Embedded finance

Creating the everywhere, everyday bank

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Key takeaways

"Digitally integrated ecosystems present a chance for banks to find a better equilibrium between risks and opportunities."

Shayan Hazir
Chief Digital Officer for ASEAN, HSBC

Embedded finance is essential for modern banking strategies.

70% of banking executives say embedded finance is either core or complementary to their business strategy.

Ecosystem-based business models are rising.

Financial institutions are increasingly investing in the platform economy, with 20% of organizations already offering embedded finance solutions.

Yet bank executives' priorities don't align with consumer demands.

Bankers underappreciate the value of mobile wallets, personalized rewards, and satisfying customer services.

Monolithic architectures and processes hinder banking ambitions.

Foundational gaps in modernization and API standardization are hampering embedded finance outcomes.

Privacy and security challenges slow innovation across open ecosystems.

As generative AI takes center stage, CEOs of financial institutions cite privacy and cybersecurity as the top two barriers to deployment—more than CEOs from any other sector.

Foreword

In today's rapidly shifting economic landscape, financial institutions face dynamic challenges that demand innovation. Many CEOs have set their organizations on a transformative journey, driven by the potential of open business models and the power of ecosystem partnerships. They are embracing embedded finance, rather than merely reacting to it. But they are not yet getting all they can from this burgeoning opportunity.

This research, crafted by the IBM Institute for Business Value (IBM IBV) in collaboration with the Banking Industry Architecture Network (BIAN) and Red Hat, provides actionable insights into how banking strategies intersect with new client demands. Deep survey data is enriched by qualitative interviews with executives at financial institutions and their non-banking partner organizations.

Our findings reveal tremendous opportunities ahead for financial institutions that transform business culture, operating models, and IT systems to align with a digitally driven global economy. As generative AI takes center stage, reaping the benefits of the next industrial revolution requires both strategic perspective and pragmatic action.

We hope this research will ignite fruitful discussions within your organization and help you strike a balance between ambition and action. By fostering a collective commitment to future-proofing your bank, you can seize the opportunities presented by the platform economics of embedded finance.

Shanker Ramamurthy

Global Managing Partner
Banking and Financial Markets
IBM Consulting

Steve Van Wyk

Chairman of the Board
Banking Industry
Architecture Network

A new banking paradigm

The platform economy has transformed how consumers experience the digital world, with dramatic implications for financial institutions. Rather than going to the bank—physically or digitally—consumers and businesses want the bank to come to them. Institutions that don't embrace embedded finance are at risk of losing relevance.

Pressure on the banking industry has mounted over the past two decades, with return on average equity (ROAE)—a key performance metric—dropping across the globe. For major advanced economies (as defined by the International Monetary Fund) and EU member states, the median of the five-year average ROAE for the top 50 banks (by total assets) dropped from 14.05% to 6.90%. For emerging and other advanced economies, this figure has declined from 16.91% to 10.85%.[1]

In the last year, pressure on ROAE eased as most central banks acted to raise interest rates and fight inflation.[2] However, the quick hike both triggered recessionary fears and exposed unseen weaknesses in the financial services industry. In the US, a sudden drop in depositors' trust revealed unrealized losses in bonds held to maturity, leading to the collapse of a few large banks.[3]

In this environment, banking CEOs need to balance the need for long-term viability with short-term profitability. This is doubly important as cost-to-income ratios (CIR)—which measure a bank's efficiency—also remain underwhelming. In the aftermath of the global financial crisis, CIR has been particularly sticky, at roughly 59% in major advanced economies and EU member states. Other advanced and emerging economies appear to have fared better, with the 5-year median average of CIR improving from 47.74% to 39.36%. However, if China is excluded, we see that the efficiency ratio stayed flat.[4]

And competition is intensifying. A cohort of neobanks and digital banks have popped up almost everywhere—nearly 300 digital-first banks now exist worldwide—and platform-based banking services offered by non-banks are capturing significant market share, especially in other advanced and emerging economies.[5]

What is embedded finance?

For the purposes of this report, we define embedded finance as the integration of financial products and solutions within the customer journeys of non-financial services organizations, eliminating friction and enriching the overall experience.

Relying on traditional business models has curbed most banks' abilities to recapture sustained profitability and stronger market capitalization. Embedded finance can help improve business performance by expanding transaction volumes rapidly, capturing new customers, and adding new revenue streams.

Embedded finance enables banks to engage with clients on the digital platforms they're already using, integrating through secure application programming interfaces (APIs). By adapting to new consumption models and redesigning their role, regulated institutions can take advantage of a fast-growing open ecosystem.

To succeed in this space, financial institutions must invest in new technology, rethinking existing core business processes in the age of generative AI (see Perspective, "Driving growth with generative AI," page 7). They must also transform business architectures to promote new ways of working.

As clients become accustomed to hyper-personalized end-to-end experiences, they will be less willing to accept friction when accessing financial products. Leveraging ecosystem data and insights generated by artificial intelligence, financial institutions can be ready to serve their clients whenever and wherever a financial need arises.

This reality places ecosystems at the heart of a successful business model. In addition to owning all levers in a product-centric value chain, CEOs can now also create business value through ecosystem collaboration. Client and business relationships are no longer transactional. They're symbiotic.

So, how can banks make the most of the opportunities that are emerging? The IBM Institute for Business Value (IBM IBV) in collaboration with BIAN (Banking Industry Architecture Network) and Red Hat, surveyed 1,000 executives from international financial institutions and conducted direct interviews with selected executives across banking and non-banking firms about the role embedded finance plays in their strategy.

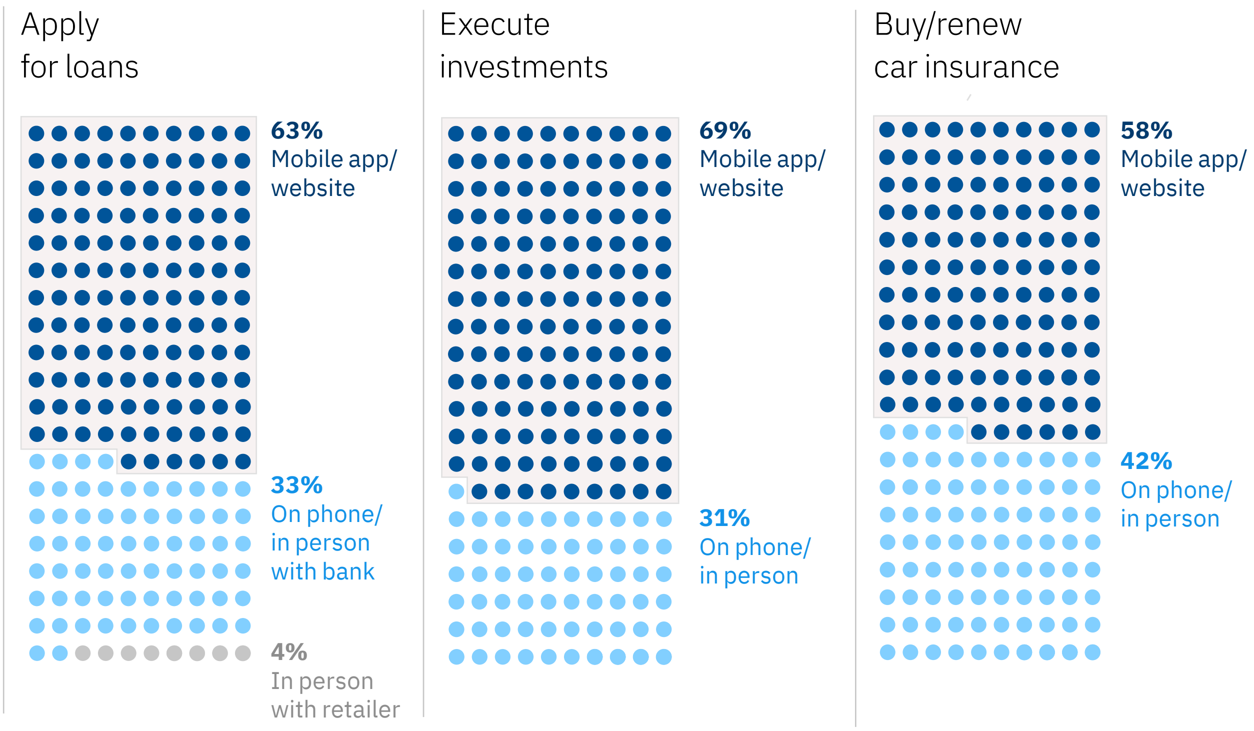
We also surveyed 12,000 consumers of financial services in 12 countries to identify emerging consumption patterns. We asked if they trust branchless apps to keep their primary accounts, how they prefer to pay for different types of purchases, and what influences their financial decisions (see "Study methodologies" on page 42).

Our findings confirm that a sea change is underway in the banking industry. Consumers have embraced digital channels, opting for a mix of direct communication and online access. Most say that, over the past three years, they've started a loan application (63%), executed an investment decision (69%), or bought or renewed car insurance online (58%) (see Figure 1).

FIGURE 1

Digital finance goes mainstream

Most consumers now apply for loans, manage investments, and purchase or renew car insurance online.



As for financial institutions, 70% of executives say embedded finance is either core or complementary to their business strategy, not just an initial bet (see Figure 2). What's more, nearly three in four banks are implementing or have gone live with an embedded finance strategy (see Figure 9).

But does embedded finance have staying power? Explore the rest of this report to answer four key questions:

Are consumers ready to bank on the platform economy?

Is embedded finance more than hype?

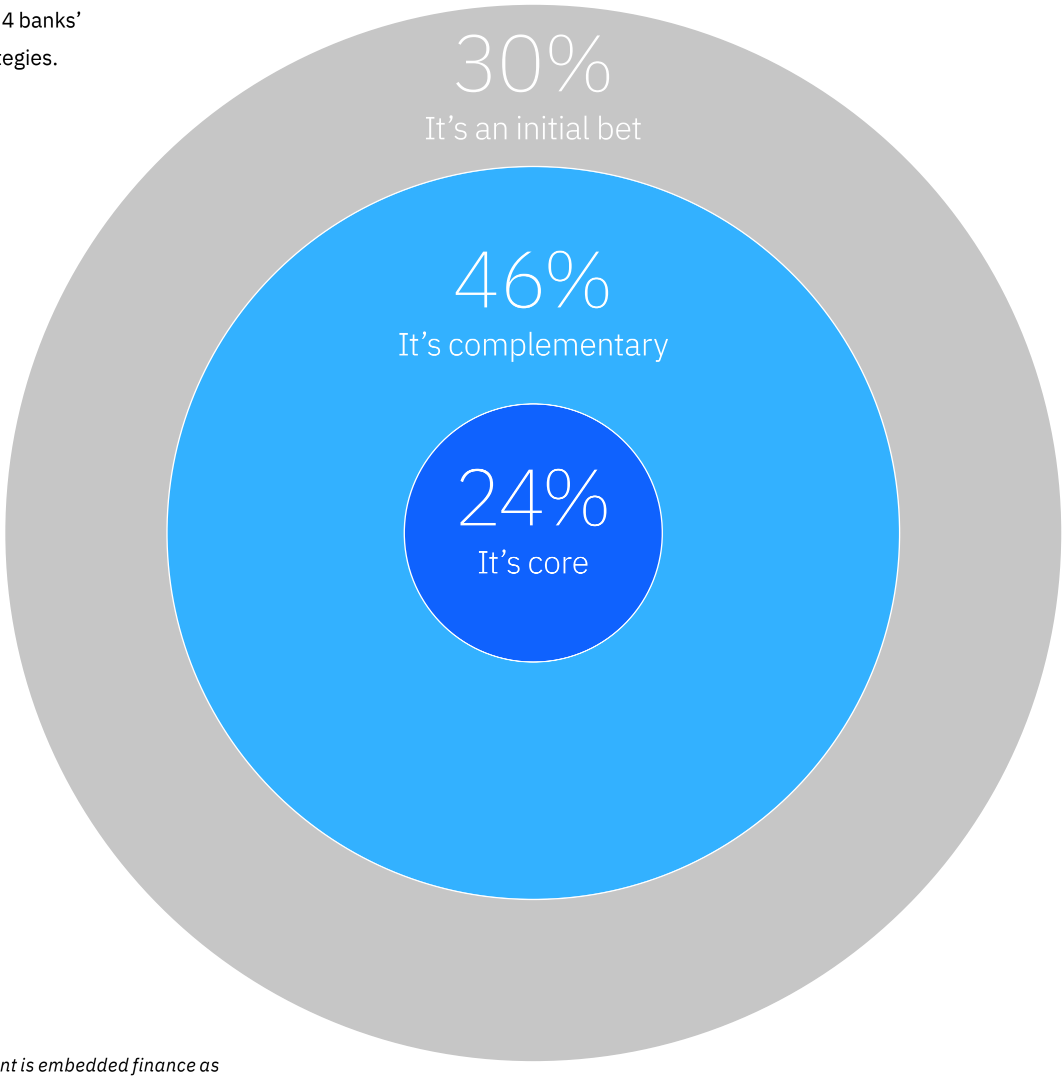
Where can banks remove friction to accelerate transformation?

