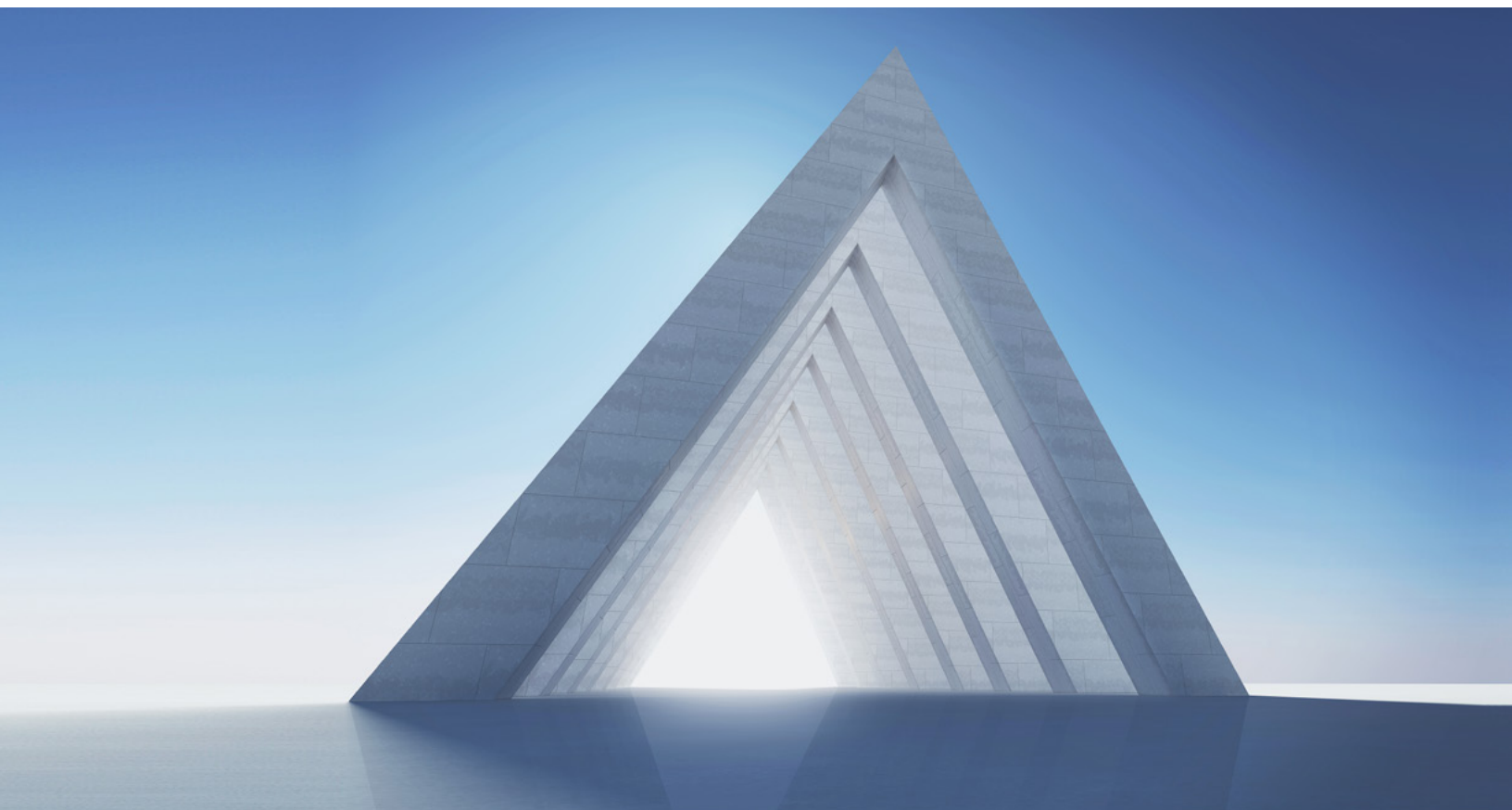


Global Banking & Securities

# AI-bank of the future: Can banks meet the AI challenge?

Artificial intelligence technologies are increasingly integral to world we live in, and banks need to deploy these technologies at scale to remain relevant. Success requires a holistic transformation spanning multiple layers of the organization.

*by Suparna Biswas, Brant Carson, Violet Chung, Shwaitang Singh, and Renny Thomas*



In 2016, AlphaGo, a machine, defeated 18-time world champion Lee Sedol at the game of Go, a complex board game requiring intuition, imagination, and strategic thinking—abilities long considered distinctly human. Since then, artificial intelligence (AI) technologies have advanced even further,<sup>1</sup> and their transformative impact is increasingly evident across industries. AI-powered machines are tailoring recommendations of digital content to individual tastes and preferences, designing clothing lines for fashion retailers, and even beginning to surpass experienced doctors in detecting signs of cancer. For global banking, McKinsey estimates that AI technologies could potentially deliver up to \$1 trillion of additional value each year.<sup>2</sup>

Many banks, however, have struggled to move from experimentation around select use cases to scaling AI technologies across the organization. Reasons include the lack of a clear strategy for AI, an inflexible and investment-starved technology core, fragmented data assets, and outmoded operating models that hamper collaboration between business and technology teams. What is more, several trends in digital engagement have accelerated during the COVID-19 pandemic, and big-tech companies are looking to enter financial services as the next adjacency. To compete successfully and thrive, incumbent banks must become “AI-first” institutions, adopting AI technologies as the foundation for new value propositions and distinctive customer experiences.

In this article, we propose answers to four questions that can help leaders articulate a clear vision and develop a road map for becoming an AI-first bank:

1. Why must banks become AI-first?
2. What might the AI-bank of the future look like?

3. What obstacles prevent banks from deploying AI capabilities at scale?
4. How can banks transform to become AI-first?

## 1. Why must banks become AI-first?

Over several decades, banks have continually adapted the latest technology innovations to redefine how customers interact with them. Banks introduced ATMs in the 1960s and electronic, card-based payments in the '70s. The 2000s saw broad adoption of 24/7 online banking, followed by the spread of mobile-based “banking on the go” in the 2010s.

