MONEYLIVE

The Future of Retail Banking Report 2018/19

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Forewords

Of all the forces weighing on the banking industry, from open banking to Brexit, there is perhaps none as fundamental as the change in consumer behaviour. For decades, banks have relied on customer inertia as a valuable component in the business model; even mis-selling scandals and the launch in the UK of the seven-day switching service have failed to prick customer apathy.

Yet, as the findings of our third annual report into the Retail Banking industry make clear, customers are changing. Their interactions with digital technology, from messaging services that manage their friendships to one-click shopping and the taxi that comes at the swipe of a smartphone, have created an expectation for that same immediacy and convenience in other areas of life. And there are plenty of new wave challenger banks and FinTech start-ups that are more than ready to serve this appetite for smart solutions that give customers more control over their money and make life better.

Banks are aware they need to change. We find an industry not only alert to the possibilities of chatbots, robotic processing automation, artificial intelligence and voice-assistants but also planning fundamental business model innovation in the next five years as banks launch marketplaces and anticipate generating revenues from non-FS services as they seek to emulate the industry-blurring success of the biggest platform businesses.

This is encouraging, yet there is still much work to be done if banks are to keep pace with changing customer behaviours. Failure to act could see banks lose that all important customer relationship and find themselves increasingly irrelevant in a world designed to satisfy the customer's desire for convenience. Our report makes it very clear: the time to act is now.

Juliet Knight
Director
Marketforce

Banking continues to be shaped by digital and data-driven innovation, with the pace of change continuing to accelerate as AI and automation transform operations, from customer onboarding to back-office processing.

This transformation will not be the preserve of FinTech start-ups. This timely report finds that existing banks are set to leverage next-generation technologies to transform their operations, with fundamental business model innovation on the cards and the digital capability gap between incumbents and FinTech narrowing. It's a time of great challenge and also great opportunity; banks now have the tools to reconfigure the banking value chain and make a real difference to the financial health of their customers.

As bankers and financial services professionals, we should look forward with optimism. The growing use of AI and robotic process automation will undoubtedly reshape the workforce, reducing headcount in some areas, while creating new opportunities in others. Our challenge will be to ensure we equip our staff with the right skills to not only deliver AI and RPA solutions but to ensure the resulting outputs are used to augment human decision-making and improve customer outcomes.

Importantly, the introduction of these new technologies must never over-ride key banking principles of trust, transparency and fairness. The outcomes of the powerful algorithms that shape our modern world must be transparent and auditable.

Never has there been a greater need for knowledgeable and skilled professional bankers, like the 35,000 members of the Chartered Banker Institute, with the deep understanding and experience to make sure these powerful new technologies are developed and deployed in customers' best interests at all times.

Simon Thompson FCIBS
Chief Executive
Chartered Banker Institute

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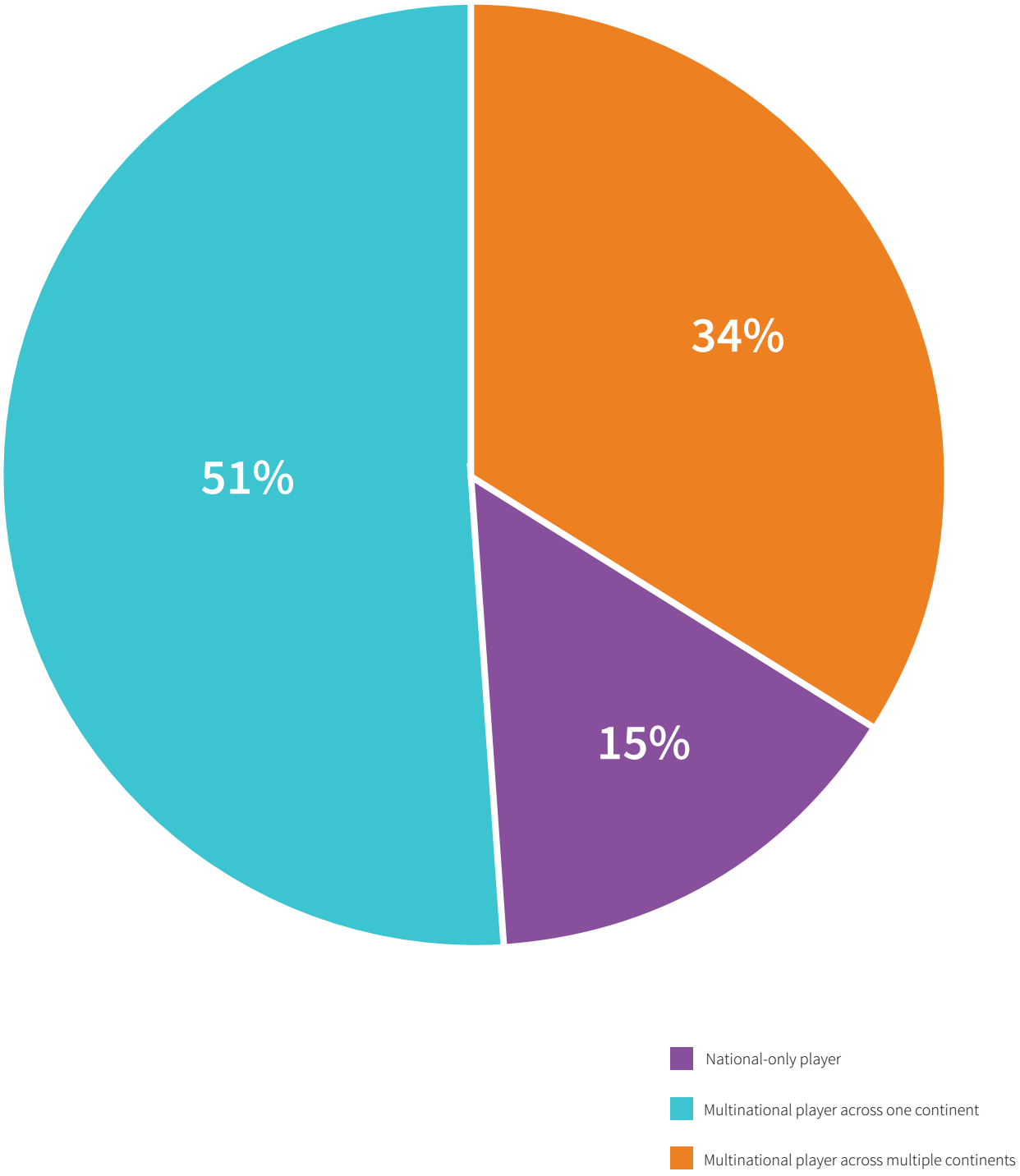
Methodology

This report is based on research conducted by MoneyLIVE and the Chartered Banker Institute in October 2018. We surveyed over 600 senior figures from across the banking sector.

Organisation geography:



Chapter 1

Open Banking: Adapting to a Shifting Competitive Landscape

Open Banking: Adapting to a Shifting Competitive Landscape

The digital banking revolution is now in its second wave. The first took the high street model and put it online, allowing customers to check their balances, make transfers and pay bills round the clock from the comfort of their own homes. This convenience and control proved a winning combination: today over 70 per cent of UK adults use online banking[1]. Mobile banking gave customers this same convenience on the go and continues to grow in popularity: there were 5.5 billion log-ins to banking apps in the UK during 2017, up 13 per cent on the previous year[2].

A second wave of disruption is now sweeping the industry as the vanguards of the digital revolution take our online bank accounts and do something very different with them. Innovators are using data, artificial intelligence (AI) and a new way of thinking to come up with financial services solutions that are convenient, personalised, fast and transparent. This is not banking as we know it but banking as it could be.

The second wave is not just powered by technology; it also marks a huge regulatory shift. Open banking, mandated by the EU's Second Payment Services Directive (PSD2) and the UK's open banking agenda, is accelerating disruption by requiring banks to develop open application programming interfaces (APIs) that enable regulated third parties to access customer-account information and make payments on the customer's behalf. Open banking makes banking smart, fast and highly competitive. Customers will be able to aggregate all of their data from different institutions into one bank's portal to get a single view of their financial lives. Innovators will leverage this to offer customers smart solutions that give them unprecedented insight into their finances and help them make better financial decisions. Plum, for example, is an app that uses smart algorithms to analyse your spending habits. As well as automatically diverting sums into a Plum ISA, the app provides helpful insights into where your money goes, sends alerts when it finds a better deal on energy bills and lets you switch to that deal in a few taps.

Empowered by open banking, consumers can effectively build their own virtual bank by combining the offerings of a range of providers, from savings to payments, each of which has cherry-picked a different part of the banking value chain.

The rise of APIs is also accelerating the development of digital ecosystem platforms that bring together vast communities of customers, suppliers and partners, leveraging big data and advanced analytics to optimise matches between buyers and sellers. These tech titans generate markets of enormous breadth and efficiency, and, for users, deliver a level of data-driven convenience and personalisation that is hard to resist.

