

**Forbes**  
**INSIGHTS**

# Banking At A Crossroads: The State Of Banking Modernization

Openness, Connectedness And New Models Of  
Customer & Partner Engagement—Here's How  
The Banking Industry Is Changing

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# Introduction

For decades, banks were among the first and most eager early adopters of new technology.

When mainframe computers arrived in the 1950s, for example, [bankers were first in line](#) with their checkbooks. Over the next 50 years, the banking revolution was fueled by evermore powerful hardware.

And yet today, many banks find themselves lagging behind leaders in fintech and “Big Tech”—a catchall term for the top technology companies in a given industry. Companies in these categories are using cloud-based platforms that are better at meeting the modern customer’s expectations. They’re faster, cheaper and more dynamic.

“[Legacy banking systems] can’t fuel those digital experiences that consumers expect now,” says Barry O’Connell, managing director, Americas at Thought Machine.

One solution is open banking, which leverages cloud technology and open application programming interfaces (APIs) to provide greater financial transparency and control.

“It’s a dramatic shift in how [banks] operate and run their business,” says Brad Steele, general manager, Americas, and managing director global partnerships at Thought Machine.

To learn more about digitalization in banking, Forbes partnered with core banking and payments software provider Thought Machine to survey 150 U.S.-based banking leaders. We synthesize their responses in this report—which explores the overall landscape of banking modernization, along with its risks, rewards and rates of adoption.

Below, we present four key insights based on our analysis of the survey data.

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**BARRY O’CONNELL**

MANAGING DIRECTOR, AMERICAS,  
THOUGHT MACHINE

# Cloud Migration Is Underway, But Cloud-Nativeness Remains Uneven

There's only one way to go about it: Banking modernization must happen in the cloud.

"Cloud migration is critical [for] banks to scale," Steele explains. "It provides end-to-end encryption and authentication and redundancy from a security posture, and the overall agility to move very fast. ... [Banks] cannot get [this] from their legacy hardware and infrastructure."

First, the good news. Nearly two-thirds (65%) of those surveyed report that most of their IT is already cloud-native. The majority (57%) also believe their tech stack is fully ready to support the modernization efforts that are prerequisite to open banking.

However, cloud adoption and modernization are markedly uneven within most organizations. Fewer than 50% of banks are migrating their middle and back offices to the cloud. Efforts are instead focused on front-end functions, such as mobile apps and other customer touch points.

Though not ideal, this makes sense to O'Connell. Innovation often focuses on improving the customer experience because front ends are relatively easy to upgrade. It's much harder, if not downright impossible, to rewrite middle- and back-end functions to be cloud-native.

That's why the next generation of core banking software that the entire bank runs on must be designed for the cloud from the ground up, says O'Connell. Otherwise, banks risk stifled innovation, slower speeds-to-market and growing cost inefficiencies without the benefits of cloud computing.

FIGURE I: MEASURING MODERNIZATION

**Leaders shared how their organizations are pursuing digital transformation.**



\*Percentages represent the portion of leaders that agree or strongly agree with each statement.





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**BRAD STEELE**

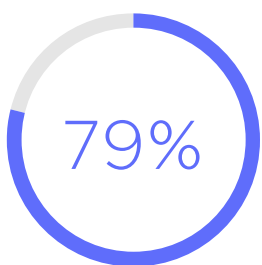
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# Ambitions To Adopt Open And Embedded Finance Are High, But Actions Aren't Keeping Pace

According to the survey, a majority (87%) of bankers are pursuing open banking, and nearly as many (79%) agree that open banking will revolutionize the marketplace.

More than two-thirds (69%) believe open finance and embedded finance will help banks deliver better CX, leading to greater client engagement and business growth.

Why, then, are so many overlooking the one component that's fundamental to openness and connectedness? Just 57% of bankers currently require their products and services to be built with APIs, and a little more (62%) require their vendors to offer API integration.



Portion of surveyed bankers who say open banking will revolutionize the marketplace.

FIGURE II: ARE BANKING LEADERS OVERLOOKING THE POWER OF APIS?

Do leaders agree with the following statements about APIs?

