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The Future of Retail Banking Report 2018/19

In association with:

**Chartered Banker**

# Chapter 3

## Artificially-Intelligent Banking

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# Artificially-Intelligent Banking

Emerging technologies often attract hype, leading to a surge of investment and over-egged claims that, when unfulfilled, lead to a loss of confidence and rapid contraction of funding. AI, however, has been emerging for longer than most technologies and has weathered a series of boom-and-bust cycles. Could this time be different? The most recent spending surge has seen a rapid acceleration in AI capabilities with the technology now operational in a wide range of sectors, from finance to healthcare.

Financial services could benefit massively from the deployment of AI, which has the potential to free up knowledge workers from mundane, repetitive tasks such as generic customer queries, mortgage reviews and compliance reporting, enabling human workers to focus on higher value tasks, while transforming the customer experience by introducing personalised recommendations, self-serve tools and faster processes. New entrants, able to design their user experience from scratch, have embedded AI from the start to deliver low-touch solutions that delight customers. Users of the Lemonade app, for example, can get insured in 90 seconds, with claims settled and paid out in three minutes, while customers of Atom Bank can login using face and voice recognition, and the smart algorithms behind budgeting and saving app Plum allow customers save towards their goals effortlessly.

Incumbent banks, of course, face more of a challenge when it comes to building AI-powered customer journeys. The likes of Monzo and Plum were built by Millennials for Millennials, with an understanding of the power of data and an appetite for ceaseless innovation on behalf of the customer. Traditional banks, however, are having to unpick decades, and in some cases centuries, of ingrained cultural conservatism and siloed thinking in order to work with the speed, agility and ingenuity required in the digital age. Both types of organisation are recruiting from the same pool of data scientists, data engineers and machine learning experts – not to mention all the finance and compliance roles that need to be filled too – in what one FinTech insider has called a “war for talent”<sup>23</sup>.

## War for talent

Data scientists, who blend computer science skills with the commercial understanding to focus on business outcomes rather than pure tech, are at the centre of this battle. This war is already driving up salaries and making it harder to fill vacancies: studies from the US show that data scientist roles remain open for 45 days on average, one working week longer than the market average, despite the above-average remuneration<sup>24</sup>.

**75%** believe that as the use of AI intensifies, banks will struggle to recruit the necessary expertise to compete

This skills gap is a real and present danger to banks’ AI ambitions: three-quarters of our surveyed bankers believe that as the use of AI intensifies, banks will struggle to recruit the necessary expertise to compete.

Yet there is good news. Banks are not only sponsoring hackathons to reach out to coding talent but also teaming up with universities to develop degree programmes that will produce the skilled graduates their organisations need: HSBC, analytics firm SAS and the Data Lab have collaborated on an MSc course in Data Science for Business that will run at the University of Stirling. What’s more, Gartner, Inc, expects AI will partly close the data science skills gap, predicting that by 2020 more than 40 per cent of data science tasks will themselves be automated as “citizen data scientists” are able to use the latest technology to bridge the gap between mainstream self-serve analytics by business users and the advanced analytics techniques of data science professionals<sup>25</sup>.

## Data barriers

However, it is not just the scramble for talent that could jeopardise the success of AI. Almost seven out of ten of our respondents say poor data management is a barrier to the uptake of AI within their organisation and six out of ten cite a lack of data. Legacy issues around data are not new in the banking sector but they will certainly inhibit the deployment of effective AI projects, allowing more agile data-centric start-ups to power ahead.

**69%** say poor data management is a barrier to the uptake of AI within their organisation

<sup>23</sup><https://www.bloomberg.com/news/articles/2018-01-23/banks-and-fintechs-are-duelling-in-a-war-for-talent>

<sup>24</sup>The Quant Crunch: How demand for data science skills is disrupting the job market, IBM 2017

<sup>25</sup><https://www.gartner.com/en/newsroom/press-releases/2017-01-16-gartner-says-more-than-40-percent-of-data-science-tasks-will-be-automated-by-2020>

**75% fear incomplete or inaccurate data will lead to negative outcomes**

**84% similarly fear regulatory and liability issues**

Bankers are also worried that senior managers are taking too cautious a lead when it comes to AI, citing management concerns that incomplete or inaccurate data will lead to negative customer outcomes (75 per cent of respondents) and regulatory and liability issues arising from AI-driven decisions (84 per cent).