The financial services sector is already seeing the emergence of early-stage digital platforms in the form of the marketplaces created by new wave challenger banks Starling and Monzo. More developed offers are underway in the East, where Tencent and Alibaba in China and Rakuten in Japan have placed themselves at the centre of their users' daily lives, offering services that cross many industry boundaries, from healthcare to transport, chat to financial services. In this report last year, we found 86 per cent of bankers expected online lifestyle portals, through which consumers are able to manage every aspect of their daily lives, would become mainstream for the delivery of banking services by 2023. Numerous commentators anticipate that in Europe, Amazon, Facebook, Google and quite possibly the Asian tech titans will vie to dominate the digital platform space, leveraging their advanced data capabilities and brand reach to further weave themselves into the fabric of their users' daily lives. Consumers, increasingly addicted to convenient solutions, will find this hard to resist, increasingly shifting more of their lives on to the trusted platform that delivers the frictionless, highly personalised one-stop-shop experience they crave.

FinTech uptake

Of course, thus far, the biggest incumbent banks have squarely dominated in banking. Even the 2008 financial crisis, a series of mis-selling scandals and the introduction of the seven-day switching service have failed to dent their dominance. Despite the best efforts of challenger banks and the Current Account Switching Service (CASS), 70 per cent of UK current accounts are still held by the Big Four banks – Lloyds, Barclays, HSBC and RBS – a level that has barely changed since 2005[3].

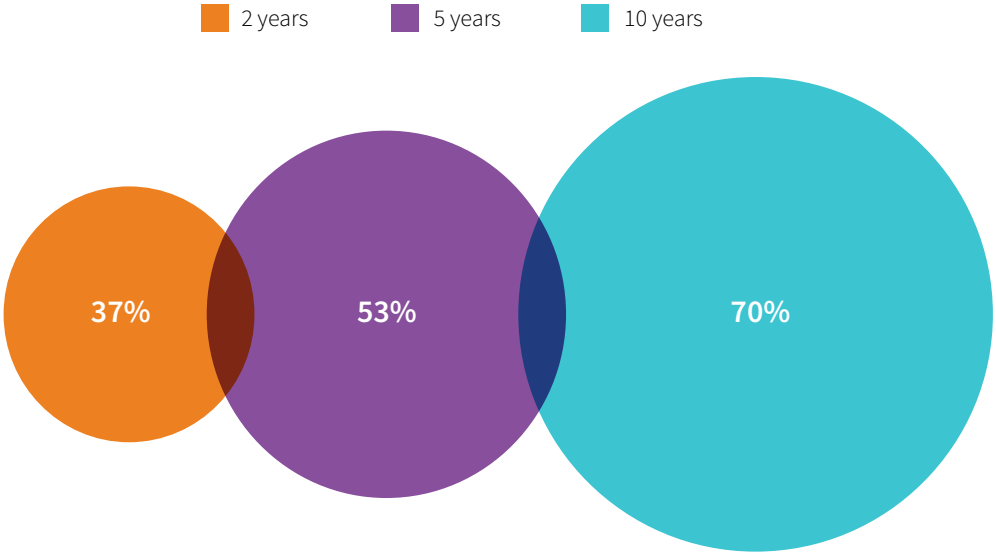
However, research suggests that one in three digitally-active consumers around the world already uses FinTech services, with money transfer and payments solutions driving adoption[4]. The banking industry is understandably rattled, with one survey revealing almost nine out of ten bankers are worried that part of their business, worth an estimated 24 per cent of revenues, is at risk to standalone FinTech companies[5].

37% of customers are expected to use non-traditional financial services firms within 2 years

Our surveyed bankers back these findings, on average expecting 37 per cent of customers to use non-traditional financial services firms within two years, rising to 53 per cent in five years and 70 per cent in 10 years.

[1] *The Way We Bank Now, 2018, Finance UK*
[2] *The Way We Bank Now, 2018, Finance UK*
[3] *https://www.bbc.co.uk/news/business-44522630*
[4] *FinTech Adoption Index, 2017, EY*
[5] *Global Consumer Banking Survey, 2016, EY*
[6] *Global FinTech Report, 2017, PwC*

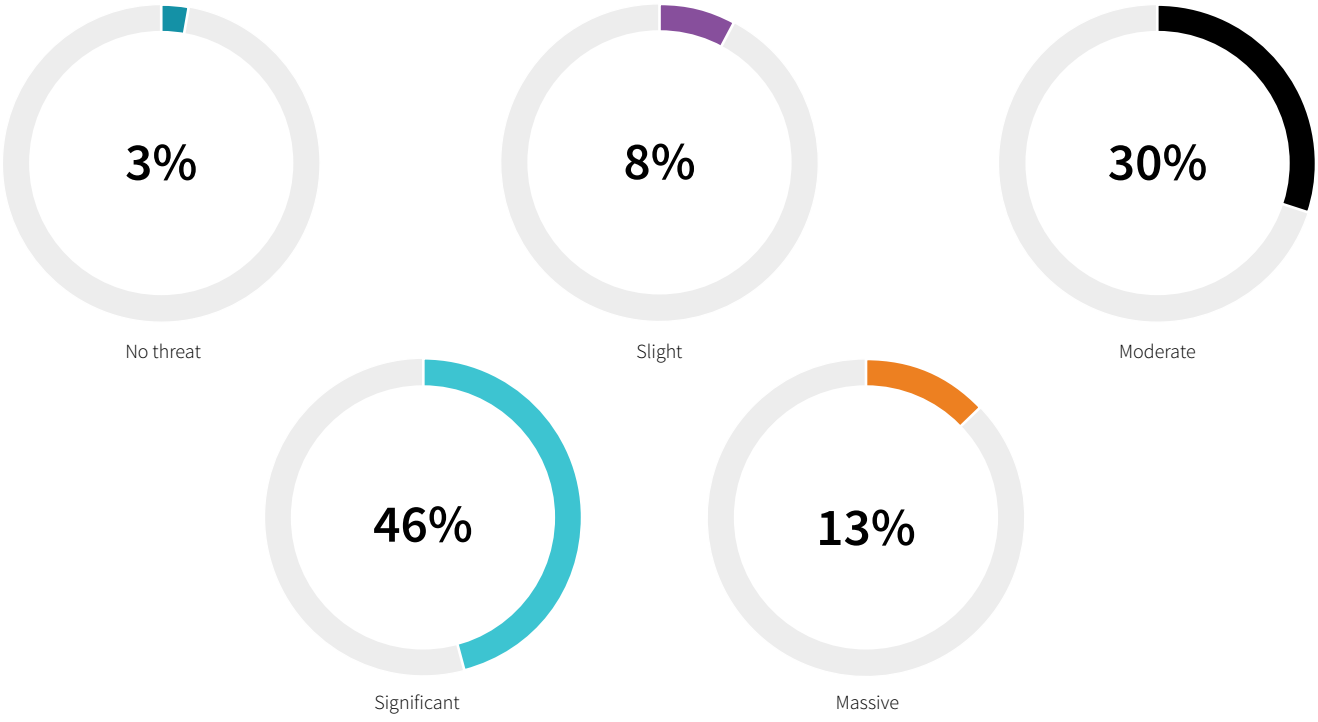
Percentage of banking customers expected to use non-traditional financial services firms in 2, 5 and 10 years



Incumbent complacency?

Almost six out of ten (59 per cent) of the bankers we surveyed perceive new intermediaries to be a significant threat to their relationship with their customers. However, this leaves a significant portion of the industry who are relaxed about the transformation underway. More than one-in-three rate the threat of new intermediaries as only moderate or slight.

How great a threat do new intermediaries pose to banks' relationships with their customers?

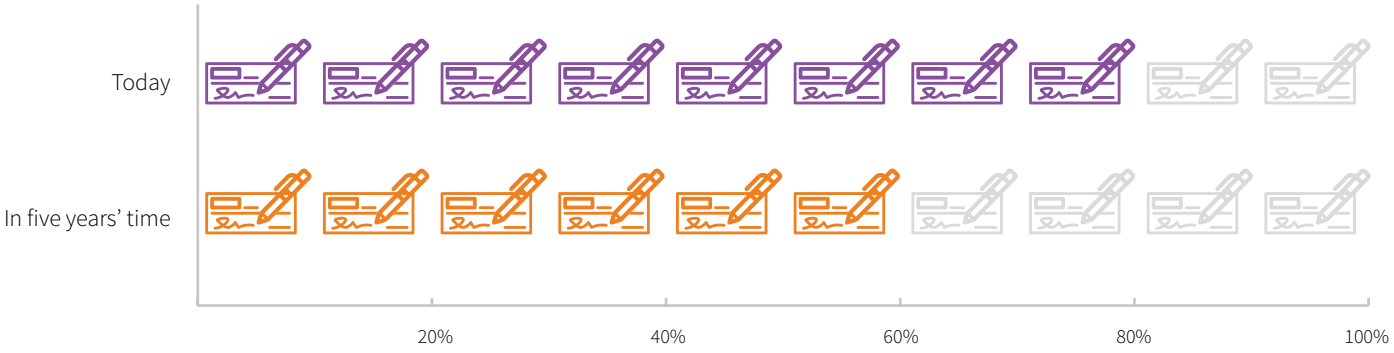


This confidence is surprising given how effectively innovators have been able to disrupt other industries, hollowing out margins that incumbents had long taken for granted and capturing market share by offering customers unbeatable convenience and cost savings. From Amazon to Airbnb, Netflix to Uber, the story of digital disruption has not ended well for those incumbents unable to match the personalised experience and compelling cost savings of the newcomers.