■ YES ■ NO

Your modernization strategy includes an interoperability layer (e.g., API gateway). **66%** YES **34%** NO

Your API model enables you to redefine your partnership models and explore an ecosystem approach to achieve faster growth. **63%** YES **37%** NO

You require all tech vendors that you bring on board to have an API-based interface. **62%** YES **38%** NO

Your approach to APIs is to create multiple highly specialized services to be able to partner with best-of-breed innovative vendors. **59%** YES **41%** NO

You require that all the products and services built-in house possess an API-based microservices architecture. **57%** YES **43%** NO

This is a serious problem, says O’Connell. “Embedded finance and experience is all enabled through APIs.”

For example, consider buy now, pay later offers that have become popular with many online retailers. These are essentially instant loans. “For a large bank to offer a microloan at the point of sale involves an open architecture and being able to embed financial services [such as] onboarding and approvals,” O’Connell explains.

Without a microservices-based architecture with robust APIs at its core, banks cannot offer these and other products. And if banks can’t keep up with consumer demand, someone else will.

“[Fintechs] are building best-in-breed applications for these banks’ customers,” Steele says.

O’Connell sees another risk for those banks that are slow to modernize their architecture. “There has been a lot of M&A [mergers and acquisitions] activity in banking consolidation,” he says. “If I’m looking at who I would acquire, I’d be more interested in those that have a more modern tech strategy in place because they’re going to be accretive to the bank.”



# Customer Data Alone No Longer Provides Competitive Edge

Since the days of punch cards and magnetic tape drives, banks have always understood the importance of collecting data.

The technology has changed, but one guiding principle has not: Personal data is the edge that allows banks to attract and retain customers.

Indeed, the majority (63%) in the banking sector continue to believe their vast caches of customer data are a competitive advantage. Most (78%) use this data to enhance their CX through personalization.

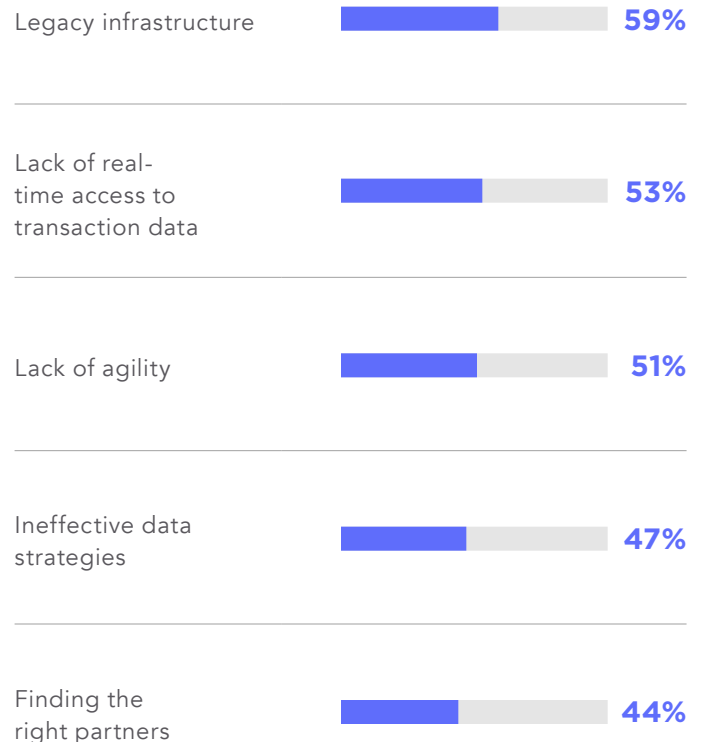
Such static data may not be enough for much longer, though. With so many account holders making instant purchases online and sending money through payment apps, legacy banking software can struggle to maintain an accurate ledger in real time.

This may come as a surprise to consumers, who assume their funds are immediately debited from or credited to their accounts. This, O'Connell suggests, is a carefully crafted illusion.

Banks "have invested millions" to convince customers that a purchase, payment or transfer is processed instantaneously, he says. "In reality, that transaction doesn't close until the end of the day with many of those batch systems.

