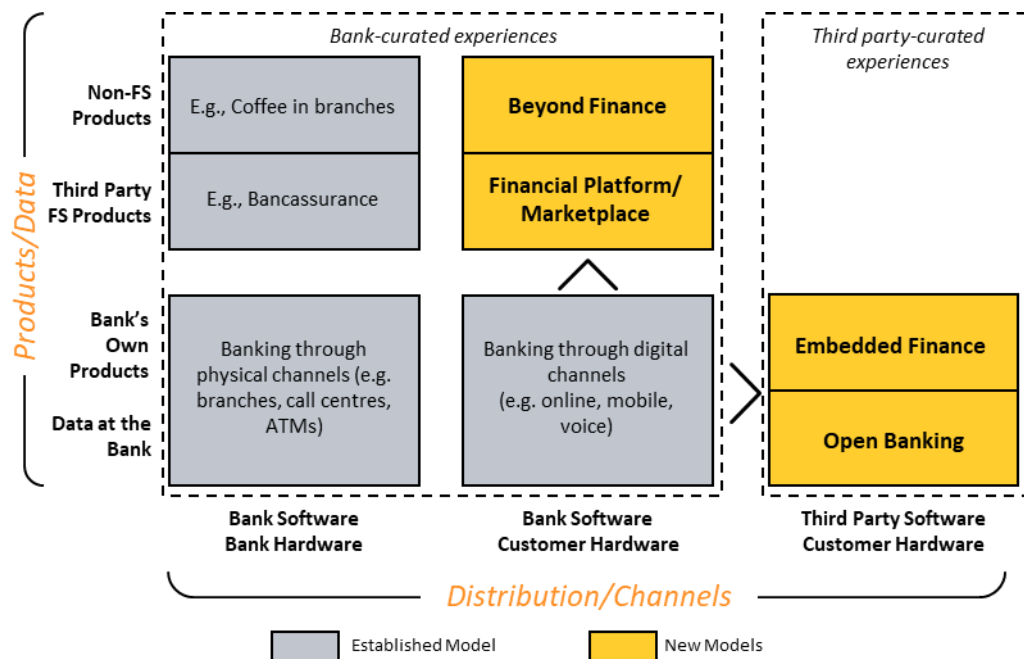
DEFINING EMBEDDED FINANCE

Celent defines **embedded finance** as the **discovery and acquisition** of tailored financial services products at the point of need within the **digital experience** curated by a **non-bank third party**. It is one of **four major models** of how banks can participate in an increasingly open financial services ecosystem.

Bank Participation in The Open Ecosystem: Four Models

Traditionally, customers would go to banks to meet their financial needs. Banks would sell customers proprietary products through their own channels. In the era of physical channels—branches, call centers, and ATMs—banks would own both “hardware” and “software.” As customers began bringing their own “hardware” in the form of increasingly diverse personal computing devices, such as laptops, mobile phones, and voice assistants, we entered the era of digital banking and the banks’ focus shifted to providing the “software”, such as online banking, mobile apps, Alexa skills, and other bank channels. Manufacturing and selling products through bank’s own channels is very much the **established model** of banking (Figure 2).

Figure 2: The Financial Services Ecosystem Is Opening Up



Source: Celent

These days, banks must decide how to participate in an increasingly open ecosystem of financial services, mainly along two dimensions:

1. Should they seek to deliver **bank-curated customer experiences** by adding **third party products** to what they sell through their own channels to their customers?
2. Should they participate in **third party-curated experiences** by enabling **access to data** and **offering their products and capabilities** via third parties?

Neither of these questions are entirely new. Banks are used to selling third party financial products, such as insurance, through their own channels. Some even experimented with selling non-FS products, from coffee to travel advice to transform branches. Similarly, as we discuss later, banks have been providing access to their data and capabilities through third parties in the past, often on a white-label basis.

The difference now is that the **digital reality** is presenting new opportunities and challenges. Banks can become curators of customer propositions that go far beyond their own product set and even financial services. Banks can also go to where their customers are, which is increasingly not even their own apps. We see the emergence of **four major models** of how banks participate in the open ecosystem.

Bank-curated experiences:



- **Financial Platforms/Marketplaces:** A model in which third party financial services products are available for the bank’s customers alongside the bank’s own products. For business customers, banks may partner with other providers to offer digital workflows for both accounts payable and receivable that are deeply integrated into their platform. **Examples include Starling Marketplace, and TD Bank and Autobooks.**



- **Beyond Finance:** A model in which a bank extends its reach by offering third party non-financial services products and services through the bank’s experience—also known as “lifestyle app” or “super app.” **Examples include Paytm Payments Bank, Alipay/Ant Financial, and BNP Paribas’ agriculture portal.**

Third party-curated experiences:



- **Open Banking:** A model in which banks enable permissioned access for third parties to customer accounts and data at the bank. Of course, banks can also become a “third party” and support their own customers by enabling them to access data at other banks. Open banking can also enable third party payment initiation from the customer’s bank account, blurring the lines with the idea of embedded finance. **Examples include most banks in Europe.**



- **Embedded Finance:** A model in which customers can acquire financial services products at the point of need within the digital journey curated by a non-bank third party. **Examples include Apple Card and Goldman Sachs, and Stripe Treasury.**

All these models require a flexible and modular technology stack, and most importantly, a different mindset and attitude. At Celent, we’ve been tracking developments in all these areas, recognizing the innovators with our Model Bank awards, and going deep into areas such as Open Banking. The focus of this report is on **embedded finance** and what it means from the banks’ perspective.