The principal current account – a diminishing advantage

The advantages of access to customer account data and long-standing customer inertia have historically inoculated incumbent banks from the impact of competition. However, open banking, by enabling third-party access to data and faster, if not automatic, switching, removes that head start and threatens to unpick incumbents' customer relationships, one smart solution at a time. This erosion of the competitive advantage is acknowledged by our cohort of bankers: while 78 per cent believe holding customers' current accounts is an advantage today, only 56 per cent think it will be so in five years' time.

Percentage of respondents who see holding a customer's current account as a competitive advantage



Outdated brand promises

While customers still trust the big name banks to keep their money and data safe, they don't think these financial heavyweights can satisfy their craving for smart solutions that make life better. Nearly two-thirds of consumers perceive little or no differentiation of products and services among the big banks. By contrast, they enthusiastically embrace the self-serve tools and transparent and simple offers promoted by digital new entrants: one global study into consumer attitudes found that four out of ten are less reliant on established banks because there are more options to self-manage their finances, while a similar proportion are excited about the emergence of new online providers[7].

This trend in consumer attitudes is recognised by our respondents: four out of five (81 per cent) believe today's banking customer is driven less by trust in large institutions and more by convenience and quality of experience.

Banks have, however, yet to reflect this new reality in their branding, frequently pushing trust and pedigree as their differentiating qualities. Seven out of ten (71 per cent) of our respondents believe that, by continuing to focus their marketing messages on trust in an established brand, many banks have not kept pace with consumer priorities for speed, simplicity and convenience.

81% believe the consumer is driven less by trust in large institutions and more by convenience and quality of experience

71% believe that banks' brand messaging has not kept pace with consumer priorities for speed, simplicity and convenience

79% agree that FinTechs are not intrinsically better than banks in terms of customer outcomes but have more engaging brands

[7]*Global Consumer Banking Survey, 2016, EY*

It is a branding misstep that could cost dearly as brand-savvy new entrants compete for customer attention. Indeed, 79 per cent of our surveyed bankers agree that FinTechs are not intrinsically better than banks in terms of customer outcomes but have more engaging brands. The branding of FinTechs and challengers taps into the public mood for financial solutions that are simple to understand, transparent and fair, with the customer firmly in control of their finances. These brands are very clear that the customer's needs and happiness comes first. Plum, for example, even employs Customer Happiness officers, while Monzo encourages co-creation with customers, to *build a bank with everyone, for everyone.*

Rather than selling financial products, FinTechs and new wave challengers repeatedly express their desire to solve customer problems. To a generation jaded by the fall-out from the financial crisis, it is a breath of fresh air. It isn't hard to see why nine out of ten (93 per cent) of our surveyed bankers believe the new wave of digital challenger banks and consumer-facing FinTechs are set to achieve an unprecedented level of customer engagement.

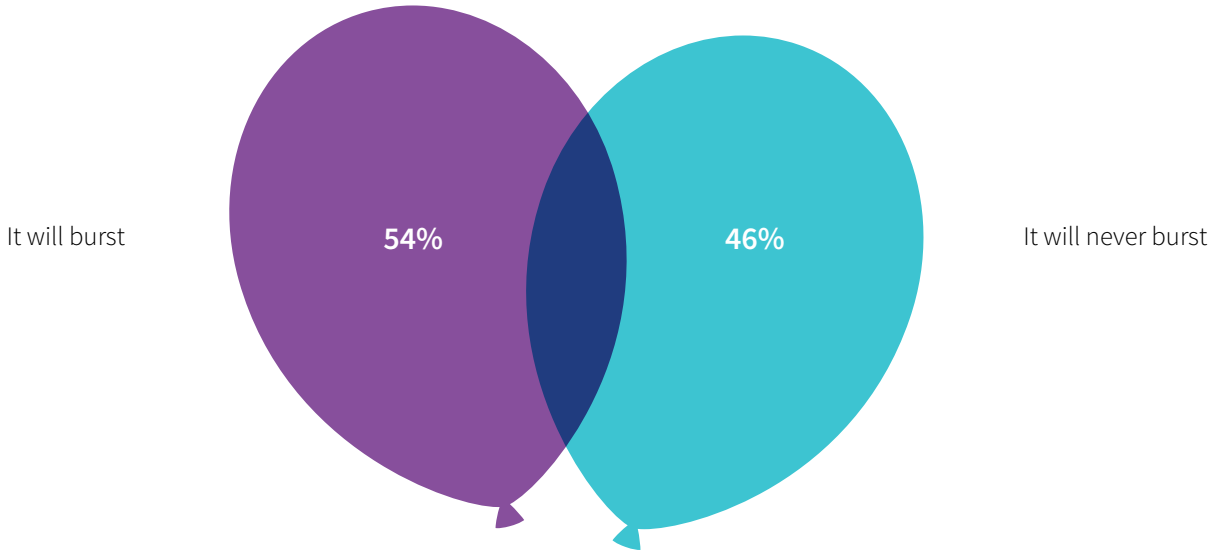
A FinTech bubble?

After a slow start, FinTechs and challenger banks are starting to build their customer bases. Monzo now has over one million customers, with 20,000 new customers signing up every week; it accounts for 15 per cent of all new current account openings in the UK as customers welcome a bank built around them, with smart features that make life easier, resulting in a Net Promoter Score (NPS) of +80, the highest of any UK bank (the sector average is just +4).

Starling Bank, the UK's mobile-only bank, reported a near 500 per cent surge in customer accounts in the nine months from November 2017 and now has 210,000 current accounts, its monthly transaction volumes exceed £200 million a month and deposits stand at more than £100 million. It is still tiny compared to the Big Four but its customers are young, engaged and maintain high balances.

The vast sums of money that have backed FinTechs over the past five years have prompted talk of an unsustainable bubble. However, our survey indicates FinTech threat is not going away: almost half (46 per cent) of our surveyed bankers think the bubble will never burst.

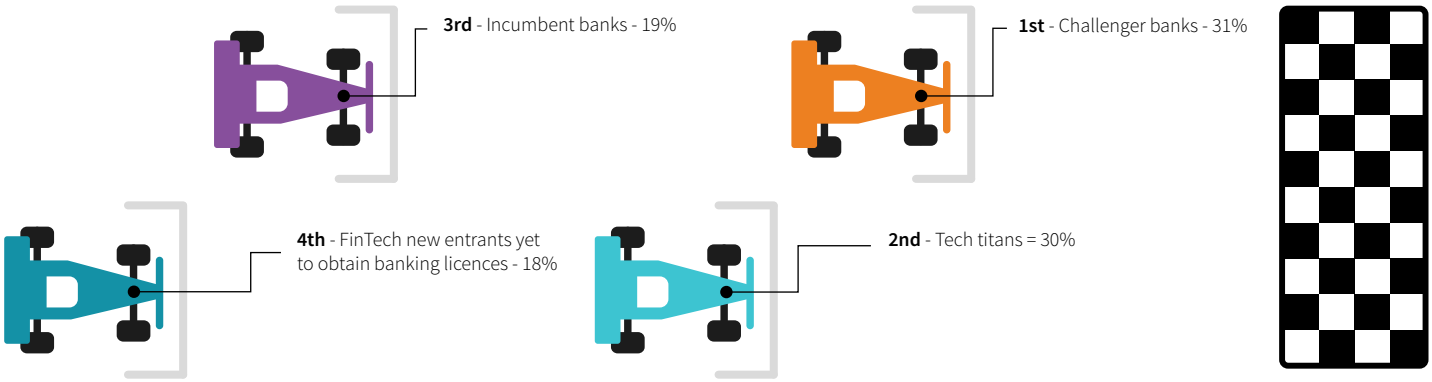
Will the FinTech bubble ever burst?



FinTechs vs tech titans – who will benefit most from open banking?

There is, as yet, no agreement as to what kind of business will capture the largest share of the customer wallet as the open banking landscape evolves. Our survey reveals 31 per cent of the industry expect challenger banks to benefit the most; 30 per cent back the tech titans, with incumbent banks trailing in third.

Which type of organisation is best placed to gain market share in banking and financial services as a result of PSD2 and open banking?



The tech titans are a threat to both the challengers and incumbents – and it is a threat that is being taken seriously. After all, surveys suggest nearly a third of UK consumers would choose Amazon, Google, Facebook or Apple for banking services, and that rises to almost half of those aged 18 to 34[8]. Industry insiders have long feared the intentions of Amazon, which in March 2018 was reported to be in talks with big banks about setting up a current account-type product for younger customers and those without a bank account[9]. These fears are not without foundation: one survey found that 65 per cent of Amazon Prime customers would sign up for a bank account with Amazon, along with 43 per cent of non-Prime customers and 37 per cent of non-Amazon customers[10].