Few would disagree that we're now in the AI-powered digital age, facilitated by falling costs for data storage and processing, increasing access and connectivity for all, and rapid advances in AI technologies. These technologies can lead to higher automation and, when deployed after controlling for risks, can often improve upon human decision making in terms of both speed and accuracy. The potential for value creation is one of the largest across industries, as AI can potentially unlock \$1 trillion of incremental value for banks, annually (Exhibit 1).

Across more than 25 use cases,<sup>3</sup> AI technologies can help **boost revenues** through increased personalization of services to customers (and employees); **lower costs** through efficiencies generated by higher automation, reduced errors rates, and better resource utilization; and **uncover new and previously unrealized opportunities** based on an improved ability to process and generate insights from vast troves of data.

More broadly, disruptive AI technologies can dramatically improve banks' ability to achieve four key outcomes: higher profits, at-scale personalization, distinctive omnichannel

<sup>1</sup> AI can be defined as the ability of a machine to perform cognitive functions associated with human minds (e.g., perceiving, reasoning, learning, and problem solving). It includes various capabilities, such as machine learning, facial recognition, computer vision, smart robotics, virtual agents, and autonomous vehicles. See “Global AI Survey: AI proves its worth, but few scale impact,” November 2019, McKinsey.com.

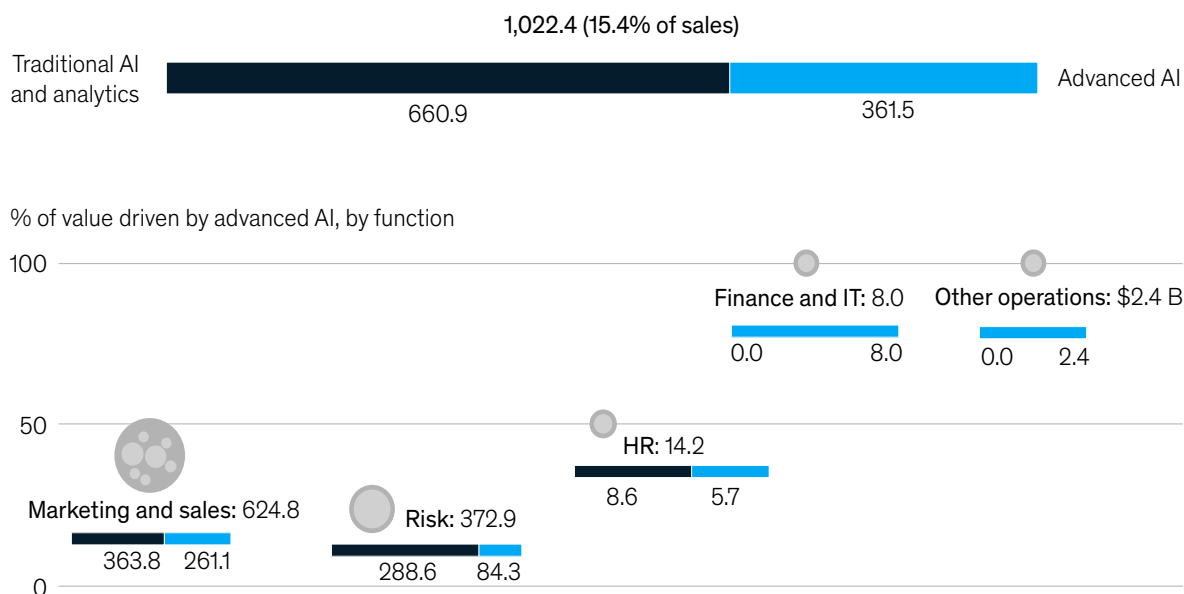
<sup>2</sup> “The executive's AI playbook,” McKinsey.com.

<sup>3</sup> For an interactive view, visit: [www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/the-executives-ai-playbook?page=industries/banking/](http://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/the-executives-ai-playbook?page=industries/banking/)

Exhibit 1

## Potential annual value of AI and analytics for global banking could reach as high as \$1 trillion.

### Total potential annual value, \$ billion



Source: "The executive's AI playbook," McKinsey.com. (See "Banking," under "Value & Assess.")

experiences, and rapid innovation cycles. Banks that fail to make AI central to their core strategy and operations—what we refer to as becoming “AI-first”—will risk being overtaken by competition and deserted by their customers. This risk is further accentuated by four current trends:

- **Rising customer expectations as adoption of digital banking increases.** In the first few months of the COVID-19 pandemic, use of online and mobile banking channels across countries has increased by an estimated 20 to 50 percent and is expected to continue at this higher level once the pandemic subsides. Across diverse global markets, between 15 and 45 percent of consumers expect to cut back on branch visits following the end of the crisis.<sup>4</sup>

As consumers increase their use of digital banking services, they grow to expect more, particularly when compared to the standards they are accustomed to from leading consumer-internet companies. Meanwhile, these digital experience leaders continuously raise the bar on personalization, to the point where they sometimes anticipate customer needs before the customer is aware of them, and offer highly-tailored services at the right time, through the right channel.

- **Leading financial institutions' use of advanced AI technologies is steadily increasing.** Nearly 60 percent of financial-services sector respondents in McKinsey's Global AI Survey report<sup>5</sup> that their companies have embedded

<sup>4</sup> John Euart, Nuno Ferreira, Jonathan Gordon, Ajay Gupta, Atakan Hilal, Olivia White, "A global view of financial life during COVID-19—an update," July 2020, McKinsey.com.

<sup>5</sup> Arif Cam, Michael Chui, Bryce Hall, "Global AI Survey: AI proves its worth, but few scale impact," November 2019, McKinsey.com.

at least one AI capability. The most commonly used AI technologies are: *robotic process automation* (36 percent) for structured operational tasks; *virtual assistants or conversational interfaces* (32 percent) for customer service divisions; and *machine learning techniques* (25 percent) to detect fraud and support underwriting and risk management. While for many financial services firms, the use of AI is episodic and focused on specific use cases, an increasing number of banking leaders are taking a comprehensive approach to deploying advanced AI, and embedding it across the full lifecycle, from the front- to the back-office (Exhibit 2).