How can banks elevate their role?

FIGURE 2

Not a nice-to-have

Embedded finance is now central to 1 in 4 banks' business strategies.



Q: How important is embedded finance as part of your overall business strategy?

Perspective

Driving growth with generative AI

AI powers the platform economy. It has completely transformed how financial data can be aggregated beyond a bank's borders, enabling a host of innovative business models. And when applied to embedded finance, it can accelerate development, improve client experiences, and augment the knowledge of customer service representatives and financial advisors.

Generative AI could take this transformation to the next level, making embedded finance platforms more adaptable than ever before. And CEOs of financial institutions see the opportunity in front of them.

A recent IBM IBV survey found that CEOs of financial institutions see business growth and expanded capabilities as the top benefits of adopting generative AI.[6] While AI does boost efficiency, cost reduction isn't a top priority. For example, 60% of CEOs say they expect generative AI to offer a competitive advantage or enhance customer experiences (see case study, "Large global payments company turns complaints into actionable insights with generative AI," page 14), but far fewer expect to reduce or redeploy headcount (34%) or decrease operational costs (30%).

How do CEOs plan to capture these opportunities? The augmented workforce will play a primary role. Rather than automating job roles, 93% of executives say they expect generative AI to augment employees across functions.[7]

Overall, CEOs see more room for automation in direct client-oriented activities, such as marketing (27%) and customer services (24%). But financial services CEOs recognize that communication and human interactions are essential to their client relationships. Compared to CEOs overall, they see more potential for automation in activities related to human resource management (25%) and information security (20%) rather than marketing (15%) and customer service (11%).[8]

Building trust in generative AI will be another essential step forward. Financial services CEOs say privacy (70%) and cybersecurity (64%) are the top barriers to adopting generative AI, followed by regulation (42%).[9] Banks will need to create a culture of responsible AI to overcome these obstacles, building on the principles of privacy, robustness, fairness, explainability, and transparency.[10]

“Banks have an advantage over fintechs because clients recognize the value of an established relationship that is based on trust and reliability [...] this trust cannot be taken for granted, as clients have learned to look elsewhere for convenience.”

Andy Nam
CIO for Asia and Oceania, Mizuho Bank

Are consumers ready to bank on the platform economy?

Embedded finance is not simply a new form of upselling or cross-selling. It's an engagement model that lets financial institutions engage with clients inside their existing digital journeys. Succeeding with this approach requires a fundamental rethinking of the role financial institutions play.

In essence, embedded finance integrates financial services into cloud-based, non-financial ecosystem platforms. As consumers and businesses turn to digital platforms to complete a wider variety of tasks, they've become more comfortable with accessing financial services through digital channels.

When we asked consumers where they prefer to deposit their salary and keep their savings, 80% said a traditional bank. But 16% are already comfortable with a branchless, fully digital proposition—with that figure significantly higher in certain markets. In Brazil, for instance, 29% of respondents have a primary account with a neobank, compared to 7% in Japan.

Understanding the status of primary accounts is important, as these accounts provide stickiness in banking relationships, helping financial institutions achieve higher margins with lower acquisition costs. So, what motivates consumers to choose a banking provider—and what would convince them to make a change? While preferences vary by region, most consumers say traditional factors, such as reputation, proximity, and convenience, influenced where they chose to open their primary account (see Table 1). Personal recommendations also have above-average influence, especially relevant for a new brand expanding across digital communities.

TABLE 1

A diverse market

The factors influencing where consumers hold their primary bank account vary by region.

		Personal recommendation*	Brand reputation	Branch proximity	Easy online opening
Overall average		33%	26%	21%	21%
Major advanced and EU	USA	**33%**	26%	**24%**	15%
	Germany	30%	23%	**28%**	18%
	Spain	**34%**	24%	**27%**	16%
	UK	31%	**29%**	18%	**22%**
	Sweden	**35%**	18%	20%	**27%**
	Japan	**36%**	22%	**30%**	12%
Other advanced and emerging	Brazil	32%	**28%**	16%	**24%**
	India	**38%**	**27%**	15%	20%
	China	31%	**27%**	21%	**22%**
	Singapore	**33%**	**33%**	20%	16%
	Thailand	23%	**29%**	20%	**29%**
	UAE	**37%**	25%	12%	**26%**

Above-average relevance

Below-average relevance

**from employers, family, and friends*

Q: What influenced your decision on where you keep your main savings or deposit your salary?

But when we asked consumers what could convince them to move their primary account, better customer service, the convenience of transferring money instantly, and frictionless mobile access rise to the top of the list. Most consumers across ages and markets (80%) favor online access for virtually all basic transactions: 62% using mobile and 12% using a website.

When people think about switching their main bank account, the ability to instantly transfer money is a significant factor. In fact, there's a 19% greater chance that this feature will sway their decision in favor of a bank that offers it (see Figure 3).

This is where competition intensifies, particularly from new entrants leveraging a combination of digital wallets, instant payments, peer-to-peer money transfers, and platform engagement. When consumers consider these conveniences, the value of brand reputation and branch proximity fade in importance.

Plus, as consumers spend more time online, they are becoming more likely to conduct financial transactions on mobile devices, leveraging digital wallets and in-app purchases. When we look across ages, we see that younger cohorts are especially likely to use a mobile device to review transactions, apply for a loan, execute investments, and buy car insurance. In this environment, embedding the full stack of financial services inside the digital journey becomes essential to remain relevant.

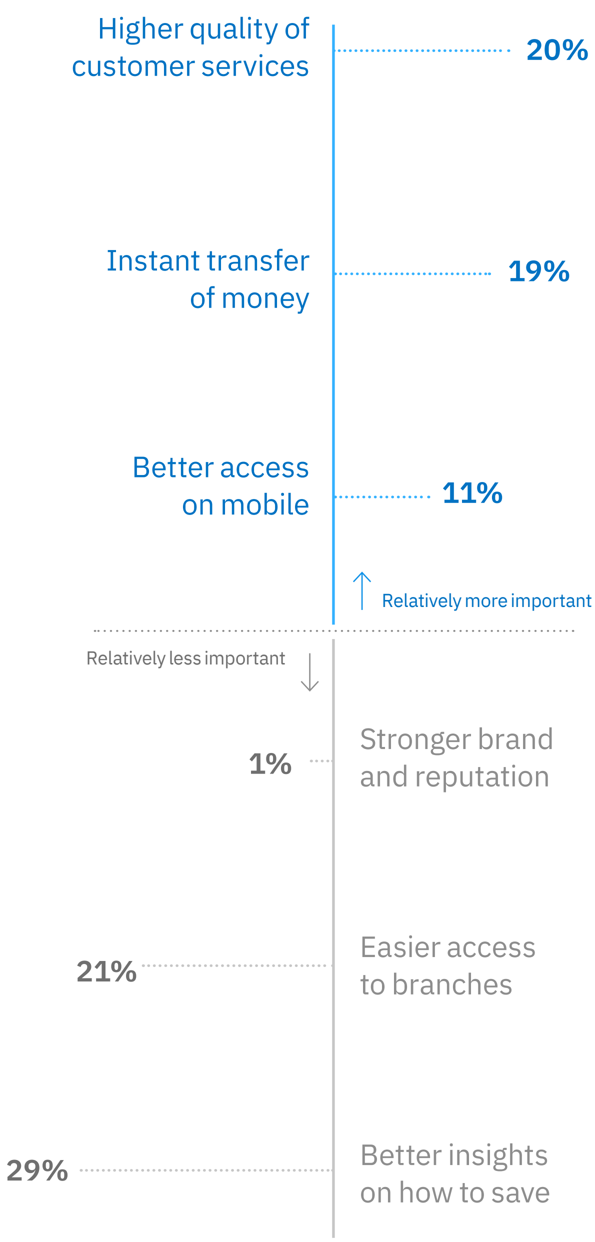
"We're super keen on making it easier for people to interact with businesses and for businesses to interact with their customers. And making all this just as easy and obvious as possible so you can layer services into whatever it is that you're doing."

Kevin Dowling
Head of Partner Solution Engineering
for EMEA and APAC, Stripe

FIGURE 3

What matters most?

Better customer service and instant money transfers could compel consumers to move their primary accounts.



Q: What would make you switch where you keep your main savings or deposit your salary?

Note: The importance score measures how frequently a specific feature stands out as either very important or not important at all compared to other features. If a feature is frequently highlighted as very important, it suggests that it plays a significant role in influencing choices or preferences. On the other hand, if it's often seen as not important, it likely has a smaller influence.

The great payments divide

The world is digitally divided. In other advanced and emerging economies, mobile wallets are the primary method for making purchases in person, meaning at a physical location such as a restaurant or a department store (see Figure 4). In addition, mobile wallets are becoming a leading method for online transactions, such as shopping or paying the bills.

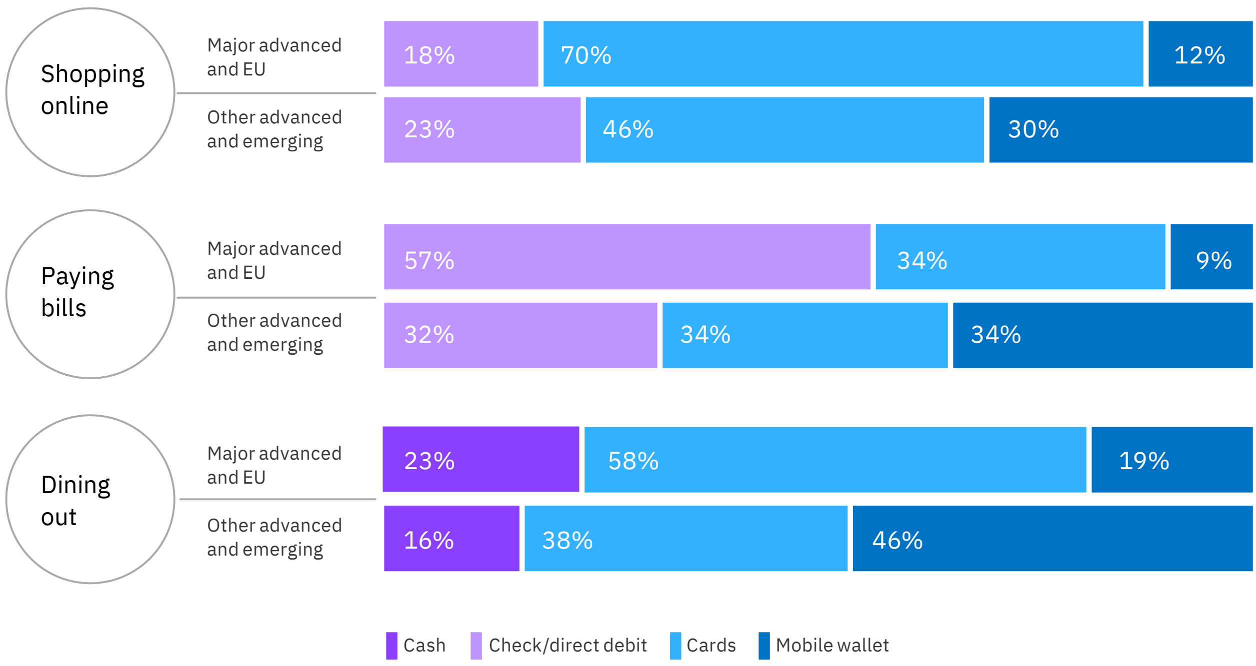
Conversely, in major advanced economies and EU member states, plastic cards and more traditional banking methods, such as direct debits, dominate. Digital wallets are making relevant inroads, but progress is slower.