The big question is whether this threat will materialise. Given the regulatory hurdles, it is unclear why GAFA would want to become banks. They do, however, want to grow their businesses by facilitating seamless social and commercial connections – and frictionless payments, just-in-time credit and in-transaction insurance are all part of this ambition. That is why Amazon provides insurance and SME lending, why Facebook has implemented P2P payments into its messenger app and Apple allows users to send money to each other via iMessage. In the longer term, as these platform businesses spread their nets ever wider, they may well become the principal channels through which all daily consumer needs are served, including banking. This is not head-to-head competition with the banks but instead a gradual erosion of banking value chains that may prove difficult to withstand.

Innovate…or die

To keep pace with changing customer expectations and the incursion of FinTechs and platform businesses, incumbent banks will need to innovate – and fast. The stakes are high and this time it will not be enough to spin out new apps or budgeting tools. Instead there will need to be a wholesale rethink of what it means to be a bank. More than nine out of ten (93 per cent) of our surveyed bankers agree that fundamental business model innovation will be required within the next five years.

93% agree that fundamental business model innovation will be required within the next 5 years

This root-and-branch reform will require strong leadership from the top of the organisation. In recent years, banks have rushed to prove their innovation credentials, investing in innovation labs, hackathons and appointing innovation chiefs. This is all welcome, but, in a clear signal of how critical innovation now is to a bank's success, more than eight out of ten of the bankers we surveyed (84 per cent) believe ultimate responsibility for innovation in a bank should be the remit of the CEO. Furthermore, 63 per cent think that, if the CEO cannot fulfil the role of a head of innovation, then he or she is not suitable to be a CEO in today's market.

84% believe ultimate responsibility for innovation in a bank should be the remit of the CEO…

…and 63% think that if the CEO cannot fulfil the role of a head of innovation then he or she is not suitable to be a CEO in today's market

[8] *https://www.globalbankingandfinance.com/30-per-cent-of-uk-consumers-would-use-amazon-google-facebook-or-apple-for-banking-services/*
[9] *Wall Street Journal, March 2018*
[10] *http://fortune.com/2018/09/19/amazon-bank-account-prime-bain-survey/*

Model choice

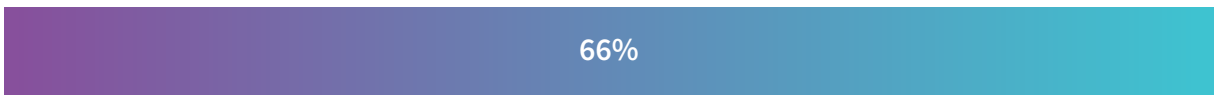
Open banking has brought the industry to a crossroads at which it must now make a choice about whether to offer banking as a platform or as a service. Banking as a platform takes banks closer to the customer, with the bank using APIs to create a marketplace or digital ecosystem through which customers can connect to a range of financial services and, potentially, to providers of other kinds of service as well. With the banking as a service model, banks focus on their core skills, creating financial products and services that the customer accesses through other channels and platforms.

66% think banking as a service will become a more prevalent model than banking as a platform for today's incumbent banks

The first option, banking as a platform, is where the greater margins lie: according to figures from McKinsey & Co, the ROE on "manufacturing" — the core businesses of financing and lending — is roughly 4.4 per cent, whereas "distribution" - the origination and sales side of banking - accounts for 47 per cent of revenues and 65 per cent of profits, with a ROE of 20 per cent[11]. Unsurprisingly, this is the part of the banking value chain that new entrants, from tech titans to FinTech innovators, are targeting. Yet, despite the richer returns of the banking as a platform model, only one-in-three of our surveyed bankers think this will be the prevalent model for today's incumbent banks in ten years' time.

Which of the following will be the more prevalent business model for today's incumbent banks in 10 years' time?

Banking as a platform (where banks aggregate and sell financial products from many providers)

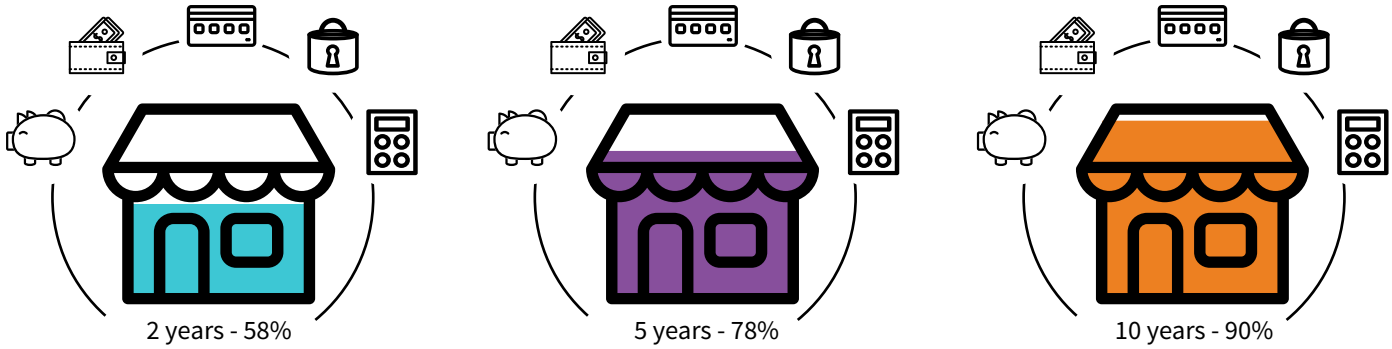


Banking as a service (where banks create underlying products or services that are sold and managed through other channels or platforms)

This retreat to the back room is unlikely to be a proactive choice for banks, however. Many plan to try banking as a platform, with 58 per cent of our respondents expecting their organisation to launch a marketplace in the next two years. It seems far fewer expect that strategy to succeed.

[11] *https://www.mckinsey.com/industries/financial-services/our-insights/remaking-the-bank-for-an-ecosystem-world*

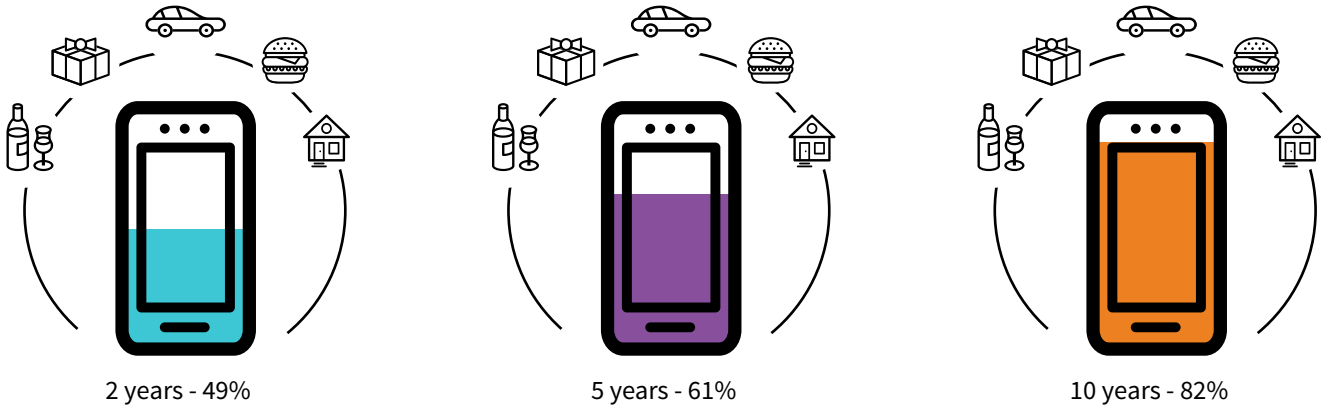
Percentage of banks who expect to have a financial marketplace that offers products or services of other financial organisations in 2, 5 and 10 year timeframes



More than financial services

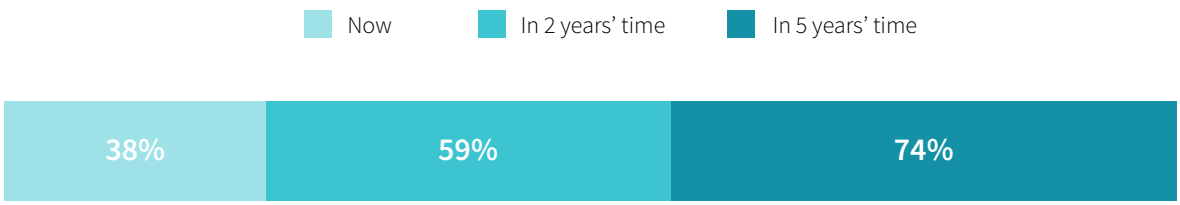
Of those who expect their organisation to launch a marketplace, almost half (49 per cent) anticipate it will offer more than just financial services products. This will be an ambitious step as banks venture outside their comfort zone to offer new products and services, just as others are crossing industry boundaries to move into banking. This is, however, a necessary strategic response to the emergence of cross-industry digital ecosystems and platforms. If digital ecosystem platforms emerge as predicted, offering more than financial services may be the only way for banks to remain at the front of the financial value chain and retain a direct relationship with customers.