Dissecting Our Definition and Why Precision Matters

Embedded finance is not a specific technology; it is an idea that represents a significant shift in the way customers access financial services. It moves banking away from the traditional vertically integrated business of banking (where the bank owns the product and the channel) to more open ecosystems in which product manufacturing is decoupled from distribution. These ecosystems allow financial services to be embedded at the point of customer need across a variety of non-bank third parties.

Figure 3: Defining Modern Embedded Finance

	Traditional Partnerships/ White-label	Card on File (“Invisible Payments”)	Innovative Digital Channels	Open Banking/ A2A Payment Initiation	Modern Embedded Finance
Digital experience?	✗	✓	✓	✓	✓
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<i>New bank capabilities required to support</i>					

Source: Celent

Enabling third parties to provide financial services is not a new phenomenon. Most are familiar with the idea of buying car insurance or arranging financing through a car dealer. Those of us in the UK remember Tesco Personal Finance,¹ a joint venture between the Royal Bank of Scotland (now NatWest) and Tesco, one of the largest UK supermarkets. Many in Russia experienced a personal payment card for the first time through “salary cards” distributed through their employer. The list goes on. However, all these are typically “offline” examples rather than **digital** experiences.

As the world became digital, we all became increasingly familiar with fantastic experiences of *using* financial services, especially around payments. Storing card

¹ Tesco subsequently acquired RBS shareholding and launched Tesco Bank with its own banking license.

credentials with a merchant/app allows us to step out of an Uber car, walk out of an Amazon Go store, or simply enjoy subscription services such as Netflix without having to worry about the process of *paying*. Companies like Stripe and PayPal have been seeking deep vertical integration into their merchant's business to offer the most frictionless payment experience. As early as the end of 2015, Facebook Messenger enabled its users in the US to order and pay for an Uber ride directly from within the Messenger app. In Europe, there is a growing list of providers enabling merchants to allow customers to initiate payments directly from their bank accounts via open APIs. However, all these experiences rely on the customer already having access to the financial product, such as a card or a bank account; the customer is not **getting a new product**.

Integrating deeply into the commercial customers' business is not limited to innovative merchant service providers—banks also do it increasingly well by connecting their offerings via APIs to leading accounting platforms, ERP, and other systems. This is evidenced by many of our Model Bank winners over the years, from **CBW Bank** and **Yes Bank** to **RBC**, **PNC**, **Citi**, and others. However, most of these examples are aimed at increasing efficiency and supporting innovation for the bank's commercial customers, not selling new financial services to the customer's clients.

Another of our Model Bank winners in 2018 was Banco Davivienda, which partnered with PayKey, an Israeli fintech that offered a "payments keyboard" built on the smartphone's operating system. It enables customers to check their balances, make P2P payments, and access other banking services directly from any social media app or messaging application. In 2021, PayKey added the capability for customers to manage their investments and apply for loans². While this sounds very much like embedded finance, we believe **third parties should be actively involved** in offering financial services. Given that PayKey's keyboard is app-agnostic, and the social media and messaging app providers are not aware of it, we consider it a very innovative and creative bank channel.

In our view, the defining characteristics of **modern embedded finance** include:

- **Digital** experience **actively curated by a non-bank third-party**...
- ... whose customers **discover and obtain** a tailored financial services product.

Examples include:

- **Fintechs** without their own banking license that offer financial solutions to their customers in partnership with banks (e.g., Chime, MoneyLion).
- **Apple Card**, offered by Apple and Goldman Sachs.
- **Stripe Treasury**, which enables software platforms or marketplaces (e.g., Shopify) to offer bank accounts to the platform's customers (e.g., Shopify's merchants).

² <https://www.uktech.news/news/paykey-a-social-fintech-startup-launches-world-first-embedded-banking-solution-20210203>

Of course, the last thing we want is to appear too precious about the definitions. In all the examples discussed above, banks are participating creatively in the increasingly open and inter-connected ecosystem. As the ecosystem players continue to develop creative propositions and partnerships, our definition may also need to evolve.

And yet, we believe that precision matters because the **bank capabilities needed to support these propositions can differ dramatically**. For example, while a card stored with Uber offers a fantastic experience for the customer, all the bank needs to do is issue the card and approve the transactions. Open banking and account-to-account payments initiation is more demanding and requires banks to support payment initiation APIs. Enabling modern embedded finance requires even more from banks, and this is the topic we explore in the next section.

ENABLING EMBEDDED FINANCE

We now dive deeper into what it takes to enable embedded finance. We define the major components needed to deliver an embedded finance ecosystem and discuss what each of them entails. We then look at the types of technology companies playing a key role in delivering embedded finance.

Three major components are needed to deliver an embedded finance ecosystem: the customer experience provided by a non-bank brand, which recognizes the need for a financial services product; the technology and capability stack; and the license required to provide regulated financial services and ensure compliance.

Components of the embedded finance ecosystem

Non-bank user experience	FS technology and capability stack	Regulatory license
A third party-led end-user digital journey, including obtaining the financial services product.	A platform delivering modular financial capabilities as-a-service.	Necessary licenses to provide regulated financial services and ensure compliance.