How consumers spend money while dining out highlights some key payment trends. For example, those in Germany (48%) and Japan (33%) use cash for dining out most often, while China (68%), Thailand (63%), and India (53%) lead the way with mobile wallets. US consumers use plastic cards (72%) most frequently, followed by those in Sweden (71%), which is among the top three cashless countries for dining out. In-store shopping (not featured in the figure) follows a similar trend.

FIGURE 4

Show me the money

Consumers prefer different payment methods in different scenarios and economies.



Note: The regional labels "major advanced economies and EU member states" and "other advanced and emerging economies" align with groupings created by the International Monetary Fund.

Things shift when payments are made online. Paying bills happens primarily through direct debits to bank accounts in major advanced economies and EU member states, while the Chinese are already on the digital wallet track (50%). This is the preferred European method, particularly popular in Germany (76%), Spain (65%), and Sweden (64%). Online shopping is where plastic cards shine globally, with 86% of Americans, and 82% of the British preferring this option.

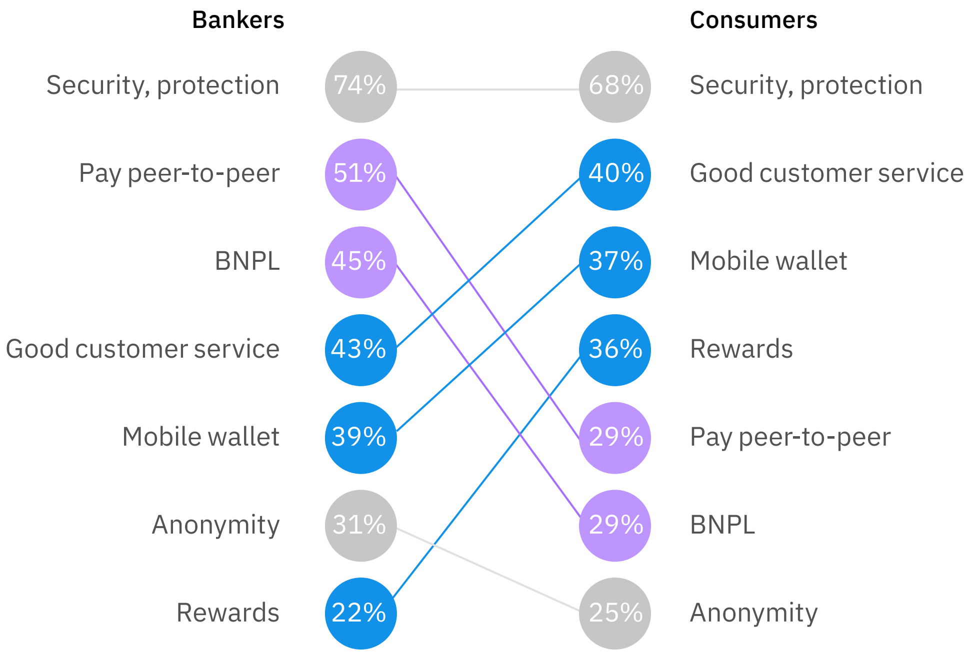
Amidst all these shifting preferences, both regionally and globally, do bankers truly understand their clients' expectations? Our research reveals a troubling gap (see Figure 5).

Banks overestimate the role of peer-to-peer money transfers and buy now, pay later (BNPL). They underestimate the importance of mobile wallets and the draw of personalized rewards. Good customer service is also a priority for clients, but bankers see it as relatively less important compared to other factors. This is an area where generative AI can add value by boosting the quality of digital client interactions (see case study, "Large global payments company turns complaints into actionable insights with generative AI," page 14).

FIGURE 5

Mind the gap

Banker perspectives on client priorities don't align with client needs.



Source: Consumer question: Which of these payment features is the most important to you? And which is the least important? Executive question: Which of these payment features is the most important for your clients? And which is the least important?

Case study

Large global payments company turns complaints into actionable insights with generative AI[11]

A global payment company sought to improve its customer service processes leveraging generative AI. Previously, millions of customer complaints, across thousands of products, were categorized manually into broad groups. The scale of the process for complaint analysis was time-consuming, error-prone, and unresponsive to emerging issues. Three weeks were needed to produce actionable insights, yet this was inadequate for trend spotting. This reduced customer satisfaction and prompted the need for compliance reviews.

By adopting a generative AI model with more than 100 million parameters, the company was able to overhaul this inefficient process. The model was trained on public banking datasets and integrated securely into the company's infrastructure. Reinforcement learning with human feedback (RLHF) was employed to align the model to proprietary context and products.

As a result, the time to complete compliant analysis was cut from three weeks to under 15 minutes, at the same time improving the granularity of categorization with 91% accuracy. Furthermore, generative AI enabled the extraction of keywords, summarization of call notes, and identification of intents—leading to a better quality of customer service.

Consumer demands vary across product lines

Payments aren't the only financial service consumers access online. They receive plenty of offers to apply for credit, invest savings, or buy car insurance. And the factors that most influence decisions vary by solution.

Personal loans

Consumers care more about brand reputation and current banking relationships, assuming equal lending rates are applied, a likely advantage for traditional institutions. In fact, there's a 21% greater chance that a better brand will sway a consumer's decisions when choosing a bank (see Figure 6).

But access to online or mobile applications also influences consumer decisions—and 63% of respondents globally who applied for a personal loan to finance a large purchase started the process online. The number of online applications soars to 76% in China, 75% in Brazil, 72% in Thailand, and 70% in the UK.

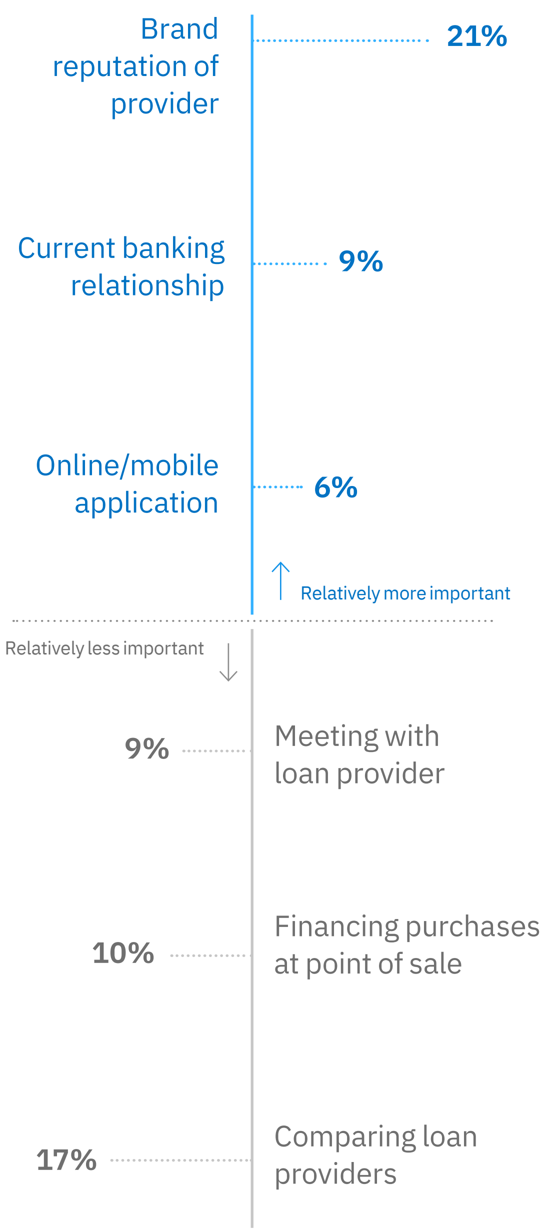
"If you think about embedded lending, third-party platform providers don't want any client to get declined [...] Providers on the one side, and banks on the other side, will have different levels of risk appetite which defines if and how they can participate."

Jasjyot Singh
CEO, Consumer Lending, Lloyds Banking Group

FIGURE 6

Reputation is everything

When applying for a personal loan, consumers prioritize known brands over the ability to compare terms and conditions from different providers.



Q: Imagine you need a loan for a large purchase, what's most/least important to you?

Note: The importance score measures how frequently a specific feature stands out as either very important or not important at all compared to other features. If a feature is frequently highlighted as very important, it suggests that it plays a significant role in influencing choices or preferences. On the other hand, if it's often seen as not important, it likely has a smaller influence.

Investing

Assuming equal costs when making investment decisions, investors care more about working with recognized brands. Talking to a financial advisor is also a significant factor. In fact, there's a 27% greater chance that this feature will influence them to make an investment decision (see Figure 7).

They are also impacted by access to planning tools and existing banking relationships. Online influencers are least relevant. Once a decision is made, 69% of those who made a financial investment in the last three years did so online.

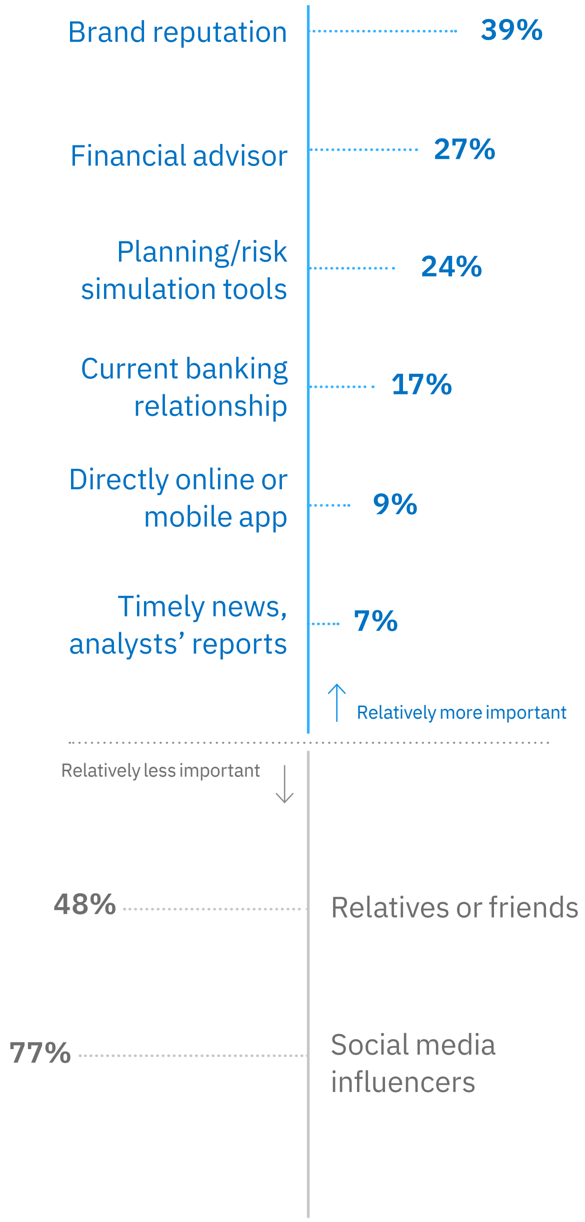
"A successful ecosystem mindset requires transparency, security, and data-sharing for customer benefit. Banks must understand the value proposition for all ecosystem participants and align it with customer needs."