Percentage of banks who expect to offer non-financial services products via their platform in 2, 5 and 10 year timeframes



There is optimism among our surveyed bankers that consumers will take to buying non-financial products and services through banks: while 59 per cent think that the average consumer is unlikely to buy non-FS products from a traditional banking brand today, this is expected to change rapidly, with the same proportion believing it will become likely in the space of just two years.

When is the average consumer likely to buy non-financial related services from a traditional banking brand in the following timeframes?



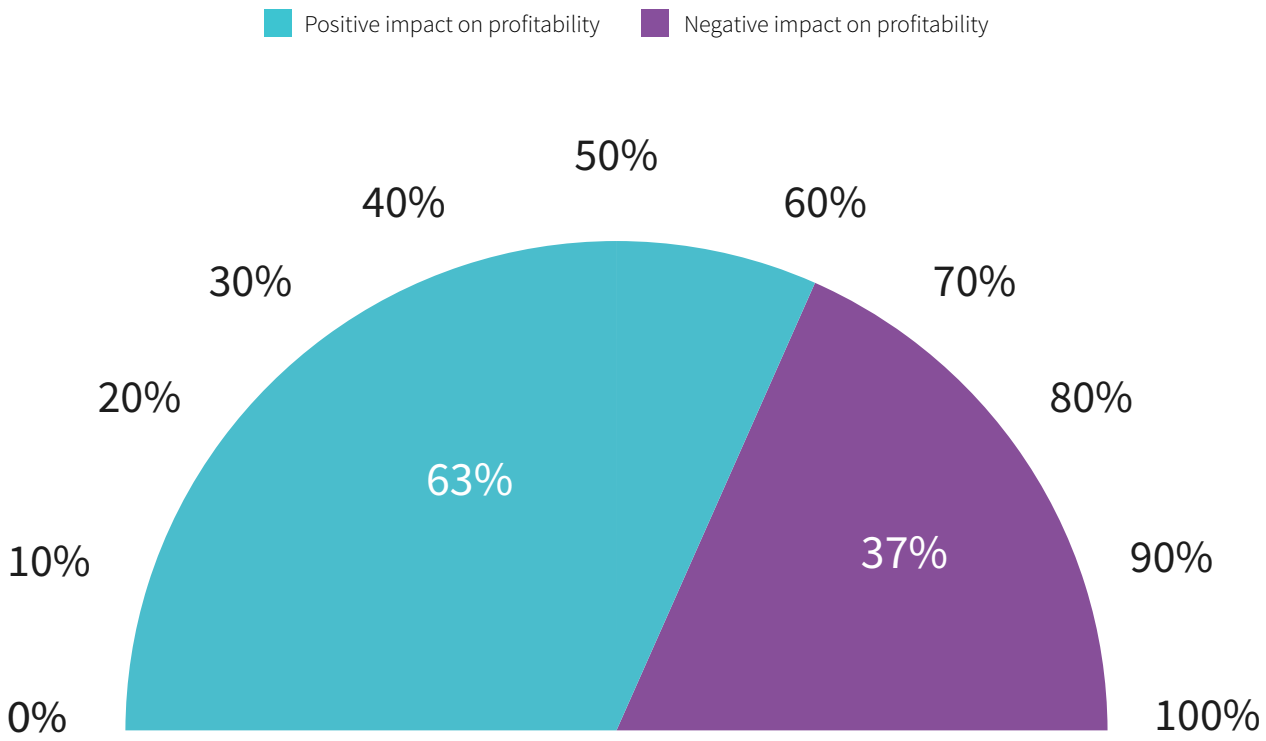
New revenue sources

These developments point to a fundamental shift in the banking business model: in five years, our respondents expect almost half of their revenues (47 per cent) will come from non-traditional activities. And the majority are confident that these changes will be good for the industry: 63 per cent think open banking will have a positive impact on profitability.

47% **of bank revenues expected to come from non-traditional activities in five years**

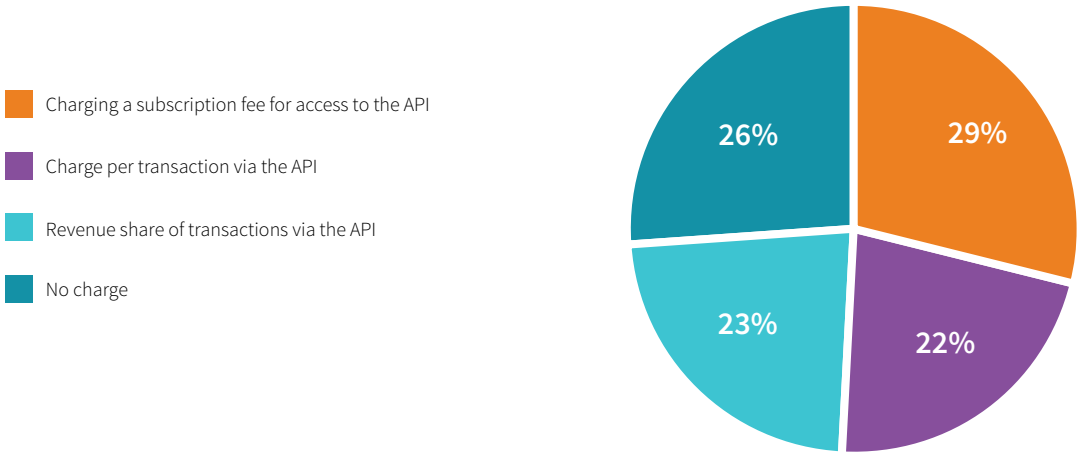
63% **think open banking will have a positive impact on profitability**

The expected impact of open banking and open APIs on banks' profitability in the next three years



Where will these new revenues come from? Charging for access to the bank's non-regulated APIs is one potential source, with a subscription fee being the most popular approach among our respondents – although a quarter (26 per cent) do not anticipate charging for API access at all.

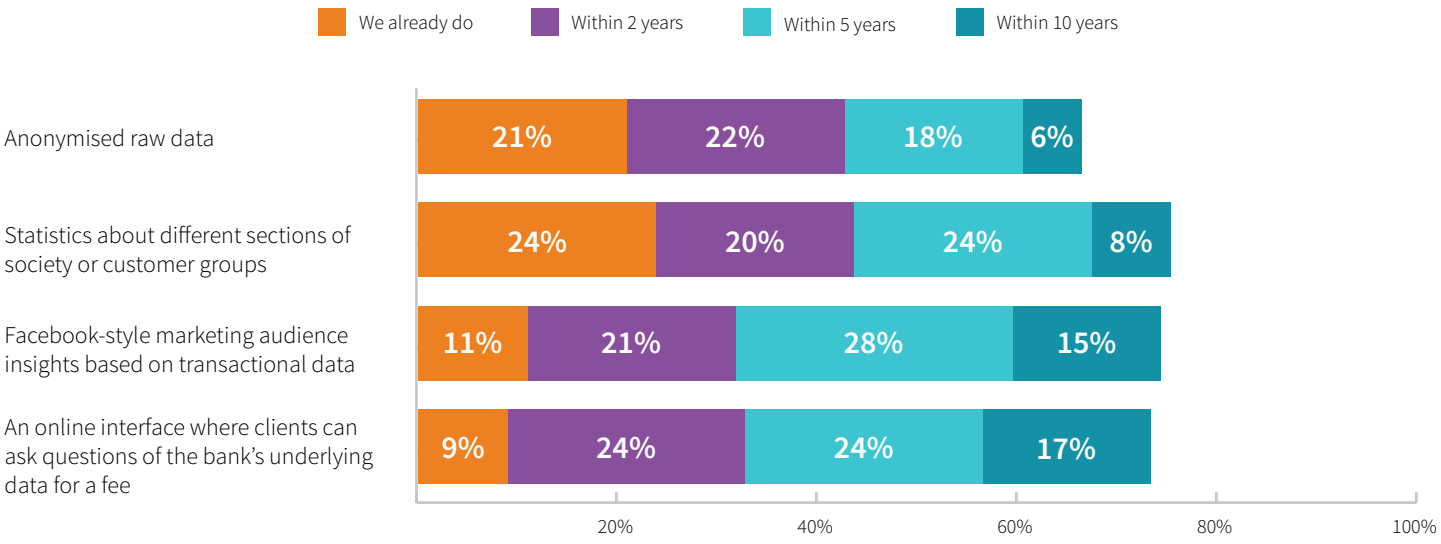
For those APIs not required by regulation, how do banks propose to charge?



The roll-out of new data-related services is another emerging revenue source: indeed, almost four out of five (78 per cent) agree that banks are sitting on historical transaction data that could help them build up a level of consumer insight and understanding that could rival Facebook or Google.

