Banking on a game-changer: AI in financial services

Banks are bullish that artificial intelligence will help them to achieve their business priorities, fuelling back-office efficiency gains, product innovation and new business models. But a recent survey suggests that technology decision-makers have a clear strategy for using AI to achieve their goals—balancing business benefits against increasing complexity and risk.

- Adoption of artificial intelligence (AI) in financial services is maturing as banks implement it across a range of innovative use cases. A new survey of IT executives in banking finds that 85% have a "clear strategy" for adopting AI in the development of new products and services.
- According to a separate global survey of senior banking executives, four in five agree that unlocking value from AI will distinguish winners from losers.
- But firms are treading carefully, balancing business benefits against regulatory complexity and the need to maintain customers' trust. Most banks (62%) agree that the complexity and risks associated with handling personal data for AI projects often outweigh the benefits to customer experience.

As a numbers-based, data-driven industry, the banking sector has provided fertile soil for artificial intelligence (AI). As in other sectors, banks have initially found low-risk and incremental benefits in using AI to automate routine tasks. But according to new research conducted by EIU and supported by Temenos, transformational opportunities for product innovation and new business models are also emerging, making AI a game-changer for banks.

Expanding innovations

When Fitch, a ratings agency, recently announced an investment in US AI startup Sigma, the two companies set out to illustrate the need for AI to help detect fraud with a striking statistic: less than 1% of money-laundering activity is detected.

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An EIU survey of IT executives in the banking sector reveals that **fraud detection is the top application of AI by banks** (see Figure 1). Banks are reaping the benefits of such applications, not only via reduced losses and more efficient use of resources, but through customer experience too. Mastercard, for instance, uses data on transactions and authorisations to predict and detect fraud more precisely and quickly: reducing false positives means fewer legitimate transactions are stopped, improving customer experience.

But AI's uses in financial services go well beyond fraud detection. Our survey also reveals widespread adoption and heavy use in areas such as optimising IT operations and digital marketing.

Following the footsteps of early financial AI pioneers such as Chinese e-commerce giant Alibaba, more firms are using data from customers' digital activity to **predict credit risk and personalise services**. Machine learning techniques allow real-time analysis of customer transactions to accurately calculate default risks. This, in turn, allows banks to offer cheaper loans. In 2020 Barclays partnered with Amazon in Germany to offer credit to shoppers at checkout, leveraging AI analysis of consumers' online behaviours to approve loans in real-time.

AI can be deployed within the back-office to **optimise and streamline IT operations**, to both support people and fully automate processes. Tools such as chatbots can support balance inquiries and fund transfers, reducing the workload from contact centres and internet banking channels, and giving employees more time for value-add work.[1]

When it comes to the front-office, AI is **boosting digital marketing functions**. AI-driven technologies can track users' actions across websites and social media and help banks to reach potential customers through targeted advertising. By analysing large amounts of data on conversion rates and impressions from digital advertisements, AI can also be used to evaluate the efficiency of marketing campaigns.[2]

Beyond digital marketing, tools such as conversational bots that service basic requests or "smile-to-pay" identification for frictionless transactions are **improving customer experience**. At-scale personalisation also allows banks to anticipate customer needs and offer highly-tailored services, leading to better customer engagement, opportunities to up-sell and cross-sell, and new sources of product innovation.[3]