Arvid Swartsenburg
Head of Digital Strategy and Transformation, UOB

FIGURE 7

A personal touch

Consumers want recognized brands and expert advisors when making investment decisions.



Q: Imagine you were making a financial investment, what's most/least important to you?

Note: The importance score measures how frequently a specific feature stands out as either very important or not important at all compared to other features. If a feature is frequently highlighted as very important, it suggests that it plays a significant role in influencing choices or preferences. On the other hand, if it's often seen as not important, it likely has a smaller influence.

Car insurance

More consumers are focused on the claims experience and a strong brand reputation, assuming equal premiums. In fact, there's a 44% greater chance that a good claims experience will sway their decision in favor of a specific insurer (see Figure 8).

Most also buy or renew car insurance online, but 42% globally still want to speak to an agent on the phone or in person. A larger majority of consumers in the UK (73%) and China (72%) buy or renew online, while 59% of Spanish respondents and 44% of those in the US still favor dealing with an agent.

A frictionless future

Embedded finance gives institutions the chance to pull the levers that matter most to financial clients. It lets brands with strong reputations connect with consumers—wherever a financial need arises—by offering a frictionless and intuitive user experience. But what is the real opportunity on the table? And how must financial institutions evolve to take advantage of it?

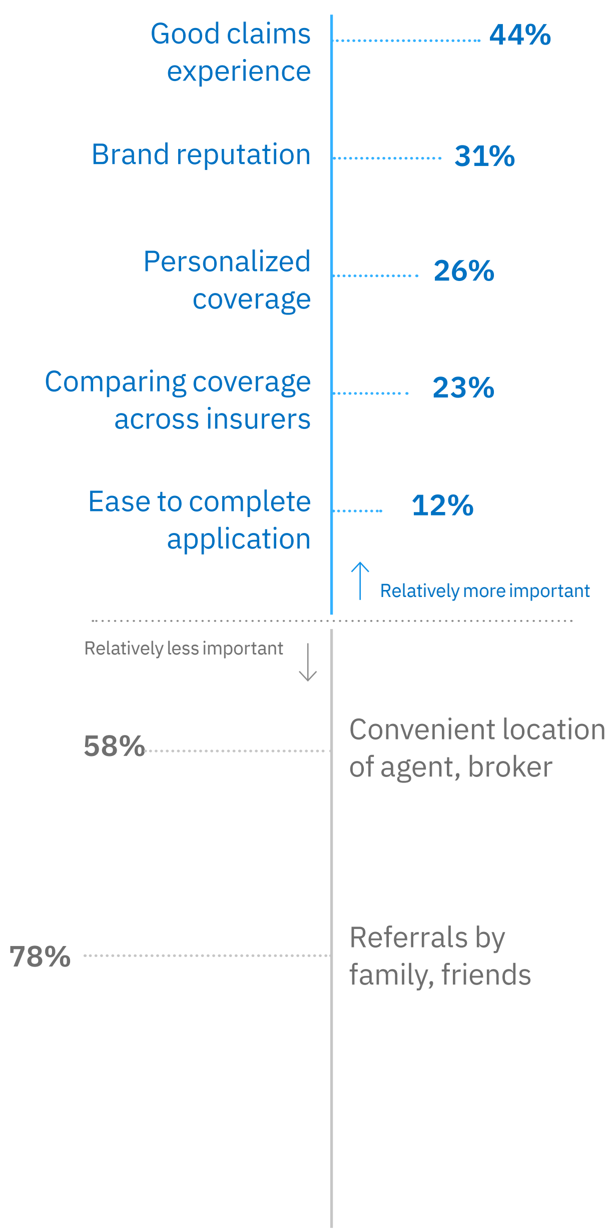
"We totally shifted the paradigm. Instead of embedding insurance in cars, we did the opposite: we embedded cars inside our insurance business."

Giacomo Lovati
Chief Beyond Insurance Officer, Unipol

FIGURE 8

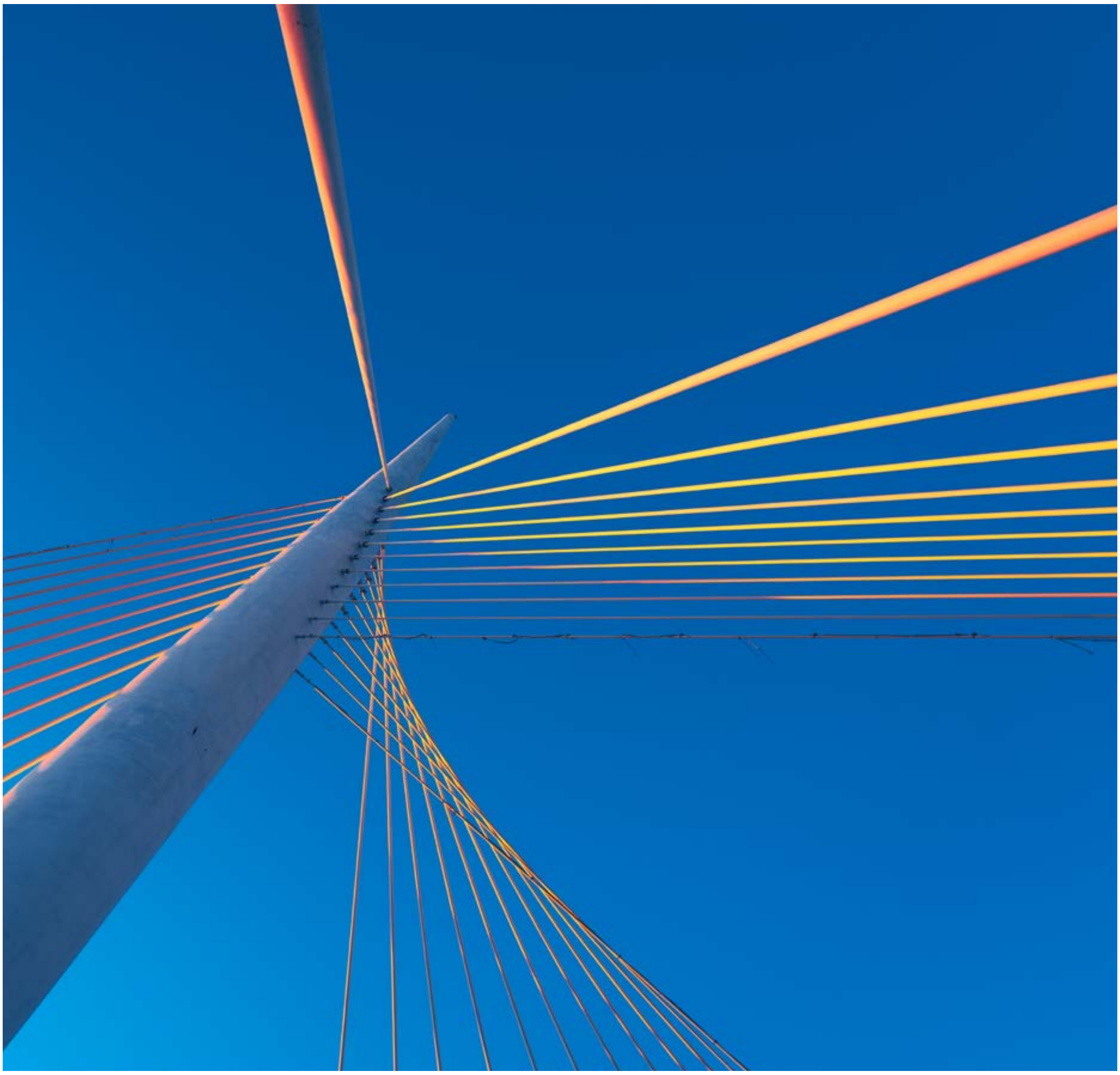
Cashing in on confidence

Consumers seek out auto insurance providers they can rely on in their time of need.



Q: Imagine you needed to buy or renew auto insurance, what's most / least important to you?

Note: The importance score measures how frequently a specific feature stands out as either very important or not important at all compared to other features. If a feature is frequently highlighted as very important, it suggests that it plays a significant role in influencing choices or preferences. On the other hand, if it's often seen as not important, it likely has a smaller influence.



"Technology-only solutions will never be enough; your architecture must be synonymous with a clear business product taxonomy."

Steve Hagerman
CIO, Consumer Technology, Wells Fargo

Is embedded finance more than hype?

Financial institutions face unique hurdles to participating on the platforms that host relevant client journeys. They must navigate regulatory requirements, traditional technology architecture, and fragmented lines of business that have historically limited ecosystem collaboration. Overcoming these barriers is possible, but to justify the time and energy it will take, bankers need to know: is embedded finance the real deal or is the industry just caught up in the hype?

Although not all banks are advanced enough to succeed on the platform economy, our research shows that one in four executives already agree that embedded finance is core to the bank's strategy. And 20% of respondents say they are already live with solutions, with those in other advanced and emerging economies ahead those in major advanced economies and EU member states (24% versus 18%).

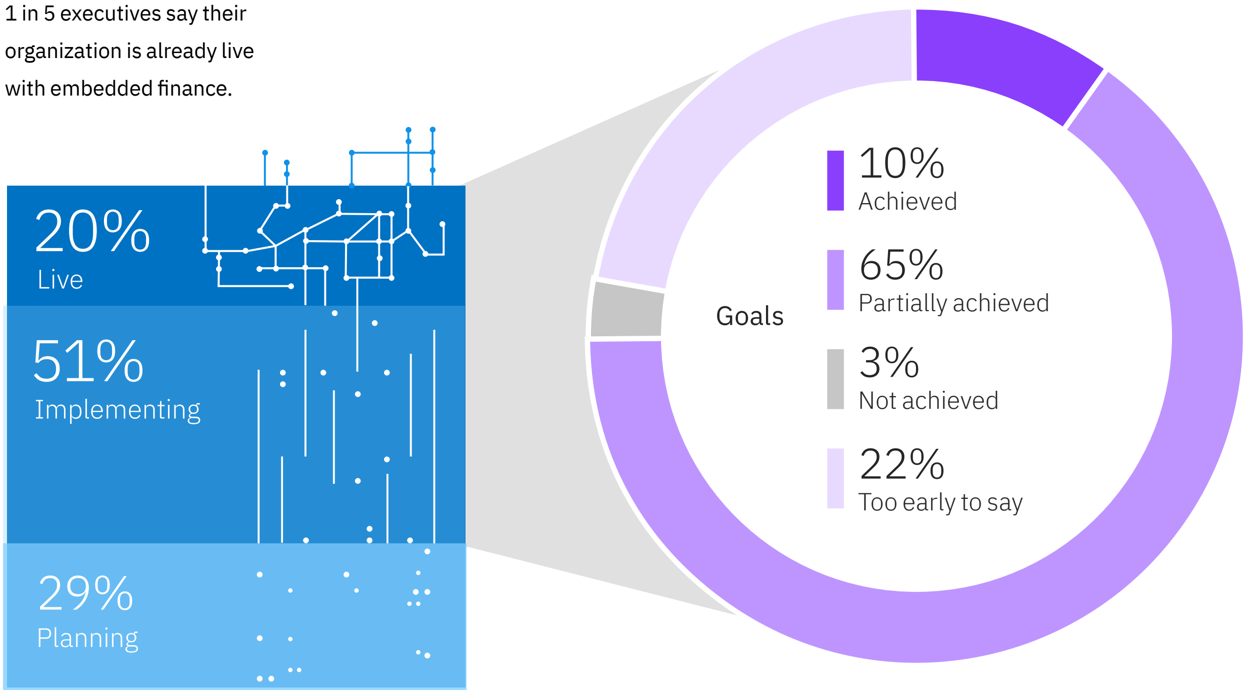
While many institutions remain in the planning stage, implementation has broadly begun. Overall, 71% of executives say their institutions are active in the embedded finance space, and 65% of those respondents say they have seen intermediate results. 10% say they've achieved the goals set at the start of the journey—and 22% indicate it is too early to say if goals will be achieved (see Figure 9).