The term “embedded finance” is sometimes used interchangeably with “Banking-as-a-Service (BaaS).” We define **Banking-as-a-Service** as

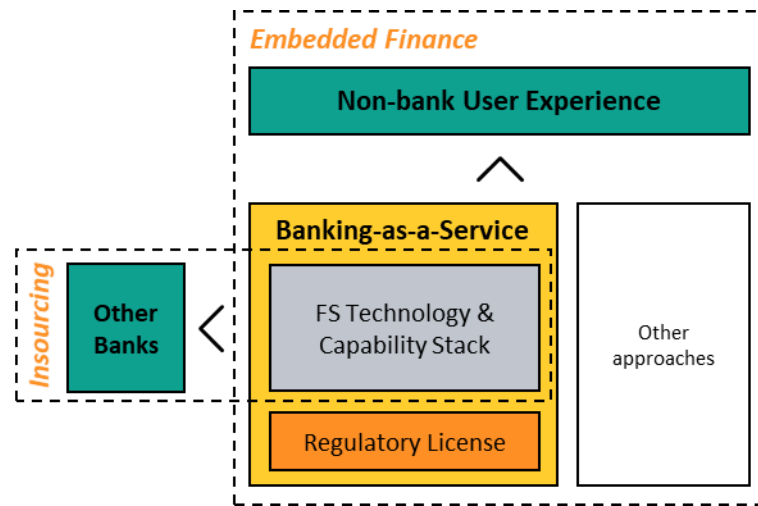
- ... a set of financial services **capabilities**, delivered **as-a-service** via
- ... a **modular, API-enabled, and cloud-based** technology platform
- ... that is compliant with necessary **regulatory** requirements.

Embedded finance is *often* enabled by BaaS. In other words:

Embedded finance is the “what,” and BaaS is often, although not exclusively, the “how.”

The modern technology stack also enables banks to serve other banks, providing certain best-in-class capabilities as-a-service, such as identity verification or payment processing. While some may also call that BaaS, the service recipient already has its own regulatory license. We believe a more accurate description of such an arrangement would be “insourcing” (see Figure 4 on page 13).

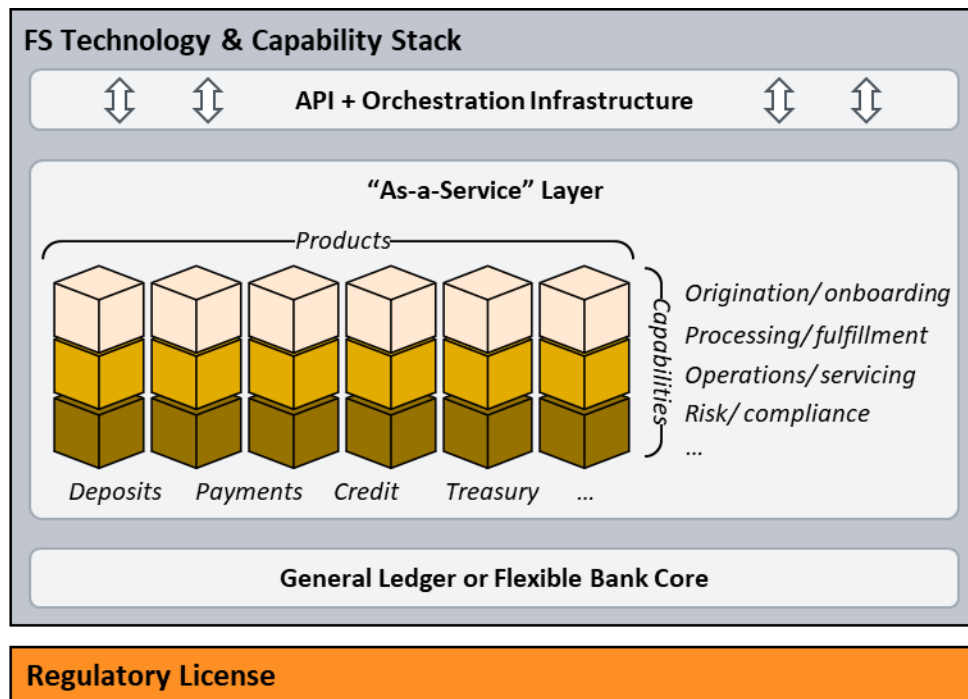
Figure 4: Banking-as-a-Service is a Key Enabler of Embedded Finance



Source: Celent

Let’s now peel the onion further and discuss the four key layers of BaaS: API and orchestration infrastructure, as-a-service layer, general ledger or flexible bank core, and of course, the regulatory license.

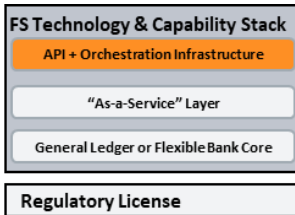
Figure 5: Four Layers of Banking-as-a-Service



Source: Celent

Four Layers of Banking-as-a-Service

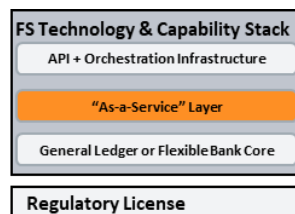
API + Orchestration Infrastructure



The integration layer is fundamental to enabling embedded finance through BaaS, providing the **“front door” for accessing data or functionality**. Any tech enabler involved in the embedded finance ecosystem must at some level provide API connectivity. When **Wells Fargo**, for example, permissions a third party to embed credit card applications into its customer experience, it uses an API connected to the bank’s credit card applications.