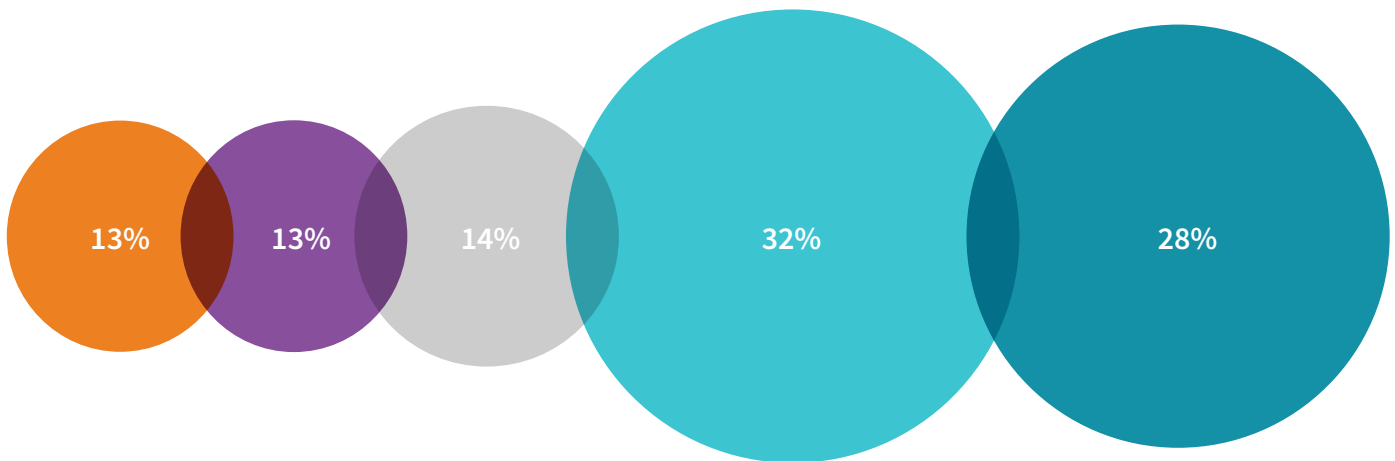
Of course, these are valid concerns but they are not insurmountable. Leaders need to have the vision to understand the potential of AI, and then make the right decisions to rapidly overcome the data management and governance hurdles.

### Chatbots - the new face of customer service

When it comes to using AI to improve the customer experience, chatbots are an easy win. Research suggests that there’s a four-minute-plus time saving per chatbot enquiry when compared with traditional call centres, with messaging-based banking bots expected to deliver a US\$0.70 cost saving per chatbot interaction by 2022<sup>26</sup>. Little wonder our survey shows three out of five banks are already consistently using chatbots and a further 14 per cent are piloting the technology.

#### To what extent are chatbots being used in retail banking?

■ Not at all and no immediate plans    
 ■ Not at all but we plan to within 24 months    
 ■ In pilots only    
 ■ To a significant extent    
 ■ To a massive extent



It seems customers have embraced the concept of self-service, guided, when needed, by intelligent assistants. Indeed, this is such a marked trend that traditional agent-assisted customer service appears to be in rapid decline: one study found the number of people who contacted customer service over the phone declined 10 per cent in the last two years and contact with customer service overall has dropped seven per cent over the same period. Instead, it seems, customers would rather resolve issues themselves: the same survey found a third of consumers, rising to 52 per cent of Millennials, would welcome doing all customer service through self-service, intelligent assistants or chatbots<sup>27</sup>.