Increasingly, banks are recognizing that in a world of margin compression and digital disruption, embedded finance can improve financial performance and efficiency ratios, tapping into new revenue streams and enhancing customer engagement. Still, our research demonstrates that it takes about six years, on average, for banks to realize the first benefits from embedded finance strategies.

FIGURE 9

Gaining ground

1 in 5 executives say their organization is already live with embedded finance.



Q: Which statement best describes your organization's approach to embedded finance? Have you achieved your goals with embedded finance?

Getting there requires a comprehensive assessment of organizational readiness, a flexible roadmap for implementation, and strong partnerships in non-financial ecosystems (see Perspective, "The main players in the platform economy," page 22). Institutions are focused on several key priorities and opportunities:

Regulatory compliance: EU and UK open banking regulations, as well as similar frameworks from other jurisdictions, mandate that banks allow third parties to collect a set of permissioned client data through secure APIs. In this context, banks limit the deployment of APIs to what is strictly required. This approach comes with limited revenue potential because institutions only act as a compulsory conduit for transactional data.

Direct client integration: In this case, legacy host-to-host connection methods are replaced with API calls to boosts efficiency. Direct API channels are developed to simplify data-sharing and interfaces with specific external parties, typically large corporate clients.

API markets enablement: This technology-led play lets financial institutions integrate a broader range of products and services and systemizes the approach to connectivity for virtually all third parties in a B2B2X ecosystem, whether it's business to business to clients (B2B2C) or business to business to businesses (B2B2B). Keeping API access simple—and making it easy to onboard compliant third parties—encourages more external participation on the platform. However, this approach isn't always driven by a clear business strategy.

"Funding and development of embedded finance will only materialize if we seriously consider the changing behavior of our clients and therefore the change in people's skills."

Carmela Gómez Castelao
Head of Open Banking, BBVA

Partnership banking: On this path, B2B2X business models and use cases are co-designed around key client journeys, with third parties owning the final engagement. The API consumer becomes a strategic partner as they work together to reduce friction for improved client engagement. This is particularly relevant when institutions engage with strategic fintech companies or large partners with sizable commercial power (for example, big tech or major e-commerce players), demanding fast co-creation and development.

Some banks are even looking beyond their own operations, providing services to third parties in new ways:

Banking-as-a-service (BaaS): These financial institutions go beyond powering individual use cases. They provide a core banking platform to various entities, including large corporations, neobanks, and small institutions. These third parties offer financial products and services under their own brand name, but use the infrastructure and licenses of the partnering bank. A dedicated legal entity is usually created as a full IT service provider to further monetize investments.

Platform orchestration: This is a very entrepreneurial investment. A new venture is created to secure the necessary financial and human resources to construct, implement, and manage a digital platform—giving the institution control of the user engagement model. The originating bank owns financial services and partners with the new platform to embed its services. Best done through APIs, integration can follow more direct approaches when the new entity is a wholly owned subsidiary. New revenue opportunities can be harvested on top of underlying financial transactions, highlighting the overall value produced by ecosystem orchestration.

While each path comes with its own twists and turns, they all require some level of integration—sometimes more than the existing architecture can handle. As banks work to enable more flexible interactions and adopt exponential technologies such as generative AI, they need to develop a strong technical foundation that enables both security and speed.

Perspective

The main players in the platform economy

Embedded finance connects banks with clients inside third-party user journeys. Financial institutions add value to the customer experience by eliminating friction in user interactions (such as personalized micro-lending) and enriching the journey with complementary services (such as rounding purchases spent to the nearest dollar and funding ESG initiatives with those extra cents). Although multiple roles can exist in different ecosystem value chains, three main players are referenced in this research:

Orchestrators own the platform. They enforce governance, organizing rules around access, permitted engagement, and partner permissions. While platforms are typically born outside the realm of financial services, financial institutions can also set up dedicated entities to build and oversee non-financial journeys.

Partners are the providers of products and services on the platform. Partnerships can take different forms, some tightly integrated with the orchestrator's business model, others only loosely providing complementary value. Typically, financial institutions partner to provide key features, such as instant payment methods, know your customer and anti-money laundering processes, and insurance coverage.

Users are parties exchanging value on the platform. They can be consumers of services on the platform or contributors, sometimes switching roles as they do on second-hand marketplaces. In the context of this research, users are generally consumers of commercial products or services (such as airline tickets, agriculture crops, or doctor appointments) or clients using financial services (such as payment methods, financing of purchases, or travel insurance).

Where can banks remove friction to accelerate transformation?

Traditional banks are built for security and reliability—characteristics that can be at odds with flexibility and speed. Yet, as neobanks and digital banks continue to crowd the competitive landscape, financial institutions need to find ways to move faster. In the platform economy, slow and steady doesn't win the race.

Bankers know this, which is why many institutions have already deployed or are in the process of implementing embedded finance solutions. But the journey is long. Persistent pain points, such as inflexible legacy systems, siloed and inefficient operating models, a shortage of in-demand technical skills, and a lack of long-term investment, continue to impede the path to innovation.

The connected nature of embedded finance introduces a host of new hurdles, as well. Shifting from a closed organization—where the manufacturing and distribution of financial products are strictly managed—to a more open organization—where products are embedded into a partners' client journey—limits the bank's control of user experiences and client relationships. This requires strategic thinking and operating models to pivot toward clearer ecosystem collaboration based on shared goals, success factors, and incentives.

However, when we asked banking executives which challenges have had the most adverse effects on their embedded finance strategies—we found the issues were often foundational (see Figure 10). Insufficient modularity of core banking systems (53%), inadequate API standards (52%), and lack of funding commitment for long-term strategies (40%) are the top constraints holding banks back.

A modern business architecture is a precondition for any digital strategy.[12] But embedded finance requires banks to interlock with external entities and platforms—which puts openness and flexibility at the core (see Perspective, “The role of open technologies in embedded finance,” page 28). That’s why a combination of technical modularity and industry standards are essential for success.

We found that more than 60% of executives are focused on four primary ways to add value with industry standards:

Build faster (64%)
Standards accelerate ecosystem building and bank-partner integrations.

Maintain better (64%)
Standards reduce development and maintenance costs, because APIs can be reused.

Integrate faster (60%)
Standards improve the partner’s experience during banking API integrations.

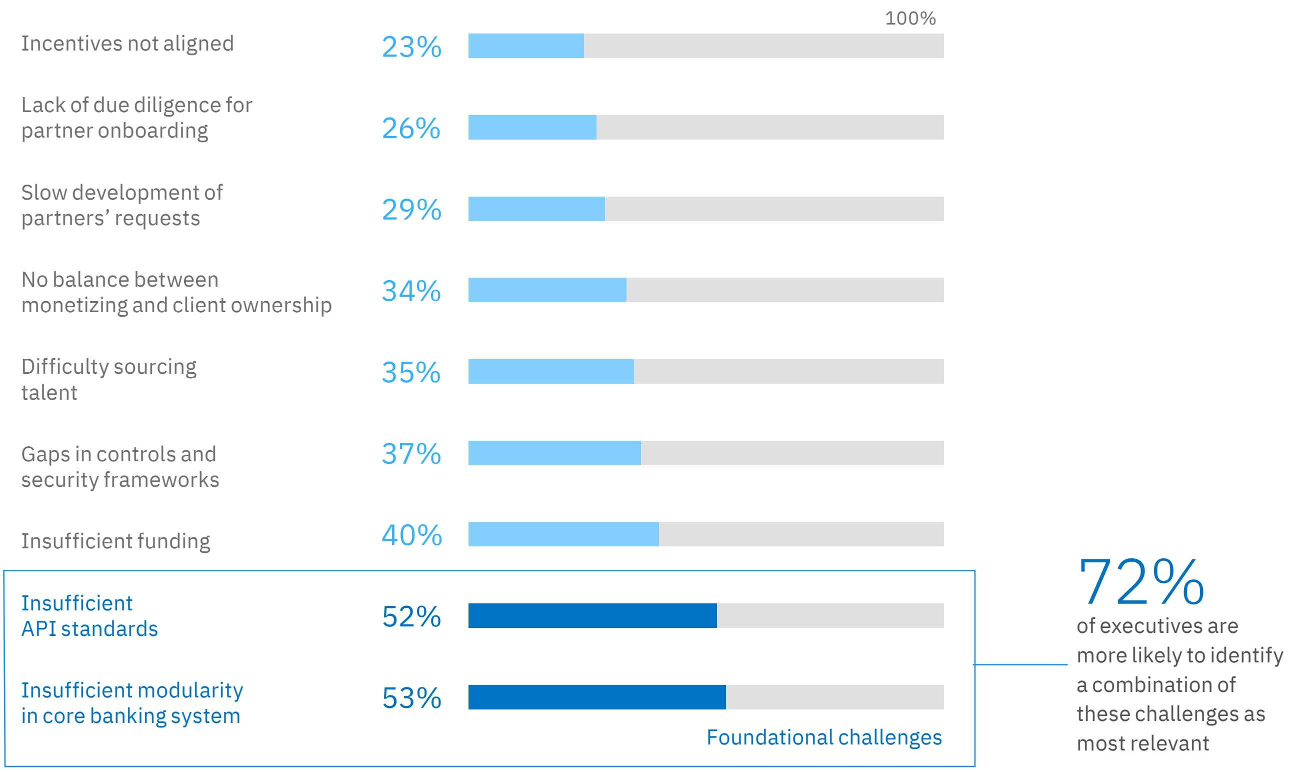
Manage better (58%)
Standards make it easier and less complex for banks to focus on higher value when deploying embedded finance.

Banks that are still struggling with foundational elements might not have the bandwidth to focus on the more advanced factors that drive competitiveness and success. But addressing strategic stumbling blocks, such as misalignment between internal and external partners, due diligence gaps for onboarding, and sluggish use case development, is necessary to transform partner relationships (see case study, “Scalable foundations for an API platform to rapidly expand open banking partnerships,” page 25).

FIGURE 10

Back to basics

When comparing challenges, bankers are most concerned about foundational technical issues.



Q: Which challenge has had the greatest/least adverse impact on your embedded finance journey?

Case study

Scalable foundations for an API platform to rapidly expand open banking partnerships[13]

UK-based fintech Banfico provides a cloud-compatible open banking platform to enable financial institutions to comply with international open banking regulations and innovate through the aggregation of APIs. The regulatory mandate and the implementation need to support customer identity and strong customer authentication, data security, and payment processing compliance aligned with the strictest industry standards.

Banfico initially built the platform on a virtualized environment for its European market. However, the architecture needed at least 25 minutes of downtime and expensive management governance processes to launch new releases, hindering high availability and scalability.

To build services at the pace of demand, and deploy workloads to a secure production cloud environment, Banfico sought to adopt a managed enterprise application platform capable of running a single global platform for all its markets—Europe, the Middle East and LATAM.

The newly flexible, yet stable and security-focused, cloud environment enables Banfico to rapidly build new applications with self-service provisioning and deploy workloads to a secure production cloud environment. Application delivery times have been reduced to near-instant deployment with enhanced security and automated compliance with industry standards. Additionally, the hybrid flexibility of a vendor-agnostic container platform lets Banfico deploy to other cloud providers as needed to meet customer requirements—all under central, pay-as-you-go pricing.

As a result, Banfico has accelerated its expansion of open banking partnerships.

“The success of achieving interoperability will rely on the collaboration and alignment of all involved parties, considering the standards, technology, and the alignment required for seamless information exchange.”

Quek Sin Kwok
Chief Digital Officer, Raffles Medical Group

Not only was this reflected in our survey results, but also in our one-on-one conversations with banking executives globally. These conversations revealed several strategic embedded finance priorities, which we will highlight in depth in our upcoming compendium, *The voice of the makers.*

From a high level, we see three factors that determine whether an organization will succeed in the embedded finance landscape—changes that business lines, technology teams, and risk and compliance officers will need to address as a united front.