This configuration is not a substantial technical departure from a vertically integrated institution. However, instead of APIs or orchestration layers pointed at bank-owned channel platforms to interact with customers, they are pointed at third parties.

“As-a-Service” Layer



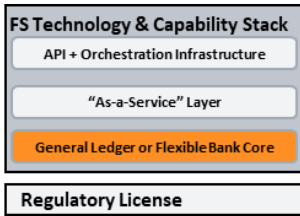
Embedded finance requires granular access to financial products, bank capabilities, data, or services. The **“as-a-service” layer** is where embedded finance partners move **to consume specific pieces** of the banking stack. At a high level, this consists of major **product** areas like payments, lending, treasury, etc. As you move into each piece of the stack, there are differences in the granularity and functionality provided by a BaaS provider. For example, a deposits API might support deposits and savings, but also custody, clearing, or brokerage. Within each of those areas, an API may support specific **capabilities** like provisioning, updating account, or KYC/documentation.

Requests in this layer are sent via API messaging (i.e., POST, GET, PUT). They are then received and acted upon by the institution, e.g., onboarding a customer or fulfilling an account. Risk and compliance requirements are established between the partner bank and fintech and are often enforced at this layer. Some BaaS providers (e.g., Bond or Railsbank) take an active role in risk and compliance, ensuring proper controls are in place and actively involving compliance officers at the licensed institution. Others may include operations or customer service activities as well—for example, when Telefónica Germany launched o2 Banking, its digital banking proposition, Fidor Bank was providing all operations, customer service, and other critical banking functions³.

It’s also worth remembering that in most instances, and especially for traditional banks offering BaaS platforms, this layer exposes underlying applications that house the products, data, or funds. A bank using a technology partner, such as **Mambu**, to provide deposit origination to a non-bank through BaaS would use APIs connected directly to the Mambu core banking platform. Others that only provide the APIs and use partner banks usually sit as an integration layer, or intermediary, between the partner bank’s back end applications and the connecting non-bank. The granularity of how these applications are broken up into functional pieces matters, as it is critical to giving the most control over the product embedded into the third party experience.

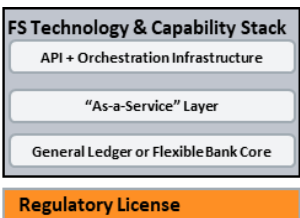
³ In May 2020, Telefonica replaced Fidor with comdirect bank AG as a banking partner for o2 Banking.

Flexible Bank Core



At the bottom of the technical capability stack is the ability to **hold or track accounts and transactions**. The ledger, or flexible banking core, sits behind the functional capabilities to process new customer acquisitions. If a consumer on **Google Plex** signs up for an account at **Citi**, deposits would sit within the Citi bank core and remain accessible by end users managing funds through the Google front-end. The ability to interact (read/write) with a flexible bank core is necessary to provide financial services embedded into the third parties. These applications usually look like standard bank cores. However, other BaaS providers (such as **Railsbank** or **Modulr**) are building ledgers to use specifically with their platforms. These are usually fit for purpose, such as e-money accounts.

Regulatory License

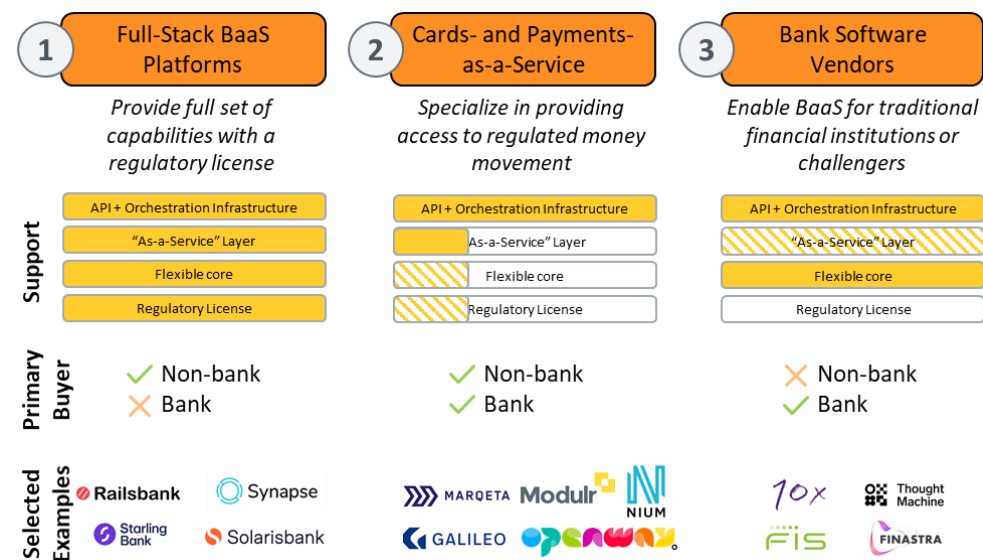


Underpinning almost all embedded finance is **regulatory support** that provides access to regulated financial services. The regulated entity primarily interacts with the regulatory bodies to ensure compliance with the jurisdiction’s requirements. The entity also provides regulatory guidance, assists with fraud checks and prevention, and qualifies for deposit insurance. The complexity of regulatory licenses is growing, and a full banking license may not always be needed to provide viable financial services (e.g., an E-money Institution (EMI) license may be sufficient to support payments propositions).