78% believe that banks' transaction data could enable them to deliver consumer insight that rivals Facebook or Google

When do you expect your organisation to offer data-related services to other organisations in the following timeframes?



There is a healthy appetite to develop such data services: 44 per cent expect to offer statistics about different sections of society or customer groups within two years and 43 per cent expect to offer anonymised raw data. A third even expect that their bank will offer both Facebook-style marketing audience insights based on transactional data and an online interface where clients pay a fee to ask questions of the banks' underlying data, with results driven by a powerful, intelligent analytics engine.

It seems the blurring of industry boundaries cuts both ways: GAFA may be crossing into financial services but the banks, according to our research, are just as willing to encroach on the core data services of the tech businesses. It's banking, but not as we know it.

Chapter 2

The Digital Bank: The Next Stage of Transformation

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The Digital Bank: The Next Stage of Transformation

Customer expectations have been changed by their everyday online interactions. They want communication that is as instant as Facebook Messenger, solutions that make life easy and save them money like Uber, and payments as frictionless as with Amazon Prime. This craving for convenience is powerful, with one survey suggesting that nearly half (45 per cent) of traditional UK bank customers might switch their current account to an alternative financial institution such as a challenger bank, retailer, or FinTech company[12].

The good news is banks are fighting back, launching apps, webchat and other services to rival the best of FinTech: in 2017 the major banks had over 5.5 million webchats with customers in 2017, the equivalent of 622 per hour, Barclays has signed up 20,000 customers to its co-creation app, Launchpad, where they can trial new features and give their feedback, while Santander has an online mortgage application service that allows customers to remortgage online in their own time from the comfort of their own home[13]. Research suggests these investments will pay off as those banking players that have taken some of the strife out of banking by digitising the customer experience and removing pain points have successfully inoculated themselves from new entrants to some degree[14].

65% **believe the gap in the quality of the digital experience between traditional banks and FinTechs has narrowed over the last two years**

It seems this work is already making an impact: two out of three of our respondents believe the gap in the quality of the digital experience between traditional banks and FinTechs has narrowed over the last two years. Furthermore, 72 per cent think that, in most banks, the digitisation of the customer interface is now at a level whereby there is more scope to boost competitive advantage through improving internal process efficiency than by investing further in the digital front-end.

72% **think there is more scope to boost competitive edge through improving internal process efficiency than by investing further in the digital front-end**

Internal process efficiency – the new competitive edge?

These findings are, however, less a ringing endorsement of the industry's digital prowess than a recognition that today's customer-facing innovation can be readily copied by rivals to become tomorrow's hygiene factor. Monzo, for example, enjoyed only short-lived competitive edge by enabling customers to freeze and unfreeze their cards in moments; Barclays now offers the same. Little wonder that 78 per cent of our respondents agree that, because internal innovation around efficiency is less easily replicated by competitors, it has the potential to deliver more enduring competitive advantage. One consequence of this new reality is that over half of our respondents (54 per cent) expect a shift towards investment in improving internal process efficiency rather than customer-facing technology in the next two years.

54% **per cent expect a shift towards investment in improving internal process efficiency rather than customer-facing technology in the next two years**

[12] *Banking Disintermediation: The Personalisation Imperative, Personetics, 2016*
[23] *https://www.ukfinance.org.uk/wp-content/uploads/2018/05/WWBN-FINAL-Digital.pdf*
[14] *https://www.bain.com/insights/evolving-the-customer-experience-in-banking/*

RPA - transformational impact

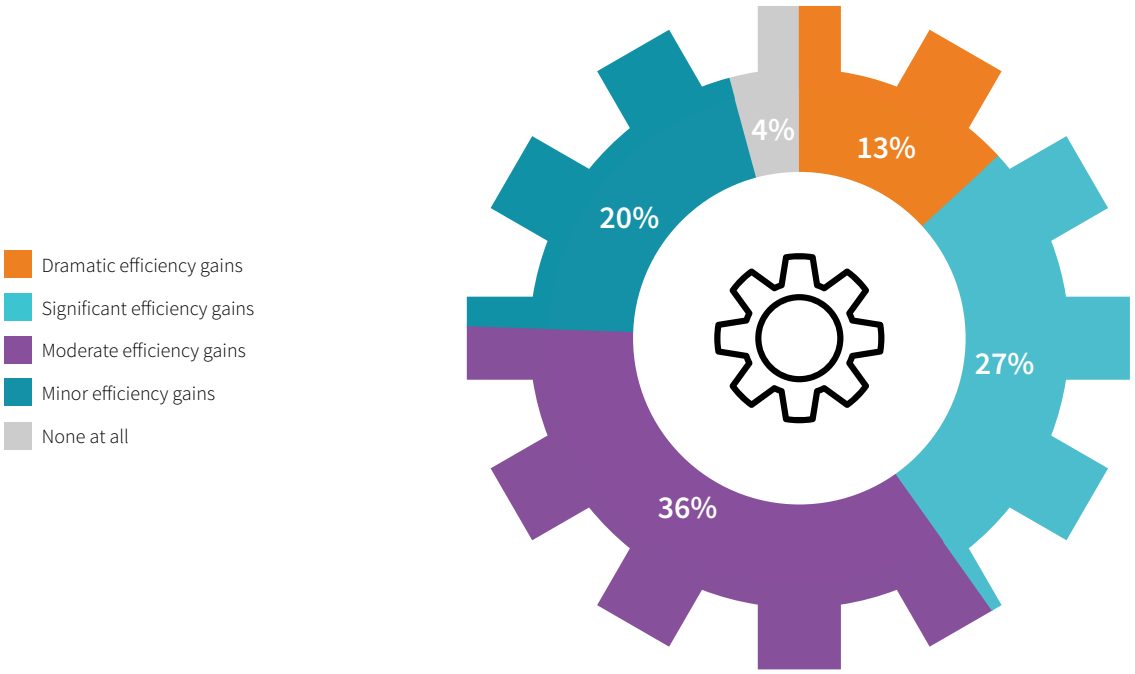
When it comes to improving internal processes, there is little to match robotic process automation (RPA). With RPA, businesses can automate mundane rules-based business processes, streamlining them and freeing up human workers to focus on higher value tasks. When RPA is combined with some form of cognitive technology, such as machine learning, speech recognition or natural language processing, then even more complex tasks can be automated, with the algorithms even able to self-learn and make recommendations on how to further improve processes.

75% of our surveyed bankers are already using RPA

A majority of banks are already focused on this back-office effort: three quarters of our respondents said their organisation is already using RPA. This is no surprise: the efficiency gains are outstanding and the return on investment can be compelling: studies suggest operational efficiencies of up to 70 per cent[15], improved accuracy and better, faster service for customers.

There are many use cases: a large consumer and commercial bank redesigned its claims process and deployed 85 "bots" to run 13 processes, handling 1.5 million requests per year. As a result, the bank was able to add capacity equivalent to around 230 full-time employees at approximately 30 per cent of the cost of recruiting more staff, as well as recording a 27 per cent increase in tasks performed "right first time."[16] One global bank used bots in the account opening process, to extract information from input forms and feed it into different host applications, reducing turn-around times by nearly 30 per cent, eliminating errors and cutting costs by $50,000 a year[17]. An international finance group cut the time to process documents by 60 per cent, saved $4.5 million on processing over three years and served 25 per cent more clients with the same employee headcount[18].

The level of efficiency gains bankers estimate RPA investments have delivered



[15] *https://www.capgemini.com/2017/12/rpa-and-ai-the-next-step-in-the-efficiency-game-for-banks/*
[16] *https://www2.deloitte.com/insights/us/en/focus/signals-for-strategists/cognitive-enterprise-robotic-process-automation.html#endnote-sup-6*
[17] *https://www.tcs.com/content/dam/tcs/pdf/Industries/Banking%20and%20Financial%20Services/why%20banks%20must%20bank%20on%20RPA.pdf*
[18] *Case study supplied by ABBYY*

The numbers are hard to argue with. Of our surveyed banks, those that deploy RPA are already reaping the rewards: 40 per cent report significant efficiency gains and another 36 per cent estimate they have seen moderate gains from their investment. Tellingly, more than four out of five (81 per cent) agree that return on investment in robotic process automation in terms of cost savings and customer outcomes is significantly faster compared to the average technology investment.

81% agree that return on investment in RPA is significantly faster than for other technology

Onboarding - ripe for transformation

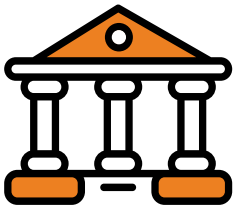
Onboarding is ripe for transformation using AI. It can be a major pain point for customers: studies suggest 40 per cent of consumers have abandoned bank applications, with more than one in three (39 per cent) abandonments due to the length of time taken and a third (34 per cent) due to needing too much personal information[19]. Indeed, it takes traditional banks on average 26 days to onboard a new customer[20]. This is far too long in an age when Monzo can onboard customers through their smartphone in minutes.