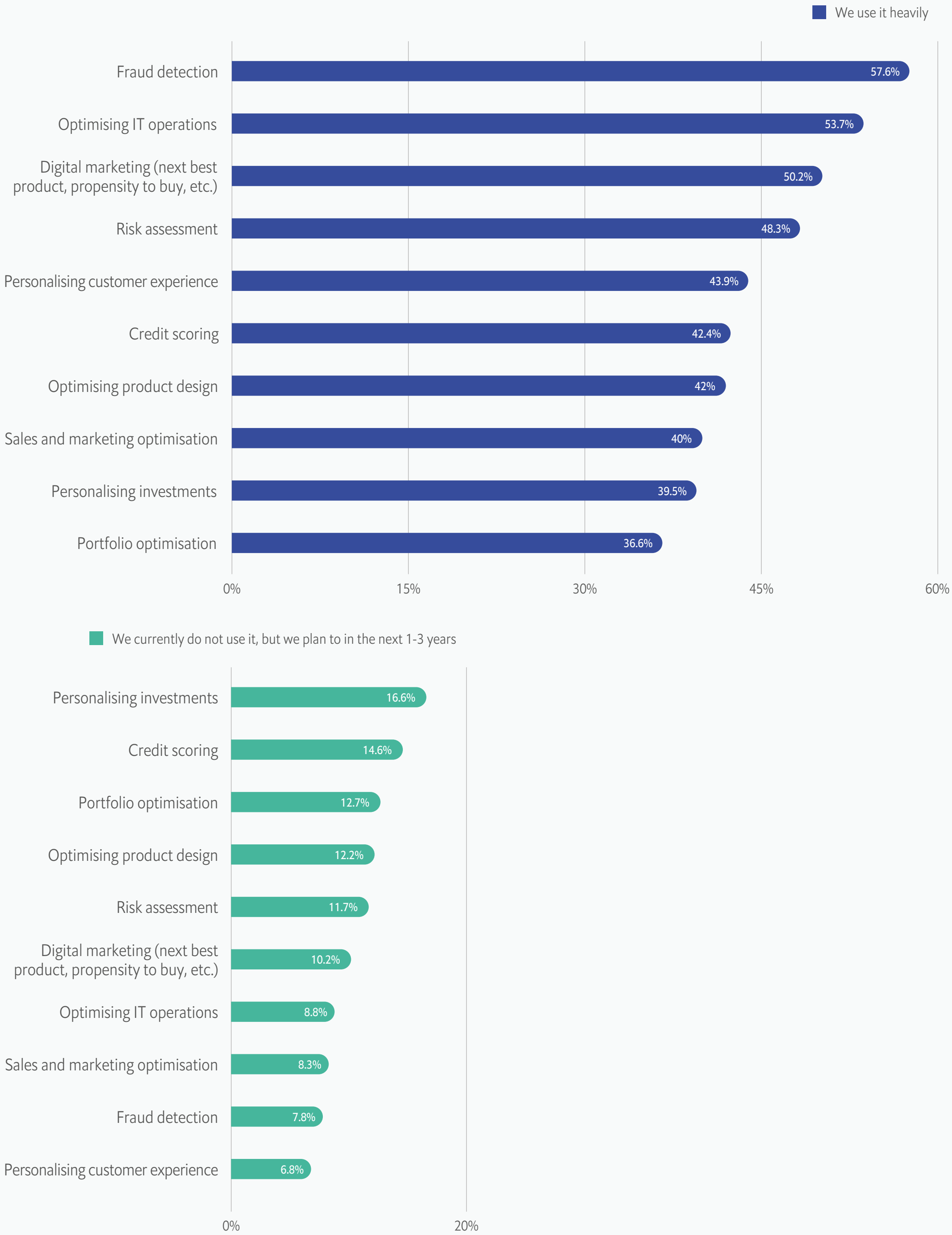
On the wealth management side, AI is **enhancing the investor experience**. Based on big-data analysis, AI-powered tools can help to optimise portfolios, analyse market sentiment and events, and generate risk profiles for traders, allowing firms to offer their clients the most adequate investment products.[4] Investment managers are also increasingly using AI and automation to mine the large amounts of qualitative and unstructured data needed for environmental, social and governance (ESG) scoring.[5]

A key differentiator

Taken together, these use cases show that AI is seen as increasingly essential for business success. Furthermore, they promote the emergence of new AI-first business models where mass customisation can be offered at scale. Almost half of banks surveyed (46%) said that they believe that incorporating AI

[1] https://www.mckinsey.com/industries/financial-services/our-insights/ai-bank-of-the-future-can-banks-meet-the-ai-challenge
[2] Ibid.
[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8500123/
[4] https://www.pwc.com/us/en/tech-effect/ai-analytics/ai-predictions/asset-and-wealth-management.html
[5] https://thechoice.escp.eu/tomorrow-choices/ai-for-good-the-case-of-using-the-technology-for-esg/

Figure 1. To what extent does your organisation use artificial intelligence for the following business uses?