Key Players with Technology Enabling Embedded Finance

The players with technology relevant for enabling an embedded finance ecosystem are incredibly diverse. We group them into three major categories (Figure 6).

Figure 6: The Firms with Technology Enabling Embedded Finance



Source: Celent

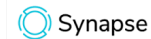
1. **Full-stack Platforms⁴**: Full-stack BaaS offerings **combine** the **capability stack**, the **bank core**, and some level of “out of the box” **regulatory support**. There are three different models at play.
 - First, there are fully licensed financial institutions (e.g., **BBVA**, **Goldman Sachs**, **Starling Bank**) with platforms to distribute their products to third parties and with all layers of the stack under the same roof.
 - Next, there are those which provide the core, and almost all the functionality while providing access to regulated financial services through specialty licenses such as E-money Institution (EMI) in Europe or Industrial Loan Company (ILC) in the US (e.g., **Railsbank**). There is a preferred bank partner for new geographies or for functionalities not covered under the specialty license (such as interest-bearing deposits).
 - The third sub-type provides a complete BaaS API platform on top of a preferred partner bank that supplies its own back-office software and regulatory license. For example, **Synapse** provides a platform but goes to market with **Evolve Bank and Trust**. While there are two providers under the hood, we consider this to be a complete market offering, and therefore “full stack.” Full stack providers primarily sell to non-banks; however, some have found success selling differentiated aspects of the value chain to other institutions (e.g., fraud or ID-as-a-Service).

Examples

UK-licensed challenger bank that has opened its APIs to non-banks needing access to services like payments, savings, current accounts, or cards. Special strengths in PaaS offering.



Provides a BaaS platform that solves use cases for “open finance.” It has an e-money license in the UK, Europe, and SE Asia and a payment subsidiary that holds other licenses or scheme memberships.



Provides a BaaS platform on top of a partner bank (Evolve Bank and Trust). Provides full bank functionality plus additional services like data aggregation.

Example Clients

Raisin UK, Xero, PelicanPay

Plum, LightningAid, MuchBetter




Dave, Empower

2. **Cards- and Payments-as-a-Service**: These providers are **vertically focused platforms** that specialize in moving money and providing regulated access to card schemes and payment rails. They usually act as card issuer processors, add functionality to existing card processing, or act as the connecting platform to the bank. For example, **Marqeta** connects directly with card networks and issuing banks to provide a system of record for payment card data, manage the issuance of cards, authorize transactions, and communicate with settlement entities. Non-banks looking to offer payment products or facilitate money movement are usually the primary buyer. However, challengers or traditional institutions may also consume these capabilities, particularly when they want to move into new markets where they have limited local expertise or diversify product offerings.

⁴ We don’t comment here on the strength of the underlying technology which can vary considerably.

Examples	 <p>Modern card issuing and processing platform that allows clients to create tailored payment experiences. Supports many different use cases across industries.</p>	 <p>Payment processing platform with card issuing and other services. Acquired in 2020 by SoFi with plans to run as a subsidiary.</p>	 <p>Focuses on Payments-as-a-Service and uses an e-money license to provide special payment accounts for IBAN, scheme access, etc. Has direct relationships with the Bank of England for clearing.</p>
Example Clients	Doordash, Affirm, Branch	Chime, Monzo, SoFi Money	Sage, Revolut, BitStocks

3. **Bank Software Vendors:** These are the **application providers** which enable granular services to be offered on top of a client bank. This cohort focuses primarily on selling backend applications to banks (e.g., core platform, loan origination/servicing, payments) but can sell to non-banks looking for some simplified ledgering or lending capabilities. Software vendors enable a bank to engage in embedded finance, and as such, do not need to provide direct regulatory support. For example, **Finastra’s FusionFabric.Cloud** and core allow **Seattle Bank** to offer its accounts directly through **Google’s Plex** wallet via its APIs. However, the bank is still responsible for due diligence and maintaining regulatory compliance. Software vendors often provide portions of the “as-a-service” layer (such as deposit accounts, lending, etc.) but are not full-stack platforms as the scope of the application is often specific to a product area. While there are sub-groupings that could be drawn between traditional incumbents (e.g., **Finastra, FIS, Fiserv, Jack Henry, OpenWay, Temenos**) and next-gen providers (e.g., **10x, Mambu, Thought Machine**), they are essentially providing for the same need. Differentiation comes from the ease of use or flexibility of the underlying technology platform, but that is not the scope of this paper to explore.