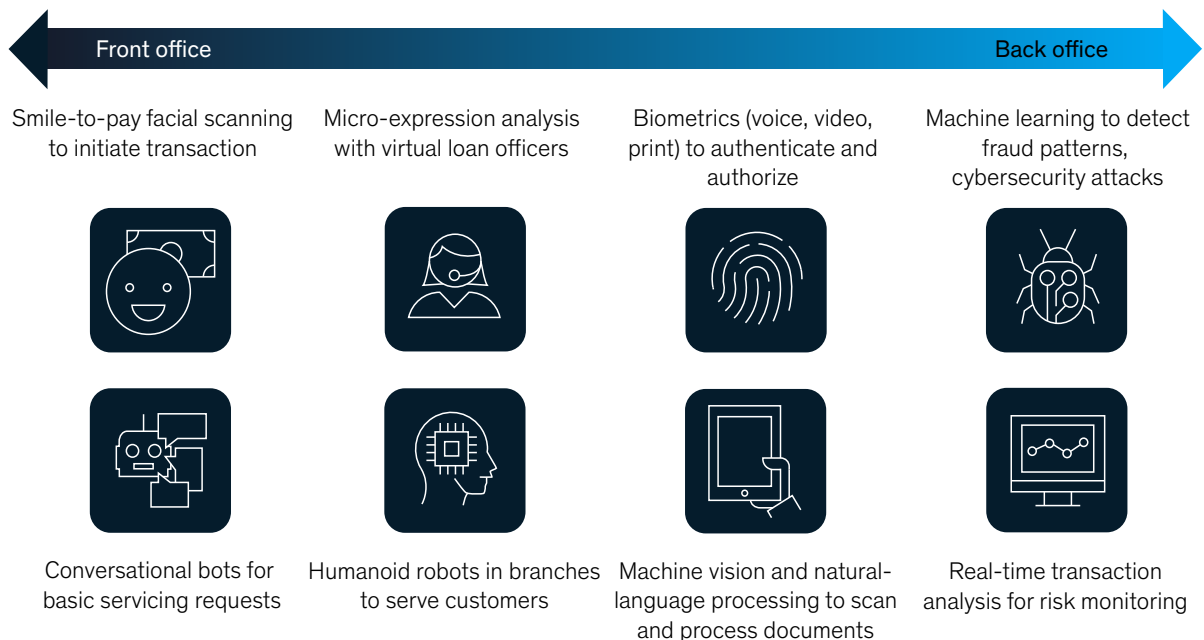
- **Digital ecosystems are disintermediating traditional financial services.** By enabling access to a diverse set of services through a common access point, digital ecosystems have transformed the way consumers discover, evaluate, and purchase goods and services. For example, WeChat users in China can use the same app not only to exchange messages,

but also to book a cab, order food, schedule a massage, play games, send money to a contact, and access a personal line of credit. Similarly, across countries, nonbanking businesses and “super apps” are embedding financial services and products in their journeys, delivering compelling experiences for customers, and disrupting traditional methods for discovering banking products and services. As a result, banks will need to rethink how they participate in digital ecosystems, and use AI to harness the full power of data available from these new sources.

- **Technology giants are entering financial services as the next adjacency to their core business models.** Globally, leading technology giants have built extraordinary market advantages: a large and engaged customer network; troves of data, enabling a robust and increasingly precise understanding of individual customers; natural strengths in developing and scaling innovative technologies (including AI); and access to

Exhibit 2

**Banks are expanding their use of AI technologies to improve customer experiences and back-office processes.**



low-cost capital. In the past, tech giants have aggressively entered into adjacent businesses in search of new revenue streams and to keep customers engaged with a fresh stream of offerings. Big-tech players have already gained a foothold in financial services in select domains (especially in payments and, in some cases, lending and insurance), and they may soon look to press their advantages to deepen their presence and build greater scale.

digital era, the AI-first bank will offer propositions and experiences that are *intelligent* (that is, recommending actions, anticipating and automating key decisions or tasks), *personalized* (that is, relevant and timely, and based on a detailed understanding of customers' past behavior and context), and truly *omnichannel* (seamlessly spanning the physical and online contexts across multiple devices, and delivering a consistent experience) and that blend banking capabilities with relevant products and services beyond banking. Exhibit 3 illustrates how such a bank could engage a retail customer throughout the day. Exhibit 4 shows an example of the banking experience of a small-business owner or the treasurer of a medium-size enterprise.