The driver behind this is changing customer expectations. It’s speed and convenience rather than the human touch that counts for the modern consumer: 45 per cent of consumers say they don’t care if an online purchase or customer service interaction is performed by a chatbot or a live agent as long as it is handled quickly and accurately<sup>28</sup>. The good news is that the latest generation chatbot, with

<sup>26</sup><https://www.prnewswire.com/news-releases/juniper-research-chatbots-a-game-changer-for-banking--healthcare-saving-8-billion-annually-by-2022-621743423.html>

<sup>27</sup><https://www.aspect.com/company/news/press-releases/the-end-of-customer-service-as-we-know-it-aspect-software's-consumer-experience-index-survey-shows-self-service-ai-redefining-how-consumers-view-customer-service#>

<sup>28</sup><https://blogs.aspect.com/customers-pay-for-better-customer-service-experience/>

machine learning and natural language processing capabilities, it is possible to generate interactions that are fast, accurate and human-like, with the potential to intelligently hand-off to a human agent for the resolution of more complex issues.

And for customer service agents – a role typically associated with high levels of dissatisfaction and churn – the introduction of chatbots can be a boon, with 68 per cent reporting they feel better, more satisfied and committed to their jobs when chatbots handle easier questions, freeing them up to handle more complex questions and provide a better customer experience, while also creating opportunities to shine for management<sup>29</sup>.

## Personalisation of the customer journey

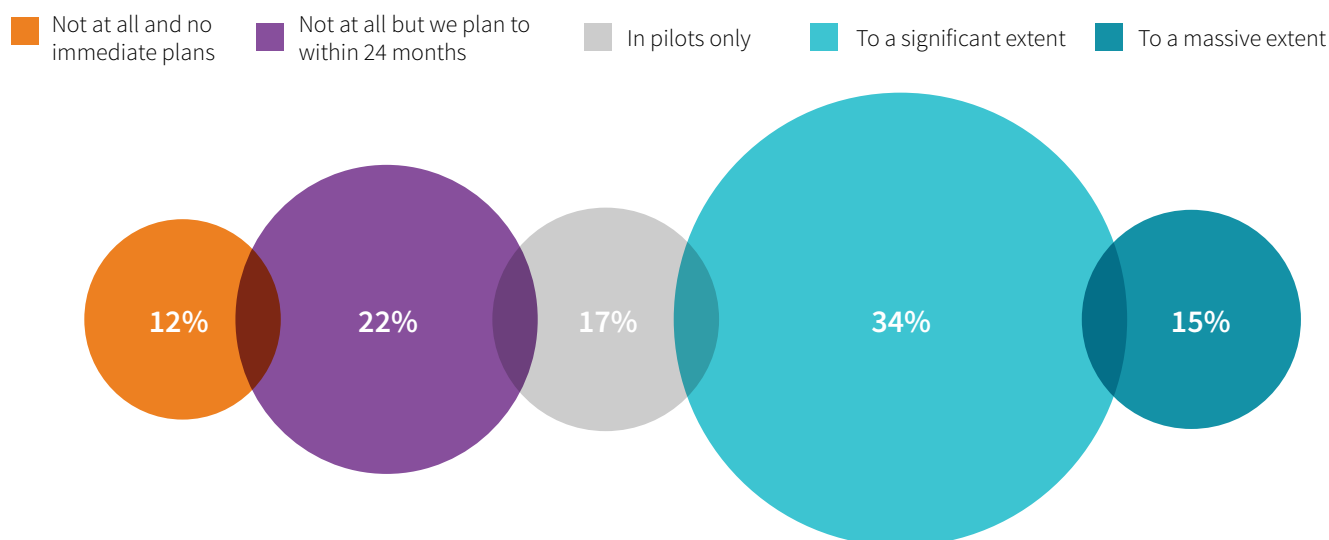
Research suggests that customers tolerate their banks rather than like them: one study found almost six out of ten consumers consider their primary financial institution as a ‘necessary utility’ and only 37 per cent saw it as a trusted partner<sup>30</sup>. What’s more, the same survey found less than one-third (31 per cent) of consumers surveyed thought their financial institution knew their needs well, and only slightly more (34 per cent) thought their bank had their best interests in mind. This lack of engagement is dangerous when new entrants have the technology and brand messaging to achieve unprecedented levels of customer engagement.