Examples	 <p>Cloud-native core banking platform which serves traditional and challenger banks. Fully API-enabled and microservices-based to support BaaS.</p>	 <p>Incumbent core platform provider which leverages an API platform, FusionFabric.Cloud sitting on top of its cores to enable BaaS.</p>	 <p>Fully cloud-native core platform created by ex-Barclays CEO. Supports some large banks with specific BaaS deployments.</p>
Example Clients	Curve Credit, Monese, Mox Bank	Seattle Bank	Virgin Money, Westpac

It’s important to remember that these archetypes are generalizations for the sake of outlining the major providers in the market and how they are enabling embedded finance. It’s also not an exhaustive list—for example, firms that started with the focus on open banking, such as **Plaid** or **TruLayer**, are rapidly developing capabilities and use cases relevant for embedded finance.

In other instances, multiple players come together to deliver a service. Examples of “enabling the enablers” include i2c partnering with Bond to help deliver its BaaS proposition and Deserve supporting Marqeta’s new credit card-as-a-service offering.

There are almost as many flavors as there are providers, with many performing similar roles in different ways. As always, the devil is in the details.

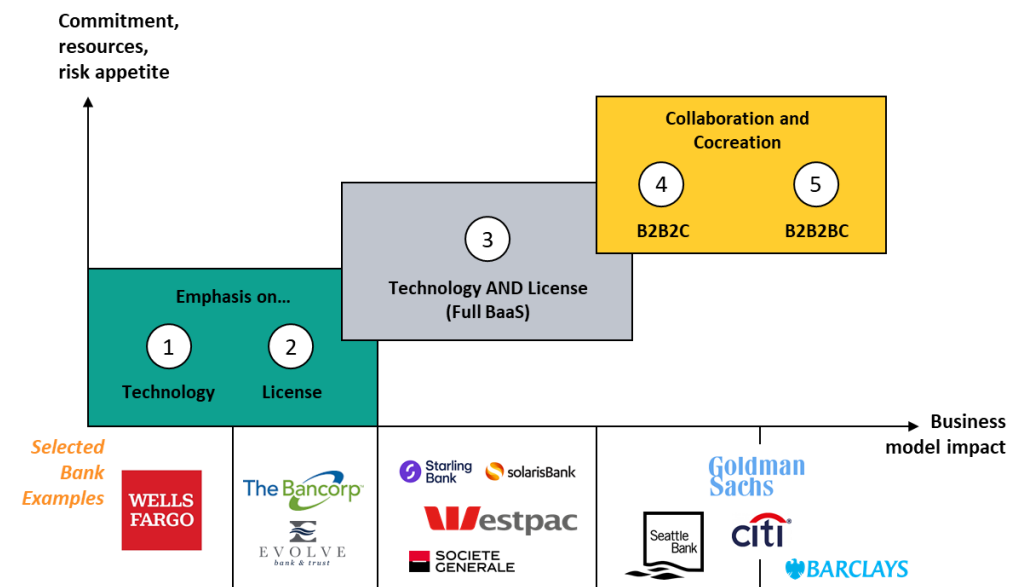
HOW BANKS ARE ENGAGING WITH MODERN EMBEDDED FINANCE

The leading banks are already active in this space and are experimenting with different approaches. In our research, we identified five main approaches financial institutions are using to engage with embedded finance ideas. We grouped these five approaches into three categories, which we believe differ in terms of business model impact as well as commitment, resources, and risk appetite required (see Figure 7).

Five Leading Approaches

This space is changing rapidly, and different models seem to be emerging on a regular basis. The list of approaches below is by no means exhaustive. Furthermore, we picked examples that we think illustrate a particular approach well. It does not mean that it is the only approach followed by any given bank. Many banks, especially the larger ones, are experimenting with different models and approaches.

Figure 7: How Banks Engage with Embedded Finance: Five Leading Approaches



Source: Celent

1. **Technology-led:** making it easier for partners to integrate the bank's product into its partners' digital experiences. A good example of this is **Wells Fargo**, which developed a Software Development Kit (SDK) and a set of APIs for its co-branded credit cards. Historically, this segment was served through co-branded programs and partnerships via a traditional white-label approach, with credit offered via in-store kiosks or paper applications provided at the register. Later evolutions online were accomplished through interrupted flows with customer journeys redirected to partner sites. The co-brand credit card SDK makes it easy for Wells Fargo merchant partners to integrate and offer credit seamlessly in their digital experience at the point of need, for example, during shopping cart check-out, while the bank acquires new customers.
2. **License-led:** being the regulatory license holder, and often BIN sponsor, to support financial services propositions launched by neobanks and other fintechs that don't have their own banking licenses. Examples include **The Bancorp Bank**, **Evolve Bank and Trust**, **Lincoln Savings Bank**, and **Sutton Bank** that partner with modern card processors, such as i2c, Galileo (now SoFi), Marqeta, and others, to support Chime, SoFi Money, MoneyLion, and many other fintech propositions. For the banks involved, it is a way to attract deposits and earn a share of the card interchange income. We would also include Buy Now Pay Later (BNPL) propositions from fintechs, such as Klarna, PayPal, and others, many of which have their own technology platforms but partner with **WebBank** to extend financing⁵ to their US customers.

The first two approaches are not radical departures from the banks' traditional business model but offer new opportunities to sell traditional bank products and capabilities more effectively. In the third approach, banks **enter the BaaS market** in earnest, combining the license and capabilities under one roof.