## 2. What might the AI-bank of the future look like?

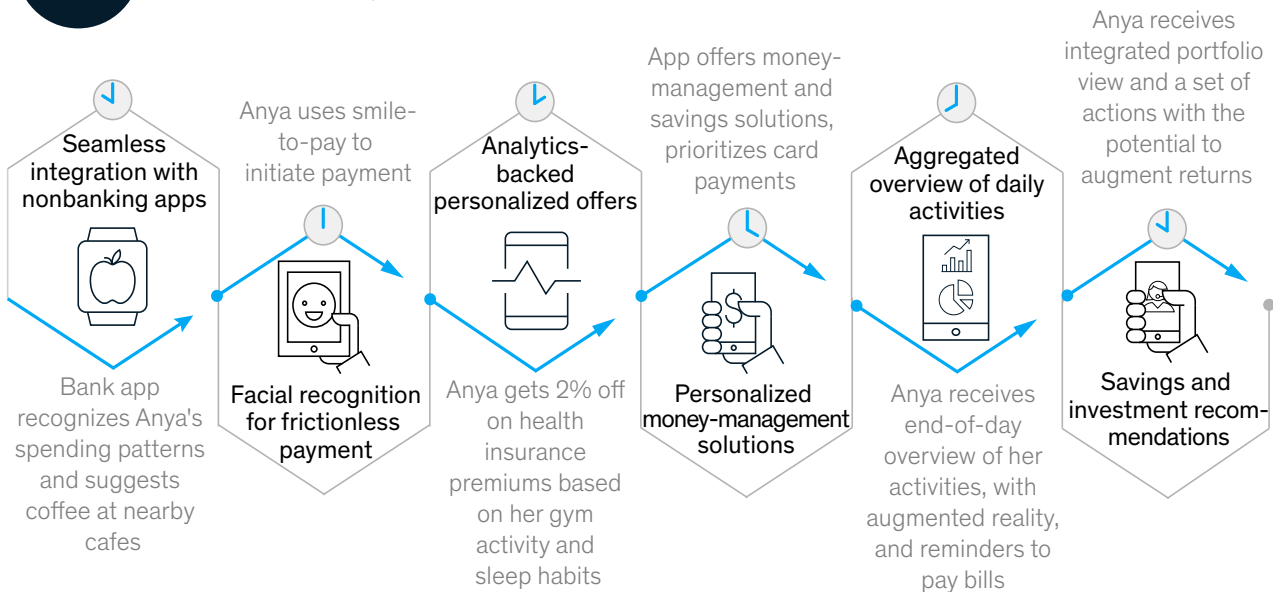
To meet customers' rising expectations and beat competitive threats in the AI-powered

Exhibit 3

### How AI transforms banking for a retail customer.



Name: Anya  
Age: 28 years  
Occupation: Working professional

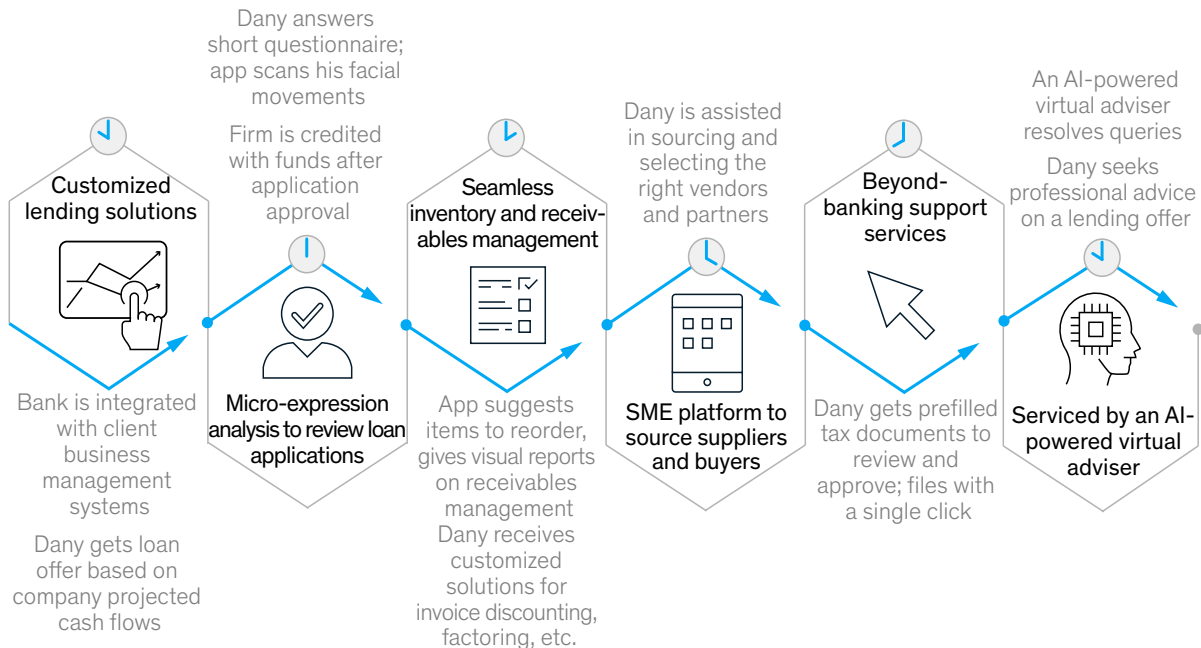


Intelligent	Personalized	Omnichannel	Banking and beyond banking
-------------	--------------	-------------	----------------------------

## How AI transforms banking for a small- or medium-size-enterprise customer.



Name: Dany  
 Age: 36 years  
 Occupation: Treasurer of a small manufacturing unit



Intelligent	Personalized	Omnichannel	Banking and beyond banking
-------------	--------------	-------------	----------------------------

Internally, the AI-first institution will be optimized for operational efficiency through extreme automation of manual tasks (a “zero-ops” mindset) and the replacement or augmentation of human decisions by advanced diagnostic engines in diverse areas of bank operations. These gains in operational performance will flow from broad application of traditional and leading-edge AI technologies, such as machine learning and facial recognition, to analyze large and complex reserves of customer data in (near) real time.

The AI-first bank of the future will also enjoy the speed and agility that today characterize digital-native companies. It will innovate rapidly, launching new features in days or weeks instead of months. It will collaborate extensively with partners to deliver new value propositions integrated seamlessly across journeys, technology platforms, and data sets.

### 3. What obstacles prevent banks from deploying AI capabilities at scale?

Incumbent banks face two sets of objectives, which on first glance appear to be at odds. On the one hand, banks need to achieve the speed, agility, and flexibility innate to a fintech. On the other, they must continue managing the scale, security standards, and regulatory requirements of a traditional financial-services enterprise.

Despite billions of dollars spent on change-the-bank technology initiatives each year, few banks have succeeded in diffusing and scaling AI technologies throughout the organization. Among the obstacles hampering banks' efforts, the most common is the lack of a clear strategy for AI.<sup>6</sup> Two additional challenges for many banks are, first, a weak core technology and data backbone and, second, an outmoded operating model and talent strategy.