AI will be a powerful tool in converting a transactional relationship, defined by apathy and distrust, into an engaged partnership, where banks truly understand a customer’s individual needs and design smart solutions to meet those needs. And here banks have a head start: incumbents have the scale and the historic data to feed algorithms with huge amounts of data in order to build real granularity into their models and offer customers highly personalised experiences.

Personalisation comes in many forms, and tolerance for it will vary from customer to customer, but customers know from their own experiences with the likes of Netflix and Amazon when it’s working well. They want their bank to know them so they don’t have to constantly repeat their personal information; it’s one reason many challengers have embraced biometrics to deliver secure, low touch access that bypasses cumbersome security checks that make customers feel unloved and unwanted. AI can also gather together all the information an agent needs to ensure that interactions with customers are not only efficient but also personal and empathetic. It’s these little touches that make all the difference to the customer experience.

Customers know good personalisation when they experience it, whether it’s Atom Bank’s bank-of-one model or Metro Bank’s Insights app, which uses AI to analyse real-time spending habits and deliver personalised prompts to help customers make better financial decisions. These are solutions that customers welcome, and which only AI can make possible and it’s heartening to see that almost half our respondents are already using AI to personalise the customer experience, and a further 17 per cent have active pilots underway.

### The extent to which banks are using AI to personalise customer experience



<sup>29</sup><https://www.aspect.com/company/news/press-releases/interest-in-handling-more-complex-questions-among-customer-service-agents-rises-29-from-a-year-ago-as-agents-see-opportunities-as-ai-expands-in-customer-service>