Core banking is more modular.

External partners demand that institutions understand their unique client journeys to help ensure a custom user experience in a competitive market. Because client journeys are rapidly evolving, banks must be able to activate and suppress core services to fit specific use cases as new needs and compliance requirements arise. Modularity enables banks to quickly plug into different areas of the non-financial ecosystem without disrupting operations (see case study, “The flexible foundation for coreless banking,” page 27).

It’s not technology *or* the business. Technology *is* the business.

Bankers are no longer buyers of technology. They are now selling embedded finance services. This demands a support function that can quickly and seamlessly interact with the core banking system—while still maintaining necessary restrictions and controls. Banks can tap partner support teams to act as the initial client touchpoint by providing permissioned and direct access to core systems data. Alternatively, dedicated bank support teams can fill this role.

Banks have visibility beyond their borders.

Openness fosters innovation and allows institutions to tap into new markets and customer segments. However, this comes with a host of challenges related to control, security, and compliance. Take for example, entrusting partners to keep data safe when clients open accounts through third-party interfaces and channels. Banking regulations require robust due diligence, both at the onset and throughout a partnership. A unified control framework can provide a consolidated view of individual client transactions, anywhere they originate. This not only allows better monitoring to meet anti-fraud and money laundering requirements, but also provides richer client insights that can inform more targeted personalization.

In embedded finance ecosystems, a competitor can become a complementor of financial solutions. Corporate clients can become partners who offer embedded finance solutions. However, to succeed in a shifting landscape, setting the right operational targets is crucial.

"What language do we all want to speak together? We don't want to just speak a common language internally; we want to be able to speak a common language externally with the service providers. And if we think about open banking and all the reasons why we are going to be able to interact with other third parties, it makes sense for us to go with an industry standard."

Gina Stille
Vice President Business Architecture,
TD Bank

"I would distill everything into speed. To be fast you need to be much more thoughtful, and that's where the concept of architecture comes in."

Lawrence Wan
Chief Architect and Innovation Officer,
BMO Financial Group

"Selfie. Selfie is the only word that is the same across the globe in all spoken languages. The nut to crack is to build a common language across the enterprise."

Timothy Ness
Vice President, Senior Manager,
Digital and Open Banking, JPMC

Case study

The flexible foundation for coreless banking[14]

South African ABSA recognized the imperative to refactor existing services by adopting a modular architecture based on microservices to integrate fintech services into new digital channels swiftly. ABSA unlocked value through a business-oriented architectural framework based on common, semantic language that simplifies the integration patterns to connect, compose, and reuse modular business functions.

ABSA's new digital foundations allow a streamlined development process for coreless banking, providing a consistent environment for containerized digital services to quickly meet the needs of the business as it evolves. Certified partners and third-party solutions can be incorporated to readily extend customer journeys on an open platform using cloud-native tooling.

Perspective

The role of open technologies in embedded finance

Banks are a single, yet essential, node in expanded and interconnected ecosystems. But to succeed on the platform economy, financial institutions need to embrace open innovation—a new way of working that asks bankers to embrace a new mindset.

Open technologies enable tools and techniques that enrich business propositions while helping maintain secure and resilient embedded finance operations. Given the openness these operations require, security must be a focal point in the early stages of the development processes. But it’s not the only factor to consider. Here are four imperatives for technology leaders as they transform their architecture and operations.

Reimagine experiences: As clients demand hyper-personalized financial services, delivered when and where they need them, AI infuses operations with insight for automated, instant fulfillment. Enhancing the employee experience is also vital to improve overall customer satisfaction.

Environmental, social, and governance (ESG): As financial institutions adopt new engagement models, ESG remains a top priority. Compliant embedded finance strategies demand accurate, granular data analysis for reporting and optimal consumption beyond banking. Banks are also leveraging ESG propositions for differentiated client engagement, such as helping clients measure the carbon footprint of purchases they make.

Resilience: Embedded finance requires 24x7 platform availability. However, 37% of executives report that gaps in control and security framework pose a major challenge when executing embedded finance strategies (see Figure 10). API services must be protected against cybersecurity attacks. Workflow portability is necessary to mitigate cloud provider concentration risks. Data and processing sovereignty has also become a crucial requirement.

Transform and modernize: More than half of executives highlight insufficient modularity in core banking systems and inadequate API standards as top challenges. Modernization is more extensive than an IT maintenance issue. It is about unlocking the value that comes with new ways of thinking and working through the “platformization” of IT operations. In turn, this accelerates time-to-market for new ecosystem-driven business solutions.

“What matters is the time-to-market, which is monitored very carefully. That means finding not only the best technical solution but also the partner capable of accompanying integration and development quickly”

Giovanni Vattani
Global Customer Operations, Enel

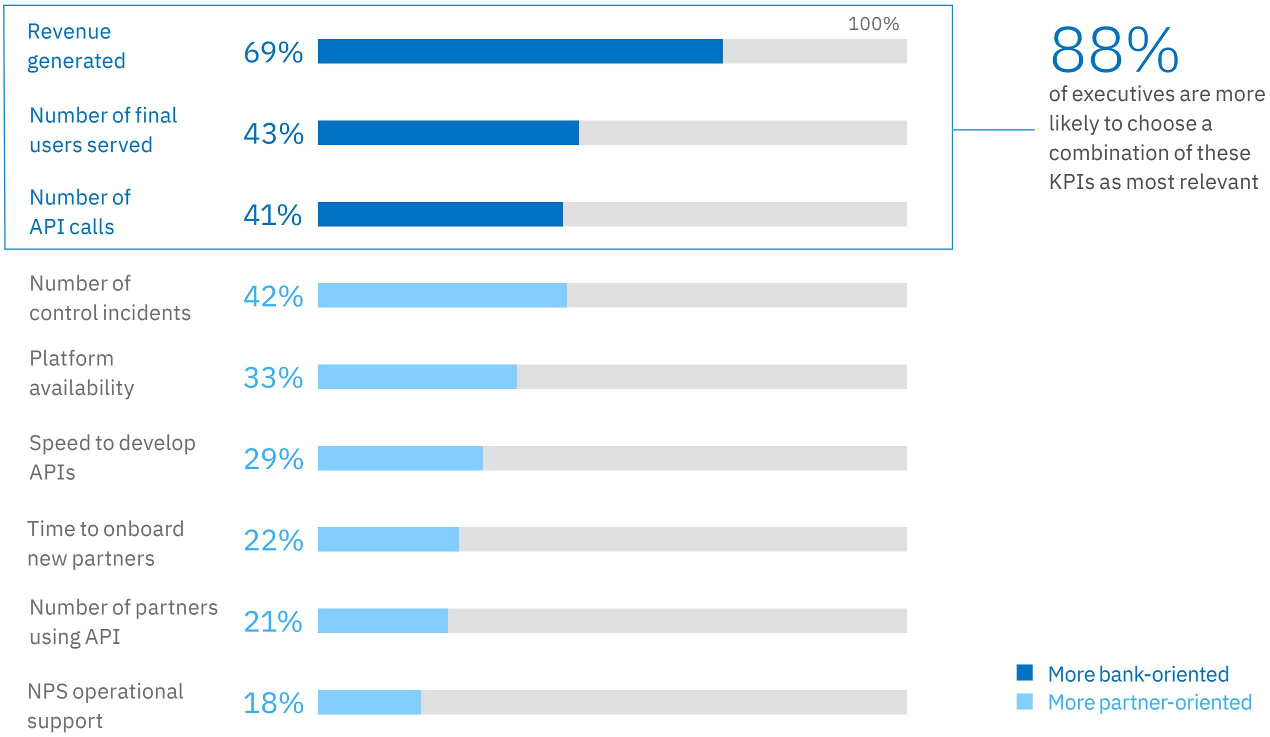
So how are banks measuring the success of their embedded finance strategies? Clearly, revenue generation comes first (see Figure 11). Looking down the list, however, we see that bankers tend to prioritize inward-looking KPIs over those that are more ecosystem oriented.

Defining metrics that represent partners’ satisfaction—particularly related to unified API services and partnership banking—focuses innovation on shared value. Ultimately, partner success is what drives more embedded finance revenue for banks. Yet, bankers see elements that drive competitive advantage for service partners as less immediate. In our one-on-one interviews, these partner-oriented measures were emphasized.

FIGURE 11

Walk in their shoes

Bankers are neglecting the partner-oriented KPIs that enable embedded finance strategies.



Q: Which KPI is the most / least important for measuring the success of embedded finance in your organization?

“Focusing on customer relationships means understanding the needs of clients holistically […] Solving their needs holistically means going beyond financial services because they don’t wake up dreaming of a mortgage, they wake up dreaming of a new home.”

María Cristina Arrastía Uribe
Business Vice President, Bancolombia

When we look at the needs of non-banking third parties, adequate operational support, easy onboarding of BaaS solutions, rapid API development, personalized consumer journeys, and 24x7 platform availability are top priorities. But less than 30% of banking executives say these KPIs are important.

Bankers must adapt business strategy and expectations to make banking capabilities consumable at scale within external ecosystems. As the value chain gets disrupted, the definition of value itself must change. Bankers can look even further beyond banking to gain a competitive edge. Some financial institutions are already working to become ecosystem orchestrators. This will require a fundamental change in mindset from the CEO down—and a new view of where the most lucrative opportunities lie.

How can banks elevate their role?

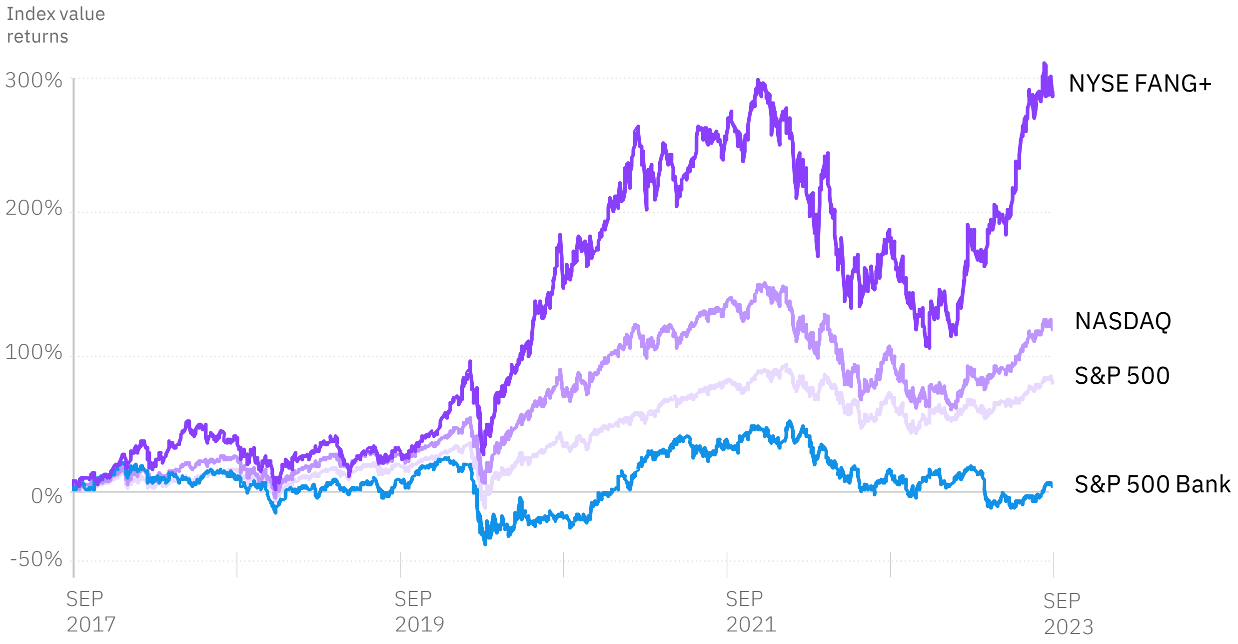
Financial institutions have historically delivered business value through their distribution channels. In this traditional model, banks focus on using branches, online banking portals, and mobile apps to expand their reach and drive growth.