3. **Technology- and license-led:** combining a banking license with a modern technology platform to offer a full BaaS package. Most, but not all, banks in this category have a BaaS proposition to brands and fintechs *and* offer banking services to their own customers directly. Another difference is how the bank acquires the technology; we see examples of all typical approaches, from building their own to partnering to buying.
 - **Solarisbank** in Germany is a pure BaaS provider and uses its German banking license only to support third parties rather than go after its own customers.
 - **Starling**, **Green Dot**, and **Cross River** are examples of banks with a direct-to-consumer proposition and a proprietary technology that offers BaaS services.
 - **JB Financial Group** in South Korea launched its Open Banking Platform (JB OBP), publicly branded as "Obank," to enable retailers, P2P lending platforms, remittance providers, and even its affiliates abroad to offer financial services products via the platform.

⁵ In Europe, Klarna and PayPal have banking licenses.

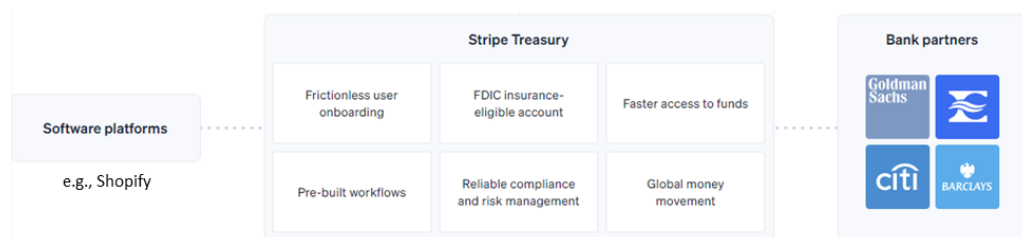
- **Société Générale** in France acquired Treezor in 2019, a fintech with an Electronic Money Institution (EMI) license, approved by the French regulator, and a principal member of the Mastercard network.
- **Westpac** in Australia built a standalone BaaS platform with 10x Future Technologies, a cloud-native banking technology provider, and has attracted Afterpay and SocietyOne, BNPL, and consumer lending companies, respectively, enabling them to offer deposit products to their customers.

This approach represents a rather different business model—it requires managing a technology platform for the benefit of third parties, not just for the bank’s internal use. It also typically opens the door to third party developers, who build innovative customer propositions directly on the platform, leveraging the building blocks of banking capabilities.

In our view, the final two approaches are distinct because they imply a greater degree of upfront **collaboration and cocreation** between the brand developing the proposition and its bank and technology partners. We also differentiate between B2B2C and B2B2B2C approaches.

4. **B2B2C Collaboration and Cocreation:** collaborating with third parties, often large brands, to help develop tailored products for their customers. Examples include Apple partnering with **Goldman Sachs** for Apple Card, **Green Dot Bank** enabling Uber Money, and Google’s upcoming Plex accounts, with 11 partner banks and credit unions, including **Citi**, **Seattle Bank**, **SFCU**, and others.
5. **B2B2B2C Collaboration and Cocreation:** collaborating with technology firms to support *their* BaaS propositions to *their* B2B clients. For example, **Goldman Sachs** and **Evolve Bank** in the US are partnering with Stripe to offer Stripe Treasury, a financial services proposition for *platform partners*, such as Shopify, which in turn offer financial products to *their* merchants. Stripe is also working with **Citibank** and **Barclays** to support its international expansion.

Figure 8: Stripe Treasury Overview



Source: Stripe

To us, these two approaches represent the biggest change for banks in the business model and, most importantly, the mindset. Rather than viewing technology giants and marketplaces as competitors poaching the banks’ retail and commercial

customers, banks willing to participate via this model must be prepared to view those players as partners and as a channel to grow their own books.

Our attempts to categorize embedded finance approaches are only a start. It is a very dynamic space, and players are being very creative in the way they partner and develop propositions to their customers. We are in the early days of embedded finance and we expect new business models will continue to emerge.

THE PATH FORWARD

The market is beginning to move, and financial institutions need to consider what embedded finance means to them, why they might want to participate (or not), and if so, how.

The Embedded Finance Opportunity for Banks

Embedded finance represents a significant shift in how banks operate, so it's no surprise that not everybody is clear about the opportunity and why they should engage. Celent highlights some of the most common reasons below.

1. **Rapidly acquire customers and deposits:** distribution of financial products via external channels opens the door to new markets and allows financial institutions to acquire new customers. Standard Chartered used its nexus BaaS platform to partner with an e-commerce site in Indonesia to offer financial products to a customer base that was largely underserved. DBS Bank in Singapore is partnering with lifestyle brands to acquire customers in India, a market it did not previously serve. Banks supporting Stripe Treasury gain access to small merchants setting up on Shopify.
2. **Grow fee revenue through partnership agreements:** depending on the market dynamics, banks may be able to charge fees for enabling permissioned data access or collect fees and transaction revenue share from partners. For example, banks offering BIN sponsorships to fintechs typically receive a share of the card interchange fees.
3. **Reduce customer acquisition and unit processing costs:** Embedded finance offers an opportunity to attract new deposits through non-traditional channels at a lower cost. According to Oliver Wyman's analysis, the cost of acquiring a customer in the traditional banking model based on expensive legacy technology and operations is typically in the range of \$100 to \$200. With a new, greenfield BaaS technology stack, the cost can be reduced to between \$5 and \$35. Adding scale also lowers unit costs.
4. **Change the valuation narrative:** Many financial institutions have been observing soaring valuations of various payment and technology firms, often with a degree of envy. Despite being at the center of B2C, C2B, and B2B financial flows, banks have seen their payment costs growing while revenues are stagnating or even declining. Success in embedded finance offers the opportunity to change the valuation narrative for incumbents.