<sup>30</sup>Digital Banking Report, Personetics, 2016

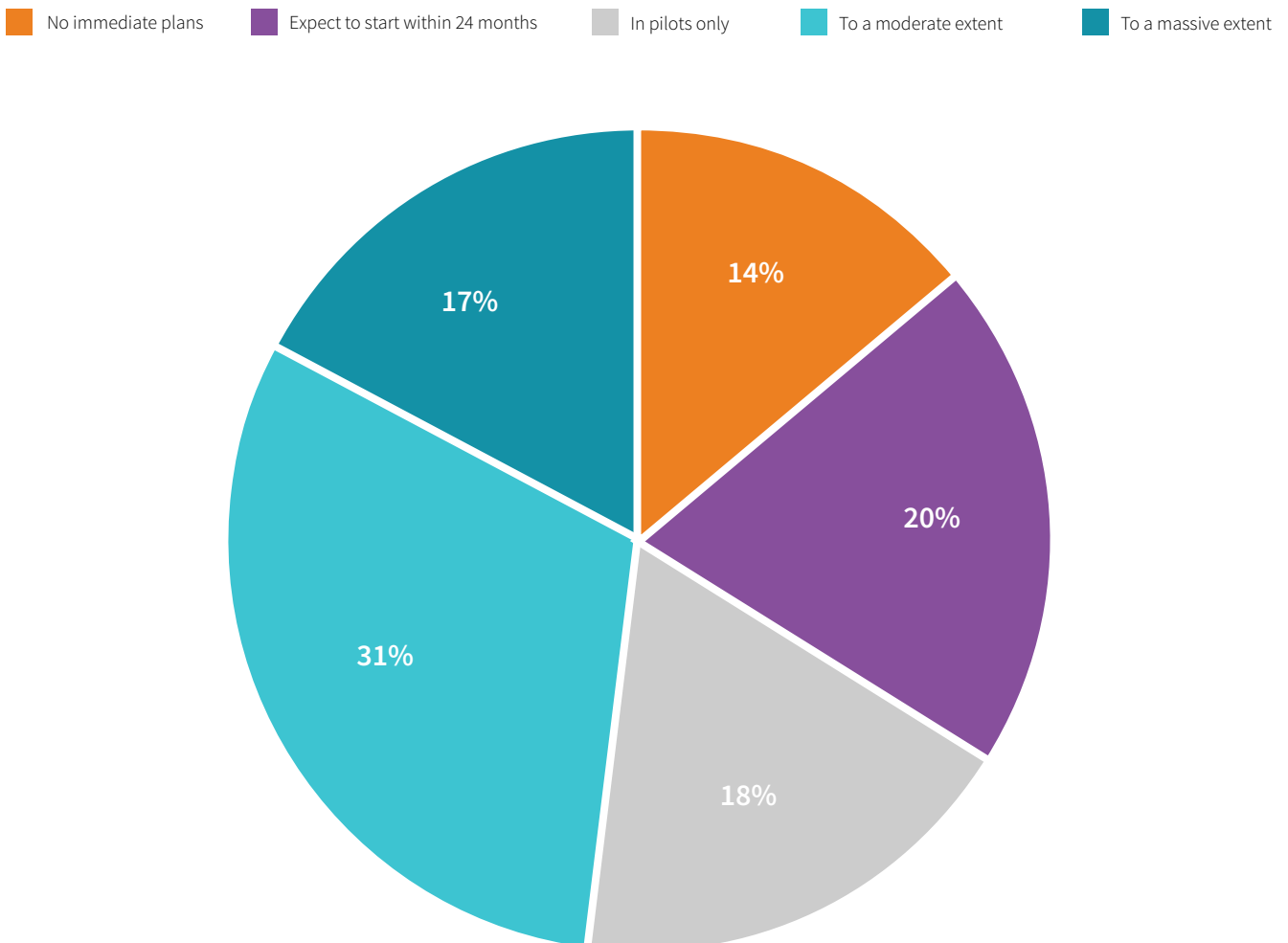
## AI-driven value-added services

The engaged customer is a tantalising prospect for banks battling to maintain margins. By offering additional services, there's the potential to not only generate additional revenue streams but to also collect more data on customers, creating a virtuous circle as AI converts that extra data into further insights to transform the business.

Spain's BBVA, which has been a pioneer of digital innovation, uses big data functionality to offer data-driven value-added services to its customers: Economy is a financial wellbeing tool, BBVA Valora allows users to calculate the best price at which to rent, sell or buy a home and Baby Planner is a tool to better understand how having a baby will affect their finances. The bank is also trialing a new app that uses biometric technology to automate payments, and allows users to make restaurant reservations and place orders from a smartphone so that when they arrive there's a table waiting for them and they can leave after the meal without having to ask for the bill or manually pay.

It's an example of a bank stepping outside its core service to add new services that make life easier for customers, while also generating more data for the banks' algorithms. AI-powered value-added services are already on the way to becoming mainstream practice in an industry seeking to build new value chains: almost half our surveyed bankers are using AI to offer value-added services to customers and a further 18 per cent have a pilot underway.