Such lengthy onboarding comes at a cost. Customers spend less if they have to jump through hoops first: the same survey found that more than half of customers say they would be more likely to apply for a financial product if the process was 100 per cent online and would buy additional services if paper-based identity paper was not needed[21]. Then there is the cost to the banks of handling all this paper and managing these disjointed customer experiences: according to Thomson Reuters figures, the average financial firm spends US$60 million per year on KYC, customer due diligence and client onboarding.

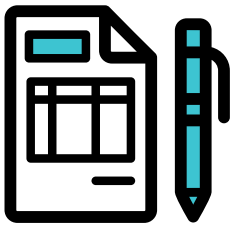
It is clear there is still much work to be done. Our survey shows that 50 per cent of our surveyed bankers still require a customer to visit a branch to take out certain products, 59 per cent require customers to provide information about themselves multiple times and 64 per cent require them to send in physical copies of documents. Given that Monzo allows customers to send a photo of their ID and a quick selfie video to run KYC checks, while onboarding through the smartphone takes about five minutes at Starling, these cumbersome processes fall far short of customer expectations in the digital age.

Banks need to address this capability gap as a matter of urgency: 93 per cent of our respondents agree that, with the spread of services that use advanced analytics and account data accessed through open APIs to regularly switch consumers to the best deals, it is more crucial than ever before for banks to cut the application process to a minimum.

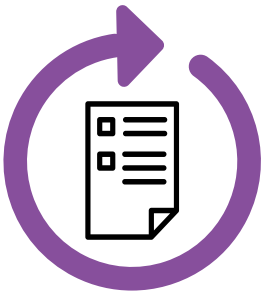
Percentage of banks still requiring customers to do the following in order to take out a new product



Visit a branch 50%



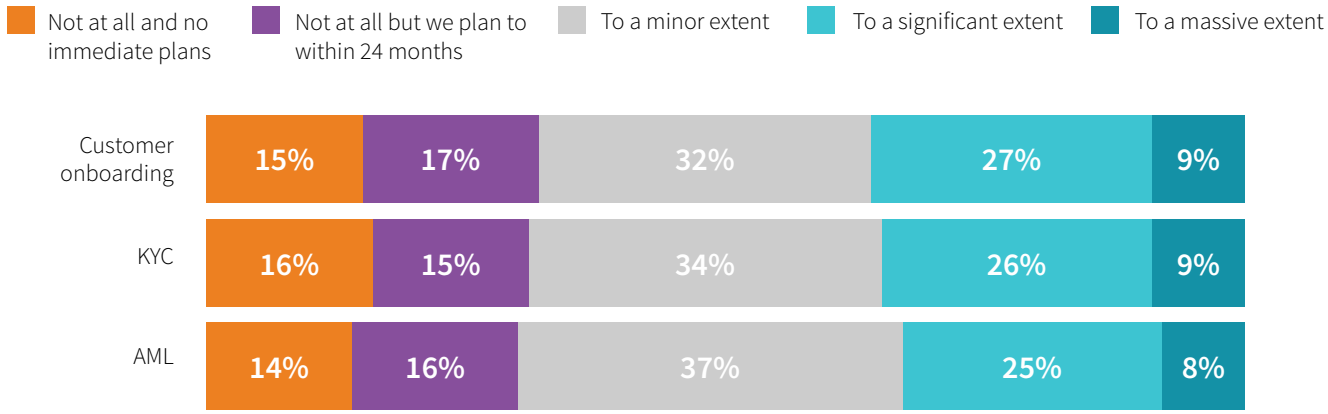
Send in physical copies of documents 64%



Provide information about themselves multiple times 59%

[19] *https://www.signicat.com/wp-content/whitepapers/signicat-onboarding-whitepaper.pdf*
[20] *https://www.thomsonreuters.com/en/press-releases/2017/october/thomson-reuters-2017-global-kyc-surveys-attest-to-even-greater-compliance-pain-points.html*
[21] *https://www.signicat.com/wp-content/whitepapers/signicat-onboarding-whitepaper.pdf*

The extent to which banks are using RPA for the following use cases



Around a third of our cohort are using RPA extensively for onboarding, KYC and AML checks, but that means the bulk of the industry is just dipping a toe in the water or still in the planning stages. This hesitant approach could prove costly as customers switch to those providers who make it easy for them to sign up.

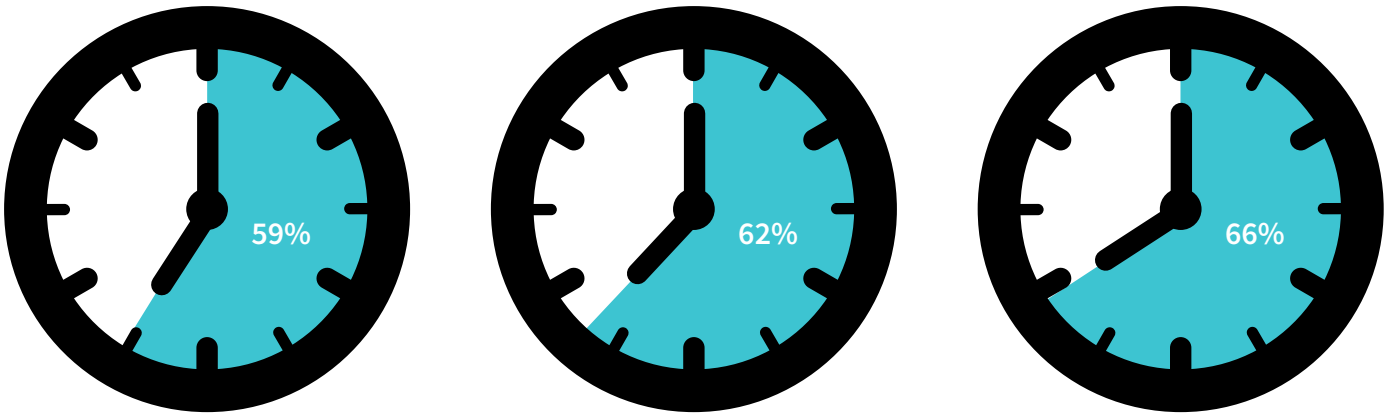
Credit decisions - a need for speed

Customers seeking credit want quick answers – and FinTechs are already offering them. Customers at Starling Bank, for example, can apply for an instant access small personal loan with a few taps in the app.

And it is not just small loans that have had the FinTech make-over. Online mortgage broker Trussle, for example, allows customers to apply for a mortgage online in less than five minutes, with the potential to save up to £4,000 a year. meanwhile, London-based FinTech Iwoca provides smart solutions for the ill-served SME sector, using big data analytics to deliver loans in minutes for small businesses.

Our respondents expect open banking and AI to make fast credit mainstream. Cognitive computing technologies, feeding on the vast amounts of data pulled through open APIs and connected devices, will draw on far more sources far more quickly than any human could manage, enabling them to deliver more accurate assessments of a customer's propensity to default in a fraction of the time. In 2017, for example, JPMorgan Chase introduced COiN, a contract intelligence platform that, using machine learning, could review 12,000 annual commercial credit agreements in seconds – previously 360,000 hours of work per year for lawyers and loan officers.

Potential reductions in loan application processing times through the use of AI and open APIs



Just using APIs

Use of AI and data from connected devices

A combination of the two

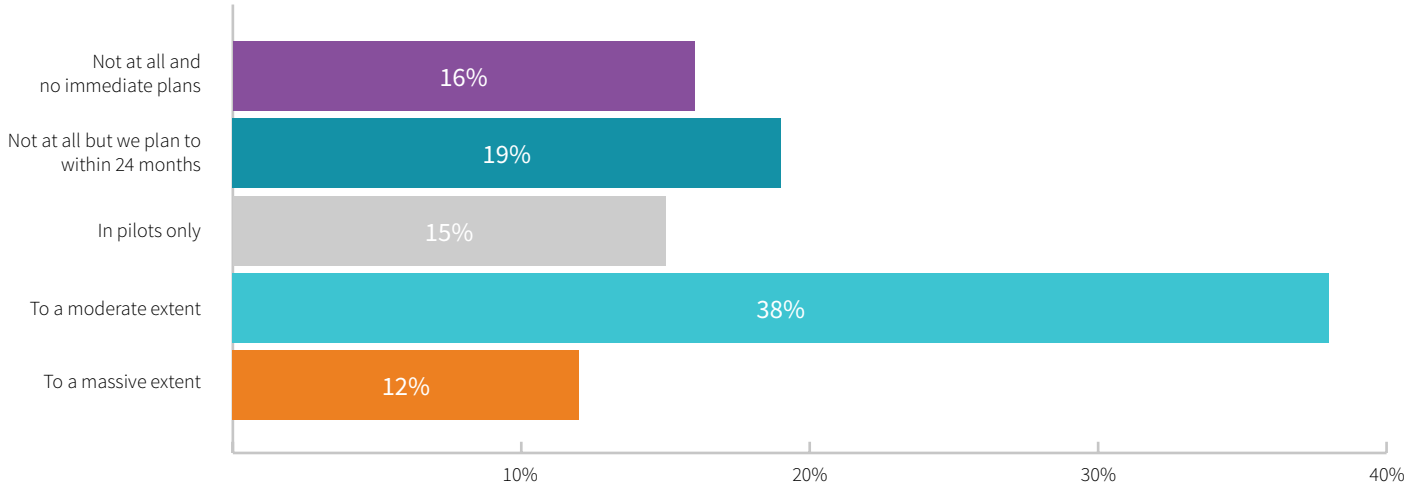
Our respondents are clear that the convergence of open banking and AI will transform credit risk decision-making. By allowing third parties to access account data through open APIs, our respondents expect open banking will reduce the time taken to reach a decision by 59 per cent. When banks deploy AI and data from connected devices, the turn-around time is even faster: in fact, 62 per cent faster. But by combining open APIs, AI and connected devices, our respondents expect to see a reduction of 66 per cent - meaning the process could drop to just a third of what we see today.