Source: The Economist Intelligence Unit Survey

Banks most heavily use AI in fraud detection (58% use AI heavily and a further 32% use it to at least some extent) and optimising IT operations (54% heavily and 36% to some extent). Almost all banks currently use AI at least to some extent, or plan to in the next three years, across practically all business areas, from operations to customer experience. Top areas for future growth include personalising investments (17% plan to adopt in next 1-3 years), credit scoring (15%) and portfolio optimisation (13%).

Almost half of banks surveyed (46%) said that they believe that incorporating AI into their organisation's products and services will help them to achieve their business priorities "to a great extent".

into their organisation's products and services will help them to achieve their business priorities "to a great extent". That sentiment was particularly pronounced in Latin America (58%), where banks tend to lag behind their global counterparts in AI adoption, leaving significant gains open to early adopters.[6]

In a separate survey of banking executives, canvassing the views of senior executives outside the IT function, 81% reported that unlocking value from AI would be the key differentiator between winning and losing banks.

Banks are certainly investing heavily: JP Morgan Chase is spending US$12bn a year on technology, including AI and machine learning, making it an industry leader. It was one of the first banks to roll out an AI-powered "virtual assistant" to make it easier for corporate clients to move money around the world, whether part of routine payroll operations or multi-million-dollar mergers and acquisitions financing. Now the firm operates an AI research programme to "explore and advance cutting-edge research" in AI and machine learning, as well as related fields like cryptography, to develop solutions for the bank's own use and to develop client services.

In 2021 the bank's asset management business launched a climate change fund that uses an AI-driven natural language tool—named ThemeBot—to scour news articles, regulatory filings and other material to pick stocks in companies that are focused on transitioning to low carbon emissions.

With great power comes great responsibility

Enthusiasm for AI is high, but banks are being deliberate in their approach. This is because the technology, while perfectly impressive in what it can do, is also imperfect in its applicability. "Banks understand its limitations and they want those to be tested and proven before they adopt it," says Alaister Moull, financial services lead at PwC, a consultancy.

> **"Banks want AI to be tested and proven before they adopt it.**
>
> Alaister Moull, PwC

A prominent barrier pertains to bias and trust. AI has been used extensively in algorithmically driven stock, derivatives and foreign exchange trading for years, and has occasionally generated controversy with its pervasive role in markets where humans once dominated

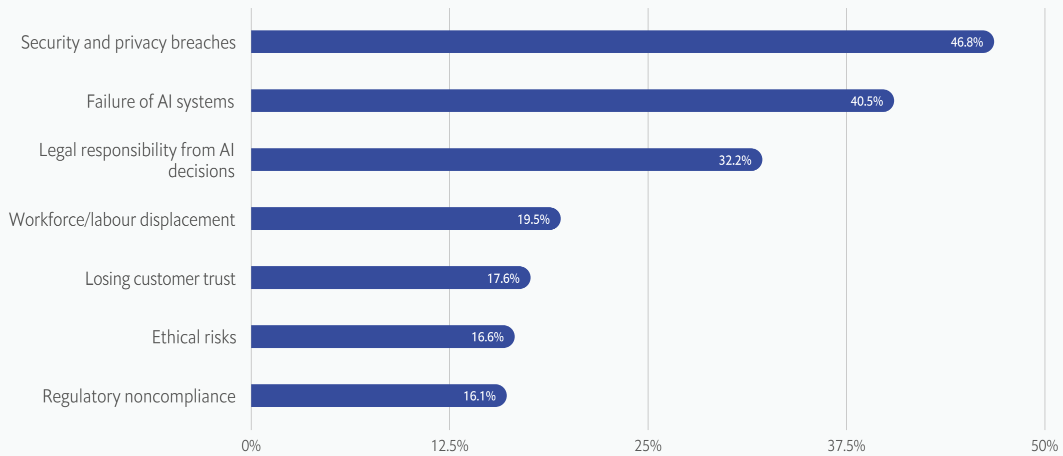
6 https://www.refinitiv.com/perspectives/ai-digitalization/ai-and-ml-is-latam-the-next-big-destination/

activity. Its use in other parts of finance has proved more obviously problematic. Apple experienced an unfortunate AI-related incident in 2019, when algorithms used to decide whether to grant credit lines gave rise to claims of gender bias, after allocating relatively fewer credit lines to women than to men—claims that the card's issuing bank, Goldman Sachs, denied. The issue of unwanted or poor outcomes concerning AI and the use of data looms large.