Built for stability, banks' core technology systems have performed well, particularly in supporting traditional payments and lending operations. However, banks must resolve several weaknesses inherent to legacy systems before they can deploy AI technologies at scale (Exhibit 5). First and foremost, these systems often lack the capacity and flexibility required to support the variable computing requirements, data-processing needs, and real-time analysis that closed-loop AI applications require.<sup>7</sup> Core systems are also difficult to change, and their maintenance requires significant resources. What is more, many banks' data reserves are fragmented across multiple silos (separate business and technology teams), and analytics efforts are focused narrowly on stand-alone use

cases. Without a centralized data backbone, it is practically impossible to analyze the relevant data and generate an intelligent recommendation or offer at the right moment. If data constitute the bank's fundamental raw material, the data must be governed and made available securely in a manner that enables analysis of data from internal and external sources at scale for millions of customers, in (near) real time, at the "point of decision" across the organization. Lastly, for various analytics and advanced-AI models to scale, organizations need a robust set of tools and standardized processes to build, test, deploy, and monitor models, in a repeatable and "industrial" way.

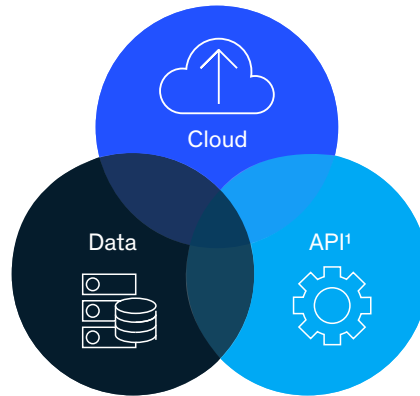
Banks' traditional operating models further impede their efforts to meet the need for continuous innovation. Most traditional banks are organized around distinct business lines, with centralized technology and analytics teams structured as cost centers. Business owners define goals unilaterally, and alignment with the enterprise's technology and analytics strategy (where it exists) is often weak or inadequate. Siloed working teams and "waterfall" implementation processes invariably lead to delays, cost overruns, and suboptimal performance. Additionally, organizations lack a test-and-learn mindset and robust feedback loops that promote rapid experimentation and iterative improvement. Often unsatisfied with the performance of past projects and experiments, business executives tend to rely on third-party technology providers for critical functionalities, starving capabilities and talent that should ideally be developed in-house to ensure competitive differentiation.

---

<sup>6</sup> Michael Chui, Sankalp Malhotra, "AI adoption advances, but foundational barriers remain," November 2018, McKinsey.com.

<sup>7</sup> "Closed loop" refers to the fact that the models' intelligence is applied to incoming data in near real time, which in turn refines the content presented to the user in near real time.

**Investments in core tech are critical to meet increasing demands for scalability, flexibility, and speed.**



<p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>Core/legacy systems <b>can't scale</b> sufficiently (eg, 150+ transactions/second)</li> <li>Significant <b>time, effort, and team sizes required</b> to maintain infrastructure</li> <li>Long <b>time required</b> to provision environments for development and testing (eg, 40+ days in some cases)</li> </ul>	<p><b>How cloud computing can help</b></p> <ul style="list-style-type: none"> <li>Enables <b>higher scalability, resilience of services and platforms</b> through virtualization of infrastructure</li> <li><b>Reduces IT overhead</b>, enables <b>automation</b> of several <b>infrastructure-management tasks</b>, and allows development teams to “self-serve”</li> <li>Enables <b>faster time to market</b>; dramatically <b>reduces time by providing managed services</b> (e., setting up new environments in minutes vs days)</li> </ul>
<p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>High <b>error rates</b>; poor <b>refresh rates</b>; lack of <b>golden source of truth</b></li> <li><b>Hard to access</b> in a <b>timely fashion</b> for various use cases</li> <li>Data <b>trapped in silos</b> across multiple units and <b>hard to integrate with external sources</b></li> </ul>	<p><b>How best-in-class data management can help</b></p> <ul style="list-style-type: none"> <li><b>Ensures high degree of accuracy</b> and <b>single source of truth</b> in a cost-effective manner</li> <li>Enables <b>timely</b> and <b>role-appropriate access for various use cases</b> (eg, regulatory, business intelligence at scale, advanced analytics and machine learning, exploratory)</li> <li>Enables a <b>360-degree view across the organization</b> to enable generation of <b>deeper insights</b> by decision-making algorithms and models</li> </ul>
<p><b>Challenges</b></p> <ul style="list-style-type: none"> <li><b>Longer time to market, limited reusability</b> of code and software across internal teams</li> <li><b>Hard to partner or collaborate with external partners</b>; long time to integrate</li> <li><b>Suboptimal user experience</b>—hard to stitch data and services across multiple functional siloes for an integrated proposition</li> </ul>	<p><b>How APIs can help</b></p> <ul style="list-style-type: none"> <li><b>Promote reusability</b> and <b>accelerate development</b> by enabling access to granular services (internal and external)</li> <li><b>Reduce complexity</b> and <b>enable faster collaboration</b> with external partners</li> <li>Enhance <b>customer experience</b> by <b>enabling timely access</b> to data and services across different teams; faster time to market due to <b>limited coordination, cross-team testing</b></li> </ul>

<sup>1</sup>Application programming interface.



## 4. How can banks transform to become AI-first?

To overcome the challenges that limit organization-wide deployment of AI technologies, banks must take a holistic approach. To become AI-first, banks must invest in transforming capabilities across all four layers of the integrated capability stack (Exhibit 6): the engagement layer, the AI-powered decisioning layer, the core technology and data layer, and the operating model.

As we will explain, when these interdependent layers work in unison, they enable a bank to provide customers with distinctive omnichannel experiences, support at-scale personalization, and drive the rapid innovation cycles critical to remaining competitive in today's world. Each layer has a unique role to play—under-investment in a single layer creates a weak link that can cripple the entire enterprise.

The following paragraphs explore some of the changes banks will need to undertake in each layer of this capability stack.