**FIGURE III: WHAT'S HOLDING BANKING LEADERS BACK?**

**What do leaders see as their greatest challenges as they pursue opportunities and address competitive threats?**



\*Percentages represent the portion of leaders that selected each challenge. The table shows the top five challenges selected by respondents.



Most bankers are aware of this shortcoming. Already, more than half of the executives surveyed (53%) identify the lack of real-time access to this transaction data as a major challenge. Without it, they're missing countless opportunities.

"No matter how much you invest in your mobile or digital channels or CRM [customer relationship management software], if all of the data is locked up in legacy infrastructure, you can't really fuel those experiences," O'Connell says.

Finally, the location of both customer and transaction data is also important. By using modern, cloud-based core banking software, which doesn't store customer data in the core ledger, banks can more efficiently manage data protection risk.



Portion of surveyed bankers who consider legacy infrastructure a major business challenge.



# The Relationship Between Banking And Big Tech Is Complicated But Critical

Food delivery, public transportation, bookstores, retail—you name the industry and it’s likely being upended by plenty of tech-savvy up-and-comers.

There’s no shortage of cautionary tales of startups and other well-funded market entrants disrupting well-established industries.

Though more well-established than most, banks are not immune.

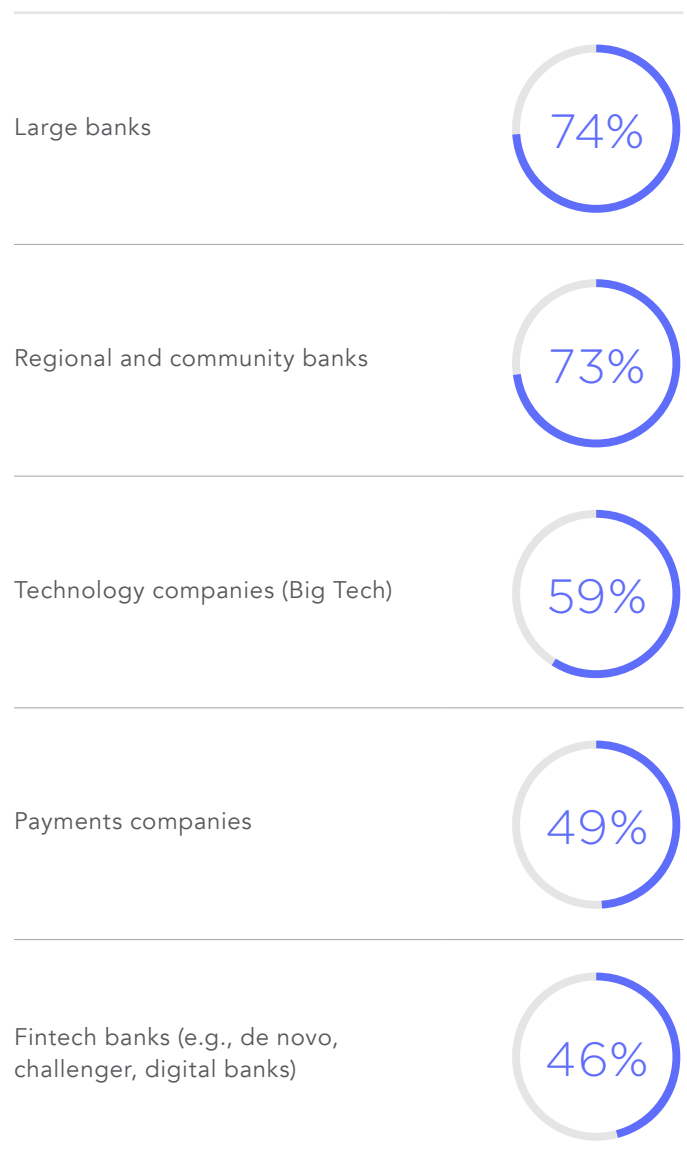
“There was a lot of ... fear that [Big Tech] would offer banking products,” O’Connell says. “In reality, the only thing that’s occurred is major partnerships between banks and those companies. ... I see Big Tech and the banks collaborating more than competing.”

Still, as the survey data reveals, it’s an uneasy alliance.