Moreover, banks are likely to feel increased regulatory pressure when it comes to "explainability", or how an AI system makes decisions. They will need to establish a set of processes that allows users to understand the output created by machine-learning algorithms. As part of a responsible approach to AI implementation, explainable AI provides greater visibility through which to spot and correct potential flaws and vulnerabilities in models. It helps to improve a model's performance and accuracy while ensuring that fairness and transparency are taken into account. Banks that take an active role in developing AI algorithms with stronger explanatory capabilities will be in a better place to win the trust of both consumers and regulators.[7]

Emerging regulation on AI, including that drafted by the EU, sets tough requirements on "high-risk" applications, which include credit-scoring. "Given that the core product a bank sells is trust, banks have plenty of experience with this," says Mr Moull. Indeed, in the survey, Asian banks were particularly mindful of the risks associated with legal responsibility stemming from AI decisions, with 37%

FIGURE 2. In your view, what are the greatest risks to your organisation associated with AI adoption? Select up to two.



Source: The Economist Intelligence Unit Survey

Just under half (47%) of bankers surveyed say that security and privacy breaches pose the greatest risk associated with AI adoption, followed closely by the failure of AI systems (41%). Asian banks are particularly mindful of the risks associated with legal responsibility stemming from AI decisions: 46% identify this as a top risk, compared with a 32% survey average.

[7] https://hbr.org/2021/09/ai-regulation-is-coming

identifying this as a top risk, compared with a survey average of 32%.

As a result of these reputational risks and regulatory headaches, technology decision-makers are being more considered in their approach, prioritising responsible AI adoption and balancing business benefits against increasing complexity and risk. Most banks agree (62%) that the complexity and risks associated with handling personal data for AI projects often outweigh the benefits to customer experience.

Tackling the way that data is best handled involves three things, says Jimmy Ng, chief information officer at DBS, Singapore's largest domestic bank. First, a bank needs to gather all relevant data into a warehouse, or data lake, in a consistent way. This is difficult, because most banks operate multiple different data systems. Second is providing a standard policy for access to the data. And third, banks need to build the infrastructure that facilitates the use of tools and capabilities to make use of that data and associated machine-learning models. "These are challenges that all banks need to face," Mr Ng says.

Balancing act

Bankers in the survey identified privacy and security concerns as the most prominent barrier to adopting and incorporating AI technologies in their organisation (see figure 3), a sentiment particularly strong in Asia and Latin America.

Much of this comes down to knowing what data you are dealing with, says David Griffiths, institutional clients group head of engineering and architecture at Citi. "Before you learn to start walking with AI you need a good handle on data and data architecture," he says.

One way to think about handling data is by looking at how AI can overcome the naturally siloed arrangements of functions across financial institutions. There are obvious benefits to using AI to cut across silos. For example, loan origination has typically been done by a front office team in one part of the bank, using highly classified information about businesses requiring a corporate loan. Yet the credit risk decision on that loan may rest with a separate team using a different system containing the relevant data.

Joining the dots involves relying on manually intensive human intervention, sometimes by one person. "A lot of banks are trying to reconstruct that same person with all those relationships, but it's often hard, as the systems have not been set up to facilitate that historically," explains Kate Platonova, chief data officer at HSBC, adding that so-called "challenger banks" don't face this issue as much, as they are "set up in a very customer-centric way already".