Finally, we mentioned earlier that embedded finance might create opportunities to **insource from other banks**. If the bank builds up differentiated capabilities while seeking to support embedded finance (e.g., in fraud, identity verification, payments), it can offer those capabilities to other financial institutions, generating new streams of revenue.

Forewarned is Forearmed: Potential Risks

While embedded finance is potentially a great opportunity, financial institutions also need to be aware of various risks, such as:

1. **Third-party conduct risk:** While financial institutions typically perform due diligence on potential partnerships, the risk of misconduct with a brand partner can never be fully eliminated. In 2018, Beam Financial was forced to shutter after claims of “unfair or deceptive acts.” Its partner, Huntington National Bank, sued to try and force Beam to help them return money to customers. The risk can be mutual, as shown by the investigation into gender bias allegations of Goldman Sachs credit underwriting algorithms used for Apple Card.
2. **Customer profitability risk:** Banks must consider questions around the kind of customer embedded finance might attract. For example, does an institution with a lending product embedded into a third-party experience want *every* customer to be offered a loan? Probably not. Would an embedded deposit product in a gaming platform attract profitable customers for the bank? Maybe, maybe not.
3. **Loss of customer engagement:** Banks need to think about what this means for future customer engagement. For years banks have feared being disintermediated from direct relationships with customers and being relegated to the back end as infrastructure providers, or “simple pipes.” Institutions will want to think about how they can add enough value to be co-branded partners, like “Intel inside” in the 90s. They also need to consider what happens when the customer has an issue—who do they call and whose brand is tarnished?
4. **Loss of access to transaction data:** Banks have always prided themselves on having lots of customer data. They may not always have known what to do with that data, but it’s been there, ready to be mined for rich insights. If their partners now gain access to that data by offering customers a fair value exchange, does that deprive banks of one of their key assets and differentiators compared to many fintechs?
5. **A reduced ability to innovate and add value beyond the core proposition:** If banks lose customer engagement and transaction data is available to third parties, does that diminish banks’ ability to offer other services, such as financing? Does it make it more difficult for the bank to differentiate itself and compete for partners?

And yet, the biggest risk to banks may be **doing nothing at all**. If you believe the future of financial services is a world in which partnerships drive customer acquisition, and embedded finance powered by BaaS is a critical revenue generator,

then waiting might be risky. Early movers are likely to secure the most lucrative partnerships and gain valuable experience, cementing their competitive advantage.

Capturing the Embedded Finance Opportunity

As we discussed at the start of this report, embedded finance is only one way for banks to engage in an increasingly open financial services ecosystem, and it won't be the right fit for every bank. Financial institutions seeking to capture the embedded finance opportunity should have a clear view of:

1. **Objectives and potential risks:** Banks need to make sure they know why they are getting into embedded finance and what it might entail. **The fear of missing out is not a valid strategic driver.**
2. **What they have to offer that differentiates them:** These are points of differentiation beyond a license, regulatory expertise, fraud monitoring, and transactional trust that the industry inherently has. Can they offer favorable economics? Do they have a demonstrable track record of partnering?
3. **How they will secure brand partners:** In some cases, banks may approach brands with a partnership proposal. More likely, the non-banks—large brands, fintechs, developers—will have a better idea of how to offer the best experience for their customers and how financial services might fit into that. How will they create awareness among the non-banks so that they know to come to them? Will they know how to evaluate and vet the partners to select the ones they want to work with?
4. **How they will close any technology gaps:** Technology underpins the ability of banks to engage with embedded finance, and it may require new thinking around providers. Older technology will struggle to provide the granular composability necessary for embedding new product propositions into third-party channels. Westpac implemented an entirely new core platform in a greenfield tech stack allowing it to offer embedded financial services in Australia. Other banks may be leveraging existing API capabilities on top of applications from established vendors like Temenos and Finastra. Even banks building platforms internally will need the right technology partner.
5. **The people or teams who will drive this effort in their organization:** The decision to get into embedded finance is strategic. The execution will require resources to manage partners and develop joint propositions, and many tactical decisions will need to be made fast. Do they need to appoint an executive with authority and mandate to spearhead embedded finance efforts?
6. **Other areas that might require investment:** Many banks are used to viewing compliance as a bottleneck and “part of the problem.” In order to deliver embedded finance, compliance needs to be “part of the solution.” The fintechs’ favored approach to “do it and ask for forgiveness later” is often at odds with the “ask for permission first” approach common at many banks. The challenges of adapting the compliance organization to deliver on a new set of requirements while continuing to ensure fail-safe compliance should not be underestimated.

It remains to be seen how big embedded finance opportunity turns out to be. We are **not yet ready to pronounce the death of the traditional banking model** of banks selling proprietary products through own channels. However, there is no doubt that the financial services ecosystem is becoming increasingly open. Each institution needs to determine what role they want to play within that ecosystem and whether embedded finance is the right strategy for them.

This guidance for banks around embedded finance is relevant today, but the market is constantly moving. Celent will continue to watch and write about this space with great interest.

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