Banks regard Big Tech as a midlevel competitive threat, and executives are less likely to consider them for partnerships. And although a majority of execs (56%) see their industry’s extensive partnership ecosystem as a competitive advantage over fintechs, fewer (47%) would be willing to subscribe to a banking-as-a-service product (BaaS).

FIGURE IV: DEFINING DISRUPTION

**Leaders ranked the following competitive threats to their institutions.**



\*Percentages represent the portion of leaders who ranked the threat among their top three.

At issue: Big Tech and fintechs both covet the kind of customer loyalty that banks enjoy, and bank executives cannot afford to cede territory here. This may explain why most banks aren't interested in adopting front ends built by the Big Tech firms, preferring instead to own the customer experience completely.

According to the survey, the majority (77%) are launching new digital products and services, and 62% have a well-staffed talent pool that's up to the task of bank modernization.

"Compared to Big Tech, banks are in a much better position when it comes to serving customers from a financial service perspective because they're trusted entities," Steele says. Big Tech, on the other hand, may have "ulterior motives" that might not be aligned with what the customer really wants.

Finally, banks are better than Big Tech at one more very important process: playing by the rules. Banking is a heavily regulated industry that can scare off carpetbaggers and newcomers.

"I don't think any Big Tech company truly wants to become a financial regulated entity," O'Connell explains. "It's not fun and it comes with a great burden, so there is a great barrier to entry there."

This, perhaps more than any other factor, may explain why the industry is witnessing an "explosion of partnerships between banks and tech companies," O'Connell says. "That's a better route to market."

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# Conclusion: Transformation Requires Embracing Cloud

Did banking customers demand faster, easier access to money, personalized banking products and services? Or did the global banking industry create new products and services that, in turn, evolved customer expectations? It's a classic chicken-and-egg question.

No matter who kicked off the digital banking revolution, the survey data makes clear that most executives are eager to innovate even further. Many have begun their banking transformation efforts, but far too many lag behind.

For O'Connell, another pitfall is awaiting those banks that continue to run outdated, underperforming legacy systems. "Cloud-native tech stacks [are more attractive to] the talent of the future," he says. "If you're stuck—not modernizing, not investing—it's very hard to hire people anymore to work for your bank."

Open finance and embedded finance, says Steele, are at the center of this next wave of transformation—and cloud migration is its starting point. "How do you do true digital transformation without being in the cloud first? I liken it to building a house without pouring the foundation first."

The banks that leverage cloud will set themselves apart, says Steele. "It's going to help a bank better understand and serve their customers. It's going to enable them to hyper-personalize products and experience for their customers [and predict] what the client needs before [they] even know what they need. ... This is what's going to really enable banks to innovate for their customers."

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## JEFF KOYEN

Report Author

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# Methodology

Forbes Insights surveyed 150 U.S.-based banking leaders.

Forty-six percent of respondents were from global or national banks, 30% from regional or community banks, 13% from credit unions and 11% from challenger, neo or de novo banks. Respondent titles included CTO (21%), CIO (19%), COO (13%), head of core banking tech/IT (13%), digital transformation lead or chief digital officer (13%), strategy lead (13%) and LOB head (7%). All respondents came from organizations with at least \$1 billion in assets under management and one-third of respondents came from organizations with assets under management of over \$100 billion.



Thought Machine has developed the foundations of modern banking with its cloud-native core banking and payments technology. Its cloud-native core banking engine, Vault Core, is trusted by leading banks and financial institutions around the world, including JPMorgan Chase, Intesa Sanpaolo, ING Bank Śląski, Lloyds Banking Group, Standard Chartered, SEB, Lunar, Atom bank and Curve.

Vault Payments is a cloud-native payments processing platform—launching first with card processing on the Mastercard network, with full coverage available from 2023.

The Vault platform has been written from scratch as an entirely cloud-native system and gives banks full control to build any product required to flourish in a rapidly changing world.

Thought Machine is currently a team of more than 500 people spread across offices in London, New York, Singapore, Sydney and Melbourne, and it has raised more than \$500 million in funding.

For more information, visit [thoughtmachine.net](https://thoughtmachine.net).