Some financial services firms are moving faster than others in using AI for customer-facing uses. But the pace at which banks

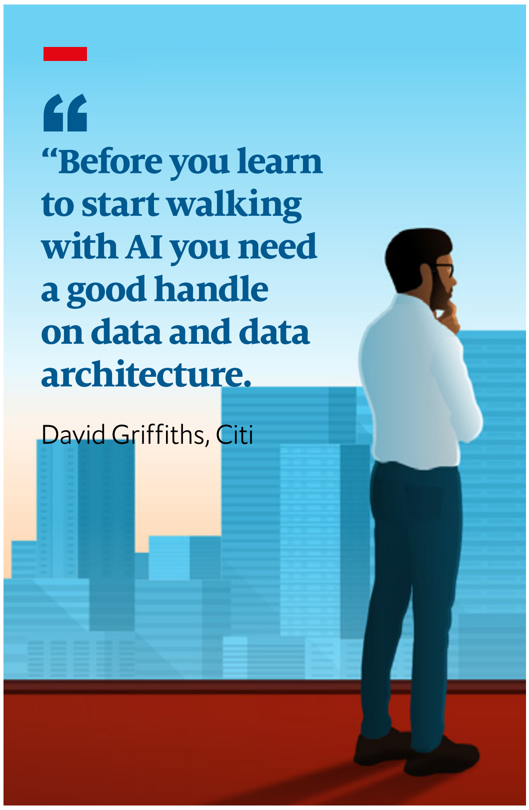
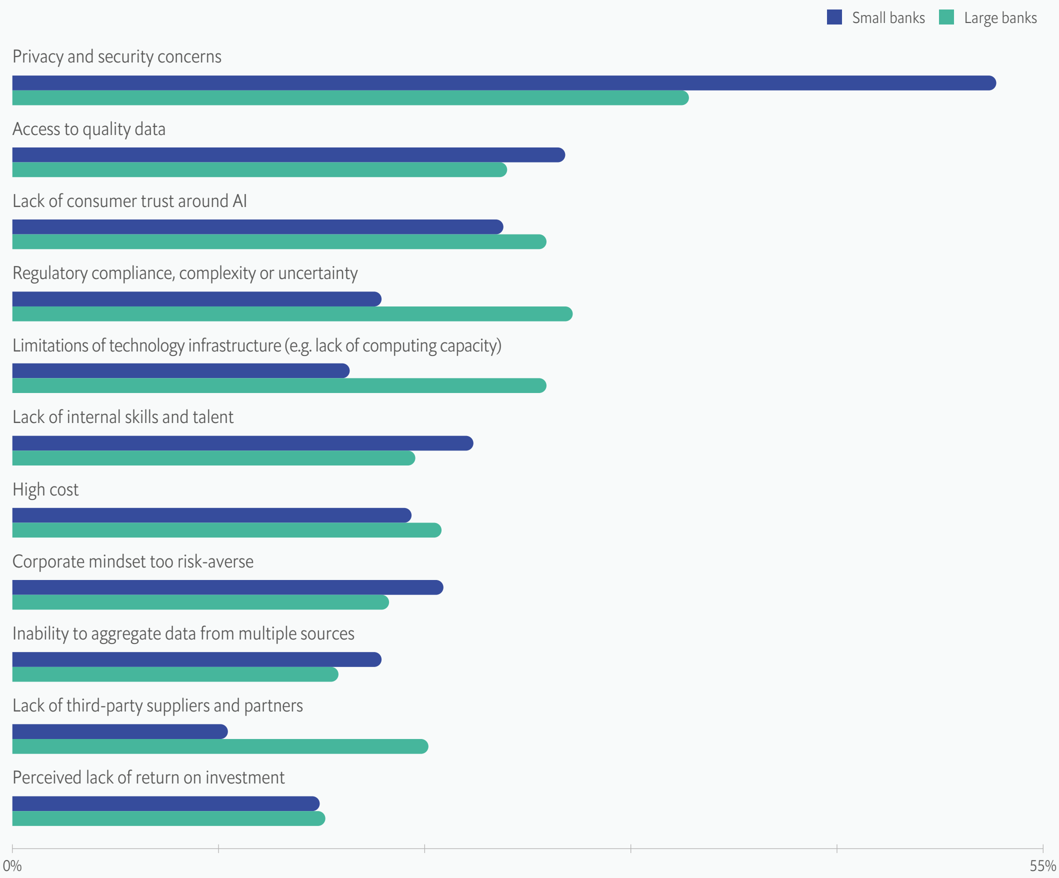


FIGURE 3. In your view, what are the most prominent barriers to adopting and incorporating AI technologies in your organisation? Select up to three.