### Layer 1: Reimagining the customer engagement layer

Increasingly, customers expect their bank to be present in their end-use journeys, know their context and needs no matter where they interact with the bank, and to enable a frictionless experience. Numerous banking activities (e.g., payments, certain types of lending) are becoming invisible, as journeys often begin and end on interfaces beyond the bank's proprietary platforms. For the bank to be ubiquitous in customers' lives, solving latent and emerging needs while delivering intuitive omnichannel experiences, banks will need to reimagine how they engage with customers and undertake several key shifts.

First, banks will need to move beyond highly standardized products to create integrated propositions that target “jobs to be done.”<sup>8</sup> This requires embedding personalization decisions (what to offer, when to offer, which channel to offer) in the core customer journeys and designing value propositions that go beyond the core banking product and include intelligence that automates decisions and activities on behalf of the customer. Further, banks should strive to integrate relevant non-banking products and services that, together with the core banking product, comprehensively address the customer end need. An illustration of the “jobs-to-be-done” approach can be seen in the way fintech Tally helps customers grapple with the challenge of managing multiple credit cards. The fintech's customers can solve several pain points—including decisions about which card to pay first (tailored to the forecast of their monthly income and expenses), when to pay, and how much to pay (minimum balance versus retiring principal)—a complex set of tasks that are often not done well by customers themselves.

The second necessary shift is to embed customer journeys seamlessly in partner ecosystems and platforms, so that banks engage customers at the point of end use and in the process take advantage of partners' data and channel platform to increase higher engagement and usage. ICICI Bank in India embedded basic banking services on WhatsApp (a popular messaging platform in India) and scaled up to one million users within three months of launch.<sup>9</sup> In a world where consumers and businesses rely increasingly on digital ecosystems, banks should decide on the posture they would like to adopt across multiple ecosystems—that is, to build, orchestrate, or partner—and adapt the capabilities of their engagement layer accordingly.

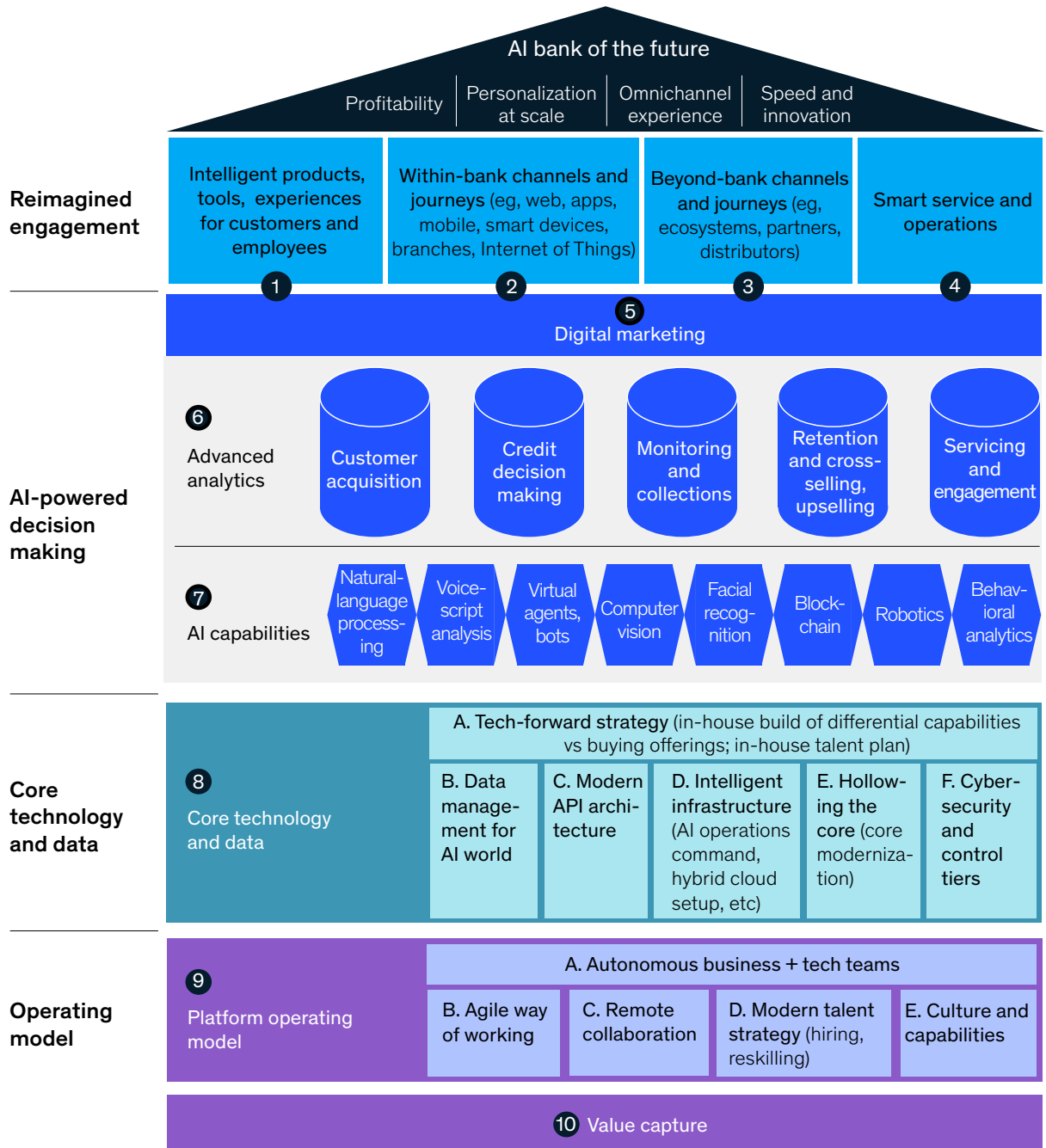
---

<sup>8</sup> Clayton M. Christensen, Taddy Hall, Karen Dillon and David S. Duncan, “Know your customers ‘jobs to be done,’” *Harvard Business Review*, September 2016, hbr.org.