**The extent to which banks are using AI to provide value-added services**

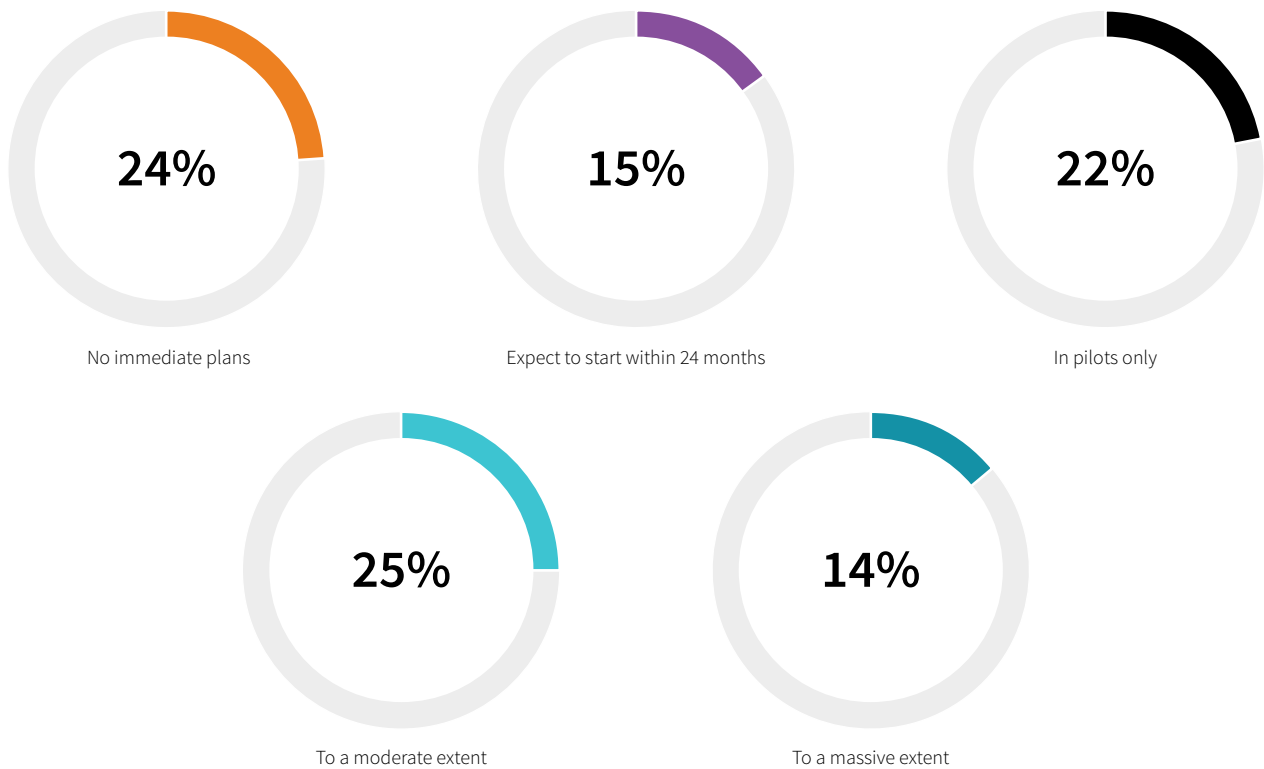


## Robo-advice

Much of the inherent distrust of banks stems from past mis-selling scandals and the application of swingeing fees and hidden charges. Trust is built when customers feel they are being dealt with fairly and that means being upfront about fees, clear about terms and conditions and using customer interactions to focus on customer needs rather than an opportunity to upsell higher margin products. It's an area where FinTech and new wave challenger banks excel, providing smart budgeting and investment tools to help customers take control of their finances and plan for the future they want.

Incumbents need to step into this space if they are to compete effectively. Delivering best-in-class personalised financial and investment advice at scale would be economically impossible using human advisors but can be achieved by AI. Our survey finds this is a growing area of focus for banks: 39 per cent are already using AI to deliver robo-advice to customers and a further 22 per cent have a pilot underway.

### The extent to which banks are using AI for robo-advice



There are concerns, however, about the governance of robo-advisors. More than six out of ten (61 per cent) said concerns about being able to show an audit trail for compliance purposes was a significant constraint on using AI for financial advice and over half said the senior management of their organisation was very concerned about the regulatory and liability issues arising from AI-driven decisions. It's vital that banks address these concerns - after all, AI is not infallible and can amplify internal biases putting banks at risk of breaching data protection and

**61%** said concerns over being able to show an audit trail was a significant constraint on using AI for financial advice

equality laws – but with the right leadership, governance and carefully selected vendor partnerships there is no reason why regulatory and compliance concerns should impede uptake of this game-changing technology.