Bankers are now presented with a new, more ambitious opportunity. As they see market performance of platform-based businesses skyrocket, many are wondering how their financial institutions can reach even further beyond banking to get a larger piece of the pie (see Figure 12).[15]

FIGURE 12

The rise of the platform economy

Technology and tech-enabled companies now consistently outperform their peers.



Source: S&P Global and IBM Institute for Business Value.

Note: The NYSE FANG+ index currently consists of 10 highly-traded growth stocks of popular technology and tech-enabled companies. The index is equally weighted and includes the five FAANG stocks – Facebook (Meta), Amazon, Apple, Netflix, and Google (Alphabet) along with Tesla, Ali Baba, Bidu, Nividia, and Twitter (prior to delisting).

To see where bankers anticipate the biggest boost, we asked them which embedded finance opportunities they expect to deliver the most value. Many agree that launching a non-banking platform-based business model—and leading the charge within the ecosystem—would be the most advantageous path forward.

57% of executives say banks can get the most value from directly orchestrating retail- or small-to-medium enterprise (SME)-oriented ecosystems. The least appealing opportunities involve embedding finance into gaming platforms (33%), acquiring new market segments by embedding SME lending into merchant ecosystems (28%), and embedding banking capabilities into corporate clients' treasury operations (27%).

Clearly, bankers prefer to orchestrate their own platform. But are they ready? This involves establishing relationships and aligning goals with partners, managing resources and communications across the ecosystem, and driving innovation to achieve shared objectives. It's no small feat, and not every opportunity is created equal.

To pinpoint where bankers see the greatest potential to elevate their role, we also asked them to identify the non-financial ecosystems that seem the most promising for embedded finance strategies (see Figure 13). We asked them to select and then prioritize industries by relevance, painting a picture of where they anticipate embedded finance will deliver the most meaningful returns for the bank. Among the most selected industries, executives showed a preference for five ecosystems:

1. Consumer industry
2. Manufacturing/Industrial products
3. Healthcare
4. Education
5. Telecommunications

The consumer industry is the most selected and prioritized opportunity. Banking executives recognize the growth of the online retail economy and are looking for ways to improve performance by embedding payment solutions and consumer lending offers with e-commerce partners. Manufacturing supply chains are also identified as a key opportunity for corporate clients. This is an area where embedding corporate banking solutions inside large trade-finance operations can eliminate friction.

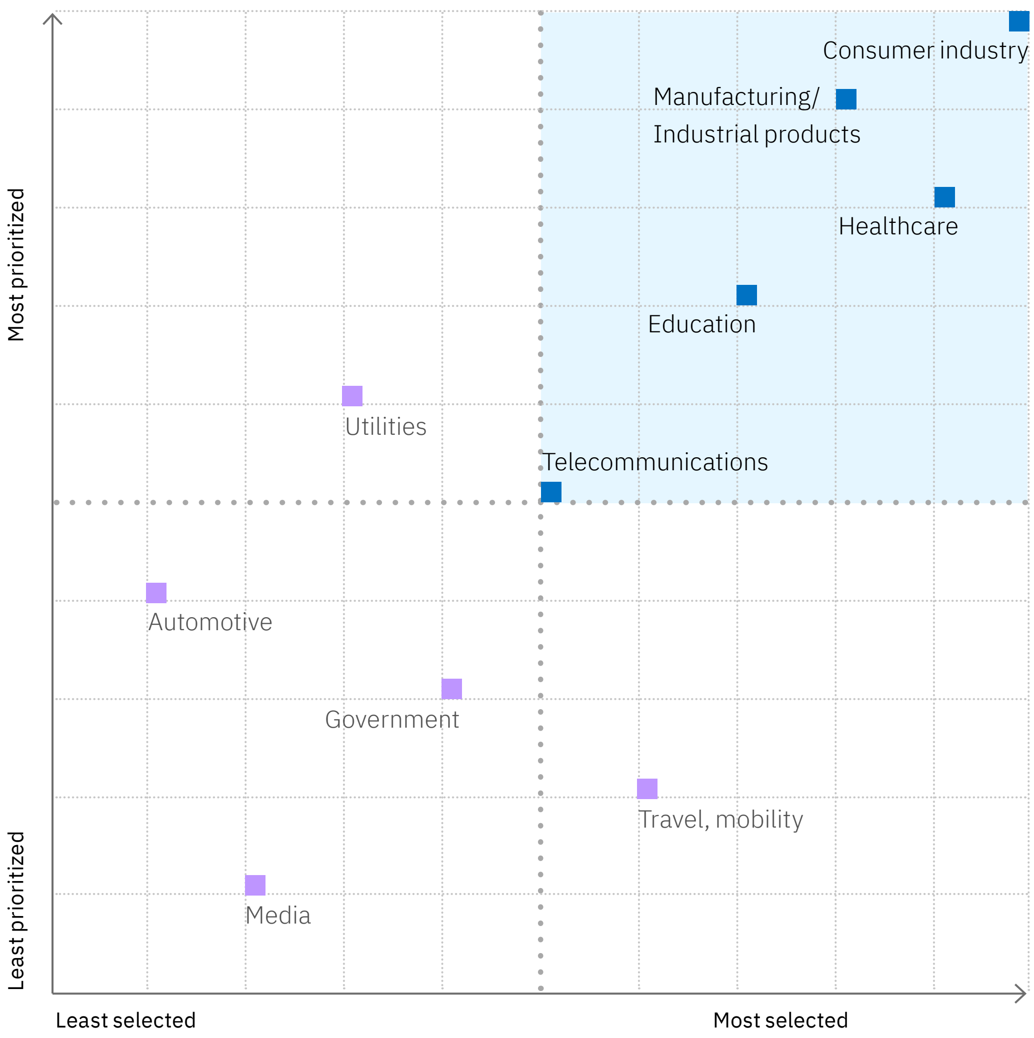
As the population ages and health care spending soars, embedding financial services can ease the funding gap for medical treatment and improve insurance coverage. Another strategic entry point is the education industry, where banks can engage with consumers early in their life for financial wellness. This is a significant opportunity to establish relevance in consumers' digital lives as the way people access financial services continues to evolve.

The digital economy is largely developing on mobile. These digital interactions position telecom operators as a source of more enduring client relationships that can strengthen a bank's digital presence and relevance to consumers. Mobile access is becoming a primary need, on par with the most basic necessities. How reliably consumers pay their telecom bills also offers insights into credit quality that can help financial institutions manage the risk of micro-lending.

FIGURE 13

Beyond banking

Bankers rank industries by top ecosystem opportunities for embedding finance.



Many financial institutions are already taking advantage of opportunities to meet consumers at the intersection of financial services and other industries.

In 2017, for example, the State Bank of India (SBI) launched a platform geared toward consumer products engagement. YONO ("You Only Need One") is a super-app that collaborates with a wide range of partners—including retail giants such as Amazon—to create a unified and frictionless journey for users. Instead of navigating separate platforms for banking, shopping, and other services, users in India now have a one-stop-shop that caters to virtually all their needs, creating a simple and cohesive experience (see case study, "An intelligent platform puts State Bank of India customers first").

In the agribusiness sector, Bradesco has created a unique platform to meet the specific needs of Brazilian farmers. By onboarding a diverse array of partners, they've formed an ecosystem offering farm equipment, fertilizers, logistics, advisory services, and much more. This platform breaks down the traditional friction points between these different value chains, enabling a seamless interface for farmers to access a wide array of essential services (see case study, "Bradesco unlocks ecosystem value with an agribusiness platform," page 35).

"Most banks still have very proprietary digital channels, limiting their ability to fully embrace embedded finance and collaborate effectively in the digital ecosystem on client events."

Sam Everington
CEO, Engine by Starling, Starling Bank

Case study

An intelligent platform puts State Bank of India customers first[16]

The State Bank of India (SBI), the largest public sector bank in the country for more than 200 years, wanted to create a single mobile app that merged services, products, and features while also integrating data across third-party products.
So, SBI created something more than a digital bank. It envisioned a comprehensive online platform with four pillars: a convenient digital bank, a financial superstore featuring investments and other financial services, an online marketplace offering lifestyle products from partners, and an overall digital transformation with analytics that connected these options end-to-end.

Called You Only Need One (YONO), the new platform was created to meet the growing need for digital finance, as well as the preferences of SBI's increasingly young and wealthy customers.
YONO boasts more than nine million daily logins and offers more than 100 digital customer journeys, offering an array of online banking, financial, and consumer options.

Case study

Bradesco unlocks ecosystem value with an agribusiness platform[17]

Agriculture and livestock are key pillars for the Brazilian economy, employing 15% of the workforce. According to economic research by the US Department of Agriculture, agribusiness accounts for 29% of Brazilian GDP when activities such as processing and distribution are included.[18] Hence, this ecosystem is a highly relevant space for embedding financial solutions that can unlock economic value through the elimination of friction in farmers' daily lives.

In 2023, Bradesco launched E-agro, a marketplace focused on the agribusiness sector offering financial and non-financial products and services to rural producers, customers, and non-customers of the bank. Developed in partnership with inovabra—Bradesco's innovation environment—and IBM, the platform works as a comprehensive business ecosystem for the different segments of Brazilian agribusiness.

In E-agro, the entire agribusiness chain will have available credit solutions for agricultural production, livestock, personal loans, and insurance modalities, as well as offering products such as machinery and equipment, agricultural management tools, and sustainability.

E-agro was born with partners representing some of the main categories of the agricultural machinery sector. The forecast is to gather more than 50 partners on the platform by the end of this year.

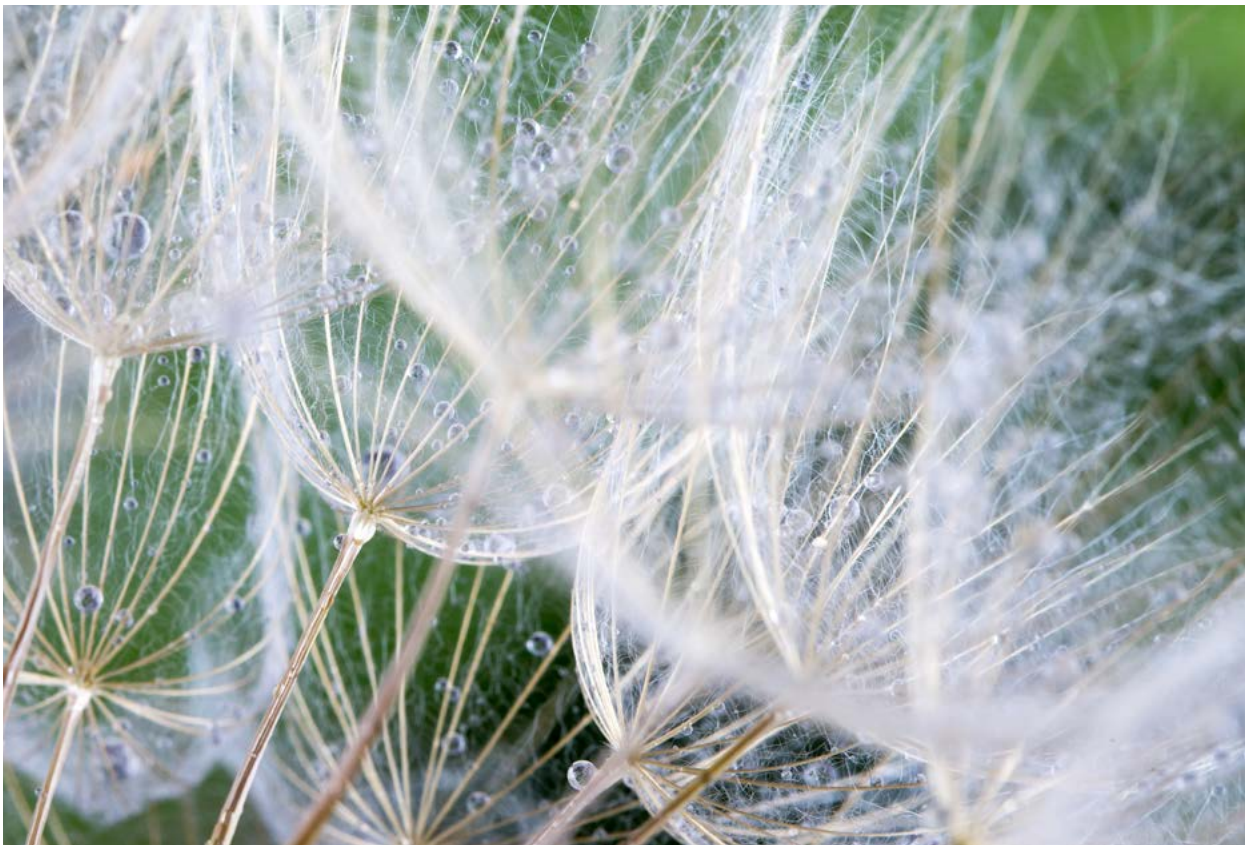
Bradesco, with more than R$100 billion invested in the sector, is the largest private bank in the granting of credit to agribusiness. "For us, the launch of E-agro is very representative. We have grown by granting credit to farmers and today we have a potential universe of more than two million rural producers in Bradesco, who are part of the chain of the Brazilian sector that grows the most," says Jose Ramos Rocha Neto, vice president of Bradesco.