<sup>9</sup> “ICICI Bank crosses 1 million users on WhatsApp platform,” *Live Mint*, July 7, 2020, livemint.com.

Exhibit 6

**To become an AI-first institution, a bank must streamline its capability stack for value creation.**



Third, banks will need to redesign overall customer experiences and specific journeys for omnichannel interaction. This involves allowing customers to move across multiple modes (e.g., web, mobile app, branch, call center, smart devices) seamlessly within a single journey and retaining and continuously updating the latest context of interaction. Leading consumer internet companies with offline-to-online business models have reshaped customer expectations on this dimension. Some banks are pushing ahead in the design of omnichannel journeys, but most will need to catch up.

Reimagining the engagement layer of the AI bank will require a clear strategy on how to engage customers through channels owned by non-bank partners. Banks will need to adopt a design-thinking lens as they build experiences within and beyond the bank's platform, engineering engagement interfaces for flexibility to enable tailoring and personalization for customers, reengineering back-end processes, and ensuring that data-capture funnels (e.g., clickstream) are granularly embedded in the bank's engagement layer. All of this aims to provide a granular understanding of journeys and enable continuous improvement.<sup>10</sup>

### **Layer 2: Building the AI-powered decision-making layer**

Delivering personalized messages and decisions to millions of users and thousands of employees, in (near) real time across the full spectrum of engagement channels, will require the bank to develop an at-scale AI-powered decision-making layer. Across domains within the bank, AI techniques can either fully replace or augment human judgment to produce significantly better outcomes (e.g., higher accuracy and speed), enhanced experience for customers (e.g., more personalized interaction and offerings), actionable insights for employees (e.g., which customer to contact first with next-best-action recommendations),

and stronger risk management (e.g., earlier detection of likelihood of default and fraudulent activities).

To establish a robust AI-powered decision layer, banks will need to shift from attempting to develop specific use cases and point solutions to an enterprise-wide road map for deploying advanced-analytics (AA)/machine-learning (ML) models across entire business domains. As an illustration, in the domain of unsecured consumer lending alone, more than 20 decisions across the life cycle can be automated.<sup>11</sup> To enable at-scale development of decision models, banks need to make the development process repeatable and thus capable of delivering solutions effectively and on-time. In addition to strong collaboration between business teams and analytics talent, this requires robust tools for model development, efficient processes (e.g., for re-using code across projects), and diffusion of knowledge (e.g., repositories) across teams. Beyond the at-scale development of decision models across domains, the road map should also include plans to embed AI in business-as-usual process. Often underestimated, this effort requires rewiring the business processes in which these AA/AI models will be embedded; making AI decisioning "explainable" to end-users; and a change-management plan that addresses employee mindset shifts and skills gaps. To foster continuous improvement beyond the first deployment, banks also need to establish infrastructure (e.g., data measurement) and processes (e.g., periodic reviews of performance, risk management of AI models) for feedback loops to flourish.

Additionally, banks will need to augment homegrown AI models, with fast-evolving capabilities (e.g., natural-language processing, computer-vision techniques, AI agents and bots, augmented or virtual reality) in their core business processes. Many of these leading-edge capabilities have the

---

<sup>10</sup> Jennifer Kilian, Hugo Sarrazin, and Hyo Yeon, "Building a design-driven culture," September 2015, McKinsey.com.

<sup>11</sup> Renny Thomas, Vinayak HV, Raphael Bick, and Shwaitang Singh, "Ten lessons for building a winning retail and small-business digital lending franchise," November 2019, McKinsey.com.

potential to bring a paradigm shift in customer experience and/or operational efficiency. While many banks may lack both the talent and the requisite investment appetite to develop these technologies themselves, they need at minimum to be able to procure and integrate these emerging capabilities from specialist providers at rapid speed through an architecture enabled by an application programming interface (API), promote continuous experimentation with these technologies in sandbox environments to test and refine applications and evaluate potential risks, and subsequently decide which technologies to deploy at scale.

To deliver these decisions and capabilities and to engage customers across the full life cycle, from acquisition to upsell and cross-sell to retention and win-back, banks will need to establish enterprise-wide digital marketing machinery. This machinery is critical for translating decisions and insights generated in the decision-making layer into a set of coordinated interventions delivered through the bank's engagement layer. This machinery has several critical elements, which include:

- Data-ingestion pipelines that capture a range of data from multiple sources both within the bank (e.g., clickstream data from apps) and beyond (e.g., third-party partnerships with telco providers)
- Data platforms that aggregate, develop, and maintain a 360-degree view of customers and enable AA/ML models to run and execute in near real time
- Campaign platforms that track past actions and coordinate forward-looking interventions across the range of channels in the engagement layer

### **Layer 3: Strengthening the core technology and data infrastructure**

Deploying AI capabilities across the organization requires a scalable, resilient, and adaptable set of core-technology components. A weak core-

technology backbone, starved of the investments needed for modernization, can dramatically reduce the effectiveness of the decision-making and engagement layers.

The core-technology-and-data layer has six key elements (Exhibit 7):

- ***Tech-forward strategy.*** Banks should have a unified technology strategy that is tightly aligned to business strategy and outlines strategic choices on which elements, skill sets, and talent the bank will keep in-house and those it will source through partnerships or vendor relationships. In addition, the tech strategy needs to articulate how each component of the target architecture will both support the bank's vision to be an AI-first institution and interact with each layer of the capability stack.
- ***Data management for the AI-enabled world.*** The bank's data management must ensure data liquidity—that is, the ability to access, ingest, and manipulate the data that serve as the foundation for all insights and decisions generated in the decision-making layer. Data liquidity increases with the removal of functional silos and allows multiple divisions to operate off the same data, with increased coordination. The data value chain begins with seamless sourcing of data from all relevant internal systems and external platforms. This includes ingesting data into a lake, cleaning and labeling the data required for diverse use cases (e.g., regulatory reporting, business intelligence at scale, AA/ML diagnostics), segregating incoming data (from both existing and prospective customers) to be made available for immediate analysis from data to be cleaned and labeled for future analysis. Furthermore, as banks design and build their centralized data-management infrastructure, they should develop additional controls and monitoring tools to ensure data security, privacy, and regulatory compliance—for example, timely and role-appropriate access across the organization for various use cases.