Source: The Economist Intelligence Unit Survey

Smaller organisations—those whose parent company's assets are below US$10bn—are more likely than larger ones to call out security and privacy concerns (by 52% to 36%). Conversely, larger banks are more likely to struggle with regulatory compliance, complexity or uncertainty, or limitations of technology infrastructure.

are likely to extend AI usage beyond certain functions is being done carefully. "AI is an active topic of conversation," says Mr Griffiths. "We are cautiously moving forward, and it's going to be a long journey."

Although AI is clearly a key asset for banks, driving down costs, improving customer experience and boosting product innovation, firms need to implement it correctly. Establishing a holistic strategy that considers infrastructure, explainability, scalability and skills will help banks to mitigate risks related to trust, bias and security, and seize the opportunities presented in their fast-evolving markets.

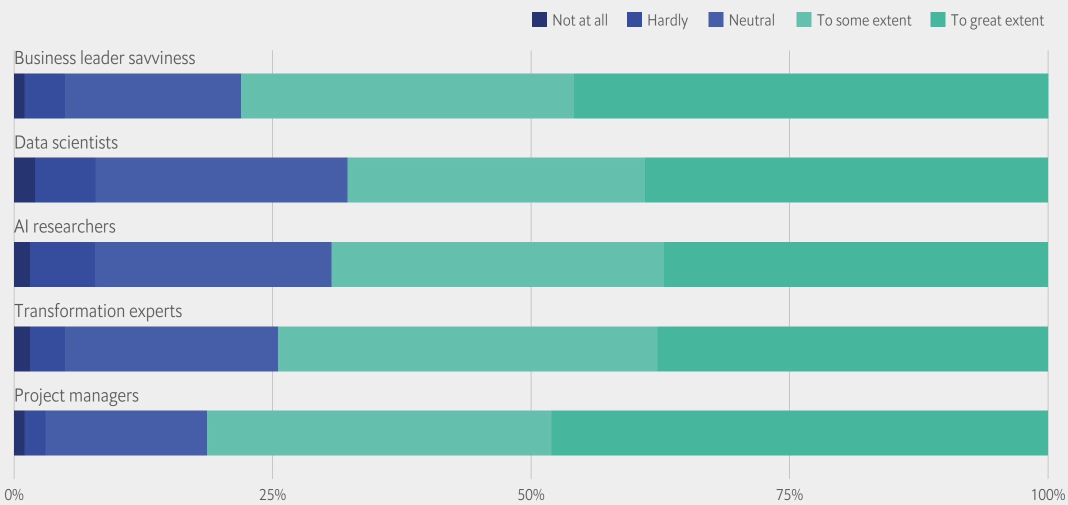
People-powered AI

Leveraging AI successfully depends significantly on people, especially in relation to company culture and skills.[8] Banks will need to promote a culture where AI is perceived as an opportunity rather than a threat, and where employees themselves actively search for new use cases to free up their time for higher-level work. Banks will also need to make sure that they secure the right skills for their increasingly AI-powered business models.

Yet just under one in four firms (22%) say that lack of internal skills and talent is a top barrier to incorporating AI technologies in their organisation. This is especially true at smaller banks (as a top-four concern, see figure 3), which may lack bigger banks' budgets and clout to secure the best AI talent.

Although firms are confident about business leader savviness when it comes to AI and have technologically literate project managers, they will need to concentrate their efforts on attracting AI researcher and data scientist profiles.

FIGURE 4. To what extent does your organisation have the following internal skills and talent to advance your objectives when it comes to adoption of new technologies such as AI and cloud computing?



Source: The Economist Intelligence Unit Survey

8 https://sloanreview.mit.edu/projects/the-cultural-benefits-of-artificial-intelligence-in-the-enterprise/