"Farmers will have access to purchase products from the best brands in the market and finance them with exclusive rates. The demand of the producer for digital purchases has grown, and the E-agro arrives to meet this trend, to assist, foster, and promote greater profitability to the rural producer," says Nadege Saad, Head of E-agro.

While banks refine their strategies—weighing whether to offer APIs, partner with pre-existing platforms, or become direct platform orchestrators—super-apps are continuously expanding their footprint in other advanced and emerging economies. Big-tech firms also loom large as they consider launching operations in major advanced economies and EU member states.

A key feature of platform economies is that borders are blurred—not only between banks and other industry verticals, but also across internal verticals. Client journeys are hardly confined, which means value can be unlocked at multiple intersections. While transformation strategies invite institutions to start small, focusing on target verticals before they expand, architectural design must be horizontal from day one. As clients move across personal and commercial touchpoints, data is generated and insights can be calibrated to personalize experiences and offers.

In the end, embedding finance is about learning how to extend platforms and ecosystems across entire economies, connecting fragmented financial and non-financial worlds.



Action guide

Succeeding with an ecosystem-driven strategy

Banking solutions and business models must evolve to better match the needs of clients, operating seamlessly inside and outside financial services. Getting there will require close collaboration across the bank—and the entire ecosystem.

Technology leaders must spearhead the modernization of core banking systems and enable the data-driven insights that will allow business leaders to personalize offers and experiences for their clients. Regulatory authorities must foster a competitive environment that balances innovation with safety and security—helping banks learn how to change a tire while the car is still moving.

As for CEOs, they must champion a cultural shift. They must lead the organization on a multiyear journey, with long-term investment commitments, that aims to transform the bank's operating model, skill sets, and technology.

What will it take to deliver value and profitability that will be worth the initial cost? It starts with breaking down silos and driving a shift from product-centric to value-centric processes. This requires a new approach to:

– **Operations** (increasing efficiency and resilience)
– **Products** (simplifying for easier consumption on digital)
– **Partner support services** (bolstering distribution strategies)
– **Channels** (orchestrating user experiences).

How can each leader best play their part? Explore our action guide to see how executives across the bank can take decisive action and co-create the financial institution of the future.

CEOs
Invest in value

CEOs play the central role in leading the cultural transformation required to successfully envision and execute embedded finance strategies. They must:

- Hold senior leaders accountable for crafting a joint business and technology vision, committing to long-term funding, and creating common goals that bind all aspects of the business together.
- Promote a culture of innovation that values and nurtures creativity, forward-thinking ideas, and the unique viewpoints that can only come from diverse teams.
- Reorganize the institution through the lens of value. Create a value office that straddles IT and the business to drive the institution toward shared ROI targets, oversee major transformation initiatives, and reward achievements along the way.
- Ensure trustworthy AI. Promote a foundation of ethical AI to overcome privacy and cybersecurity obstacles.

Business leaders
Push beyond initial bets

Business leaders with roles in product strategy, operations, and innovation play a fundamental role in the successful execution of embedded finance initiatives. They must:

- Simplify financial products to facilitate integration of workflows into partner processes. Ensure integration points are user-friendly, adaptable, and can work with a variety of external platforms.
- Empower technologists with an active role in strategic business choices, enabling them to steer decisions in areas where business goals and technology capabilities need to be aligned.
- Build a playbook to unlock the power of partnerships, providing a guide that outlines the bank's embedded finance strategy, operational considerations, and shared performance indicators.
- Remove all data barriers across business lines to power privacy-compliant AI across the organization, enriched by ecosystem-derived data.

"Having the privilege to work with a brave and deeply strategic CEO and board fully committed to disruptive innovation, I must first recognize just how important having clear business sponsorship is."

Christoffer Malmer
Head of Embedded Finance, SEB

"An embedded finance strategy encompasses more than just technology. It also requires deep understanding of commercial elements, which must be in place as the technology is developed. Most of our 500 APIs lie on a simple commercial structure for external consumption."

Fernando Freitas
Head of Innovation, Bradesco

Technology leaders
Shift the architectural paradigm

Technology leaders play a critical role in shaping the new architectural era, co-creating the necessary foundation for embedded finance strategies with ecosystem partners. They must:

– Establish robust data architecture, governance, and operations to help the bank monetize the flood of data embedded finance will unleash.
– Progressively modernize core systems toward modular and flexible architectures for improved agility, scalability, and interoperability.
– Foster an engaging culture to evolve ways of working and secure talent through a blended approach of upskilling, reskilling, recruitment, and outsourcing.
– Promote the use of generative AI by defining a forward-looking economic model and deploying new technology that unlocks long-term funding and accelerates development.

Risk and compliance officers
Unlock the power of standards

Risk and compliance officers hold significant sway in promoting API standards and embedded finance use cases. They play a vital role in successful governance of embedded finance strategies. They must:

– Enforce the implementation of a unified security framework to safeguard sensitive client data and preserve the integrity of the bank financial ecosystem.
– Improve risk management by harnessing new data, increasing business performance with better risk-based decision-making.
– Leverage global industry standards to accelerate transformation and bring clarity to modernization roadmaps.
– Refresh the control framework, including all risk and compliance policies, to foster a trusted operational environment for the use of AI at scale inside the organization and beyond banking borders.

"Being a leading bank in the region, we initially undertook a substantial modernization program for our core banking to transition our architecture towards a service-oriented model. Following that, we further modernized our service-oriented architecture to an API-led structure to widen our accessibility to third parties."

Jorg Fischer
Group Chief Information Officer, Standard Bank

"To speed things up, more regulation is welcome. As strange as it may sound to many, I think regulation can help to spotlight the need of a mindset change. And this is what PSD2 and open banking regulations triggered."

Sudip Khan
Open Banking Leader, Raiffeisen Bank International

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Study methodologies

Consumer survey

In June 2023, we surveyed 12,000 banking clients equally spread across 12 countries to explore how they are adapting to the progressive availability of digital banking services. This is relevant to understand where and how to calibrate embedded finance strategies to accelerate return on investment. The survey respondents represent a population equally represented across age cohorts. While not all world countries are represented, those selected, as well as the variety of respondents' ages, make the analysis indicative of behavioral shifts in key regions and markets.

Executive survey

In June 2023, we surveyed 1,000 banking executives across 32 countries to explore how their institutions are leveraging embedded finance. We learned where they are in implementation, which hurdles they encountered, and how they resolved key challenges to accelerate transformation.

One-on-one interviews with banking and corporate executives

Between June and August 2023, we conducted more than 20 one-on-one interviews with executives at financial institutions and their non-banking partners. We learned what truly matters in embedded finance and digital transformation from the professionals who work in the field. Their expert contributions can be found in the multiple quotes enriching this paper, all sourced from our upcoming compendium, *The voice of the makers.*

Aggregation method for world economies

This research provides survey statistics as global figures and aggregated data. The classification of the IMF's World Economic Outlook database has been applied to group "major advanced economies" (corresponding to G7 countries) with all EU member states (to reflect the influence of the same banking regulation on EU countries). Similarly, "other advanced and emerging economies" have been identified based on the same classification and grouped together. Source: https://www.imf.org/en/Publications/WEO/weo-database/2023/April/groups-and-aggregates

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Notes and sources

1 Five-year average ROAE and CIR have been calculated for each period ending between 2007 (before the global financial crisis) and latest annual reports available (2022) by the IBM Institute for Business Value using data from S&P Global; The regional labels “major advanced economies and EU member states” and “other advanced and emerging economies” align with groupings created by the International Monetary Fund. https://www.imf.org/en/Publications/WEO/weo-database/2023/April/groups-and-aggregates

2 *Major central banks not done with rate hikes just yet.* Reuters. June 15, 2023. https://www.reuters.com/world/uk/major-central-banks-not-done-with-rate-hikes-just-yet-2023-06-15/; *China central bank cuts rates for second time in three months to support economy.* CNBC. August 14, 2023. https://www.cnbc.com/2023/08/15/china-central-bank-cuts-rates-for-second-time-to-support-economy.html

3 Barr, Michael S. Review of the Federal Reserve’s Supervision and Regulation of Silicon Valley Bank. Board of Governors of the Federal Reserve System. April 28, 2023. https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf

4 Five-year average ROAE and CIR have been calculated for each period ending between 2007 (before the global financial crisis) and latest annual reports available (2022) by the IBM Institute for Business Value using data from S&P Global.

5 *List of neobanks and digital banks in the world in 2023.* Jumpstart. August 21, 2023. https://jmpstrt.be/list/global

6 *Enterprise generative AI: State of the market.* IBM Institute for Business Value. July 2023. Unpublished data.

7 Ibid.

8 Ibid.

9 Ibid.

10 Goehring, Brian, Francesca Rossi, and Beth Rudden. *AI ethics in action: An enterprise guide to progressing trustworthy AI.* IBM Institute for Business Value. May 2022. https://ibm.co/ai-ethics-action

11 Based on internal IBM client information.

12 Ramamurthy, Shanker, John J. Duigenan, Hans Tesselaar, and Paolo Sironi. *Foundations of banking excellence: Practices and priorities to accelerate digital transformation.* IBM Institute for Business Value and BIAN. September 2022. https://ibm.co/foundations-banking-excellence

13 Banfico delivers open banking with Red Had OpenShift Service on AWS. Red Hat. June 9, 2022. https://www.redhat.com/en/resources/banfico-case-study

14 BIAN in practice: ABSA Bank. BIAN. Accessed August 21, 2023. https://www.bian.org/deliverables/case-studies/case-study-absa-bank/

15 IBM Institute for Business Value analysis of S&P Global data.

16 Bertrand, Ryan. *The rise of a financial tiger: An intelligent platform puts State Bank of India customers first.* IBM. Accessed August 21, 2023. https://www.ibm.com/case-studies/state-bank-of-india/

17 *Bradesco lança E-agro, marketplace focado em agronegócios.* IBM Newsroom. June 5, 2023. https://www.ibm.com/blogs/ibm-comunica/bradesco-eagro/

18 Valdes, Constanza. *Brazil’s Momentum as a Global Agricultural Supplier Faces Headwinds.* Economic Research Service, US Department of Agriculture. September 27, 2022. https://www.ers.usda.gov/amber-waves/2022/september/brazil-s-momentum-as-a-global-agricultural-supplier-faces-headwinds/

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