Exhibit 7

**The core-technology-and-data layer accommodates increasing use of the cloud and reduction of legacy technology.**

Capabilities	Our perspective
Tech-forward strategy	Build <b>differentiating capabilities in-house</b> by <b>augmenting the internal skill base</b> ; carefully weigh options to buy, build, or compose modular architecture through best-of-breed solutions
Data management for AI world	Upgrade data management and underlying architecture to <b>support machine-learning use cases at scale</b> by leveraging <b>cloud, streaming data, and real-time analytics</b>
Modern API <sup>1</sup> architecture	Leverage modern cloud-native tooling to <b>enable a scalable API platform supporting complex orchestrations</b> while creating <b>experience-enhancing integrations across the ecosystem</b>
Intelligent infrastructure	Implement infrastructure as code across on-premises and cloud environments; <b>increase platform resiliency by adopting AIOps</b> to support deep diagnostics, auto-recoverability, and auto-scale
Hollowing the core	Distribute transaction processing across the enterprise stack; selectively identify <b>components that can be externalized</b> to drive <b>broader reuse, standardization, and efficiency</b>
Cybersecurity and control tiers	Implement robust <b>cybersecurity in the hybrid infrastructure</b> ; secure data and applications through <b>zero-trust design principles and centralized command-and-control centers</b>

<sup>1</sup>Application programming interface.

- **Modern API architecture.** APIs are the connective tissue enabling controlled access to services, products, and data, both within the bank and beyond. Within the bank, APIs reduce the need for silos, increase reusability of technology assets, and promote flexibility in the technology architecture. Beyond the bank, APIs accelerate the ability to partner externally, unlock new business opportunities, and enhance customer experiences. While APIs can unlock significant value, it is critical to start by defining where they are to be used and establish centralized governance to support their development and curation.<sup>12</sup>
- **Intelligent infrastructure.** As companies in diverse industries increase the share of workload handled on public and private cloud infrastructure, there is ample evidence that cloud-based platforms allow for the higher scalability and resilience crucial to an AI-first strategy.<sup>13</sup> Additionally, cloud-based infrastructure reduces costs for IT maintenance and enables self-serve models for development teams, which enable rapid innovation cycles by providing managed services (e.g., setting up new environments in minutes instead of days).

<sup>12</sup> Renny Thomas, Vinayak HV, Raphael Bick, and Shwaitang Singh, "Ten lessons for building a winning retail and small-business digital lending franchise," November 2019, McKinsey.com.

<sup>13</sup> Arul Elumalai and Roger Roberts, "Unlocking business acceleration in a hybrid cloud world," August 2019, McKinsey.com.

#### Layer 4: Transitioning to the platform operating model

The AI-first bank of the future will need a new operating model for the organization, so it can achieve the requisite agility and speed and unleash value across the other layers. While most banks are transitioning their technology platforms and assets to become more modular and flexible, working teams within the bank continue to operate in functional silos under suboptimal collaboration models and often lack alignment of goals and priorities.

The platform operating model envisions cross-functional business-and-technology teams organized as a series of platforms within the bank. Each platform team controls their own assets (e.g., technology solutions, data, infrastructure), budgets, key performance indicators, and talent. In return, the team delivers a family of products or services either to end customers of the bank or to other platforms within the bank. In the target state, the bank could end up with three archetypes of platform teams. Business platforms are customer- or partner-facing teams dedicated to achieving business outcomes in areas such as consumer lending, corporate lending, and transaction banking. Enterprise platforms deliver specialized capabilities and/or shared services to establish standardization throughout the organization in areas such as collections, payment utilities, human resources, and finance. And enabling platforms enable the enterprise and business platforms to deliver cross-cutting technical functionalities such as cybersecurity and cloud architecture.

By integrating business and technology in jointly owned platforms run by cross-functional teams, banks can break up organizational silos, increasing agility and speed and improving the alignment of goals and priorities across the enterprise.

**Suparna Biswas** is a partner, **Shwaitang Singh** is an associate partner, and **Renny Thomas** is a senior partner, all in McKinsey's Mumbai office. **Brant Carson** is a partner in the Sydney office, and **Violet Chung** is a partner in the Hong Kong office.

The authors would like to thank Milan Mitra, Anushi Shah, Arihant Kothari, and Yihong Wu for their contributions to this article.

Copyright © 2020 McKinsey & Company. All rights reserved.

---

The journey to becoming an AI-first bank entails transforming capabilities across all four layers of the capability stack. Ignoring challenges or underinvesting in any layer will ripple through all, resulting in a sub-optimal stack that is incapable of delivering enterprise goals.

A practical way to get started is to evaluate how the bank's strategic goals (e.g., growth, profitability, customer engagement, innovation) can be materially enabled by the range of AI technologies—and dovetailing AI goals with the strategic goals of the bank. Once this alignment is in place, bank leaders should conduct a comprehensive diagnostic of the bank's starting position across the four layers, to identify areas that need key shifts, additional investments and new talent. They can then translate these insights into a transformation roadmap that spans business, technology, and analytics teams.

Equally important is the design of an execution approach that is tailored to the organization. To ensure sustainability of change, we recommend a two-track approach that balances short-term projects that deliver business value every quarter with an iterative build of long-term institutional capabilities. Furthermore, depending on their market position, size, and aspirations, banks need not build all capabilities themselves. They might elect to keep differentiating core capabilities in-house and acquire non-differentiating capabilities from technology vendors and partners, including AI specialists.

For many banks, ensuring adoption of AI technologies across the enterprise is no longer a choice, but a strategic imperative. Envisioning and building the bank's capabilities holistically across the four layers will be critical to success.