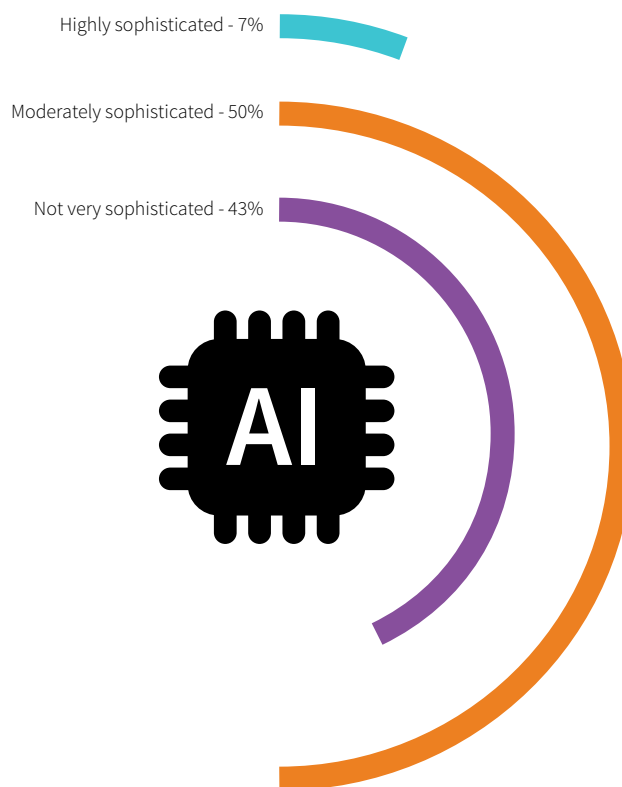
### Sophistication gap

Although a significant proportion of banks appear to be deploying AI across the customer experience, it seems our cohort of bankers are unconvinced by efforts to date: when asked to compare their bank's use of AI to what is now possible, just under half (43 per cent) said their usage was not very sophisticated. Just seven per cent deemed their organisation's use of AI to be highly sophisticated.

**52%** said the senior management in their organisation is very concerned about the regulatory and liability issues arising from AI-driven decisions

Just **7%** think their organisation's use of AI is highly sophisticated

### How sophisticated do banks see their AI as being against what is now possible?



This is worrying. Unlike previous disruptions, such as telephone banking or mobile banking, this technology learns as it goes, making calculations and recommendations faster than any human and taking organisations to places they couldn't possibly go alone. The capability gap between the AI haves and have-nots, once opened, will quickly become unbridgeable. Banks need to address the barriers holding back their AI sophistication as a matter of urgency.

### By Richard Price, Head of Financial Services – UK & Ireland, TIBCO

AI is a nebulous term that acts as a catch-all for a wide-range of technologies with some degree of human-like cognition. It's clear from the survey results that a lot of banks are experimenting with AI solutions, but only eight per cent think their usage is highly sophisticated. Instead, many banks are opting for "AI-lite", such as chatbots or automation of processes, rather than harnessing the full transformational potential of the technology. Banks could, for example, use AI to improve human decision-making, whether that's fine-tuning the accuracy of credit-decisioning or delivering real-time alerts on changes in market conditions.

New entrants may have a potential technology advantage for initial speed to market but traditional banks still have a massive advantage, namely the sheer volume of GDPR compliant data they hold on their customers (arguably, only governments and telcos hold more data on citizens and customers). However, this advantage is entirely dependent on them being able to unlock the value from that data in order to feed a working, credible AI strategy. We know from our clients in other industries that this can be truly transformational, particularly when it comes to customer engagement.

The best outcomes happen when the technology is used to enhance the human workforce, gathering and preparing data in formats that can be readily used by knowledge workers to add real value to the bank. This is a challenge, however, in data-rich organisations because the more data there is, the more hypotheses there are to explore, ensuring that the workload of data scientists increases more quickly than their output can be usefully disseminated into the business. This is why our larger clients are now using AI for intelligent workforce management to ensure AI capabilities can be deployed by Data Citizens across the business to deliver the smarter, faster and more personal solutions that today's customers expect.



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