A combination of open APIs, AI and connected devices could reduce the time to reach a credit decision by 66%

This is a significant improvement – and it is coming fast: nearly nine out of ten of our surveyed bankers expect to be using AI in credit-risk decisions within the space of two years (in fact, almost half, 49 per cent, already do, and a further 17 per cent have a pilot underway), and, in the same time frame, they expect 46 per cent of credit decisions within their organisation to be made entirely by AI within two years. This rises to 61 per cent within five years.

84% of our surveyed bankers expect to be using AI in credit-risk decisions within the space of two years

The extent to which banks are using AI in credit-risk decisions



AI concerns

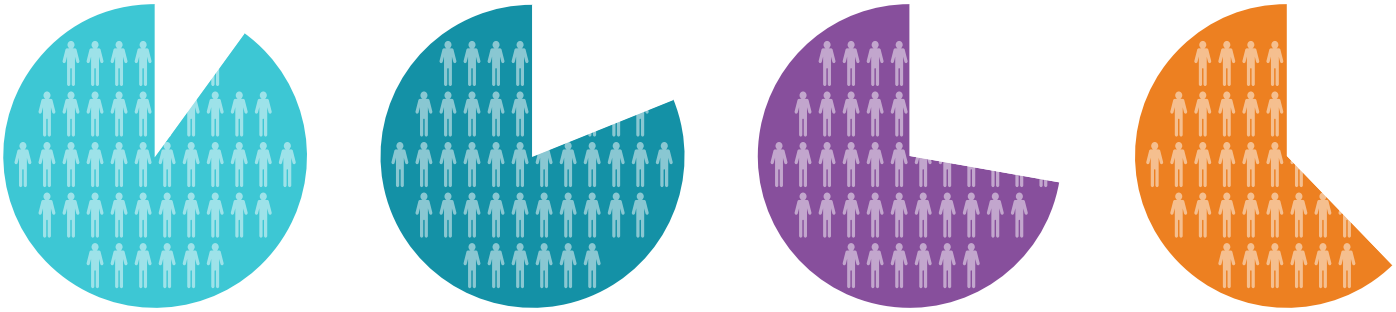
There are some concerns, however. As we have seen in other sectors, there are worries about how blackbox AI programmes reach their decisions. There have been a number of high-profile scandals where AI has been shown to amplify the biases of our world: in 2016 Microsoft's chatbot Tay was supposed to learn to chat from Twitter interactions but, within 24 hours, was backing Adolf Hitler and, in October 2018, Amazon had to scrap its AI-recruiting tool after it was found to be actively discriminating against women. IBM, Microsoft and Google are all currently working on tools to test for bias in their AI algorithms. The majority of our respondents are clearly alive to these risks, with 56 per cent having significant concerns about the transparency of the decisions made by AI credit-risk programmes. Governance of AI should be a priority for all banks – or they may find this is the next scandal to befall the sector.

56% have significant concerns about the transparency of the decisions made by AI credit-risk programmes

The slimline bank

Job losses are the elephant in the room, of course. Leading bankers, including the boss of Deutsche Bank, have warned of a "bonfire" of industry jobs as automation advances, and certainly our respondents expect to see a gradual thinning of the headcount, with AI expected to reduce the workforce by 10 per cent in the next two years, 19 per cent in five years, 28 per cent in 10 years and 38 per cent in 15 years.

The impact of AI on banks' headcount in the following timeframes



2 Years
10% Reduction

5 Years
19% Reduction

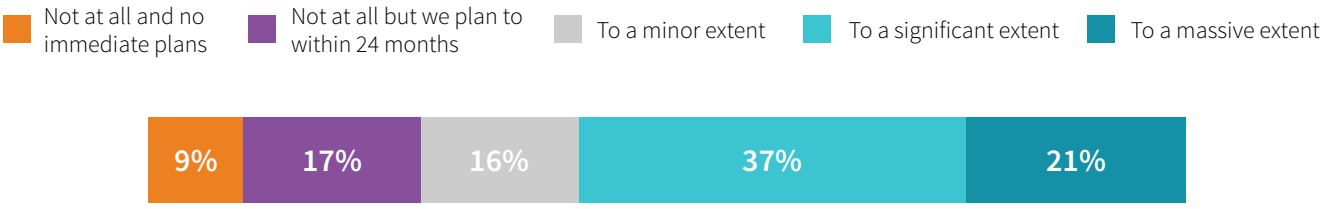
10 Years
28% Reduction

15 Years
38% Reduction

However, our survey suggests the deployment of an AI project should not cause mass panic among staff. It seems many banks plan to use AI to assist, rather than replace, the human workforce: with 74 per cent of banks either using AI or piloting AI to support their customer-facing staff today; this rises to 91 per cent within two years.

74% are using or piloting AI to support customer service staff, and 91% expect to be using AI in this way within two years

The extent to which banks are using AI to support customer service staff



Indeed, many pundits are revising earlier predictions of a jobs' apocalypse. PwC, for example, now thinks AI will create as many jobs as it displaces over the next 20 years: 7 million will be displaced but 7.2 million will be created by 2037, resulting in a small net increase in employment opportunities. PwC had previously indicated that 30 per cent of jobs were set to be displaced by AI, but this has been revised down to 20 per cent[22]. In November 2018, Lloyds Banking Group, the UK's largest retail bank, announced it will make 6,000 back-office jobs redundant, while creating 8,240 jobs, starting from February 2019, focused on enhancing the bank's digital offer, leading to a net creation of 2,000 jobs. Digital transformation is ongoing across the sector, and the challenge for banks will be to optimise the use of humans and robots to deliver the very best service and products to customers.

[22] *https://www.pwc.co.uk/services/economics-policy/insights/uk-economic-outlook.html https://www.bbc.co.uk/news/business-45545228*

Chapter viewpoint: ABBYY

By Reginald J. Twigg, Ph.D., Director of Product Marketing, Data Capture, ABBYY

Unlock data to power the truly digital bank

For many banks, the customer's digital experience seems so effortless at first, with low-touch onboarding and more personalised service.

It is relatively easy for banks to re-configure the front-end user experience to rival FinTech but much harder to manage its underlying processes and systems, and even harder to extract data from the documents and unstructured information that drive customer interactions. Digital Transformation in banking is fundamentally about removing friction from customer service. Robotic Process Automation (RPA) is a technology that can transform the digital experience of the typical bank - streamlining processes, saving costs and freeing up knowledge workers to handle high value customer service tasks.

Yet digitising process with RPA alone does not digitise its data: It is estimated that 80 per cent of data held by organisations is unstructured, with most useful customer data locked inside PDFs, emails and other documents. Many of us know how frustrating and cumbersome the process of submitting paperwork can be, if we need to open a bank account, process loan mortgage or apply for a credit card.

"Capture is the discipline of digitisation – the ability to unlock content from documents and unstructured forms for its effective use in digital processes. Focusing digital technologies such as RPA, Artificial Intelligence, Machine Learning, Natural Language Processing and OCR on automating the most labour-intensive and error-prone data entry processes, Capture removes friction from digital banking, resulting in greater customer satisfaction and the highest return from investing in these technologies"

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ABBYY is a global leader of content intelligent solutions and services. ABBYY offers a complete range of AI-based technologies and solutions transforming business documents and content into business value. By providing digital transformation solutions to financial services, insurance, transportation, healthcare and other industries, the company helps organisations achieve the next wave of growth by understanding customers and delivering responsive real-time intelligent systems. The flexibility of ABBYY AI solutions enables customers to utilise a diverse range of advanced technologies, platforms and solutions for classification, text analytics, data and entity extraction, and data validation via any communication channel and in any format.

For more information, please visit **www.abbyy.com/company**.

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"[23].

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[24].

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[25].

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

[23] *https://www.bloomberg.com/news/articles/2018-01-23/banks-and-fintechs-are-duelling-in-a-war-for-talent*
[24] *The Quant Crunch: How demand for data science skills is disrupting the job market, IBM 2017*
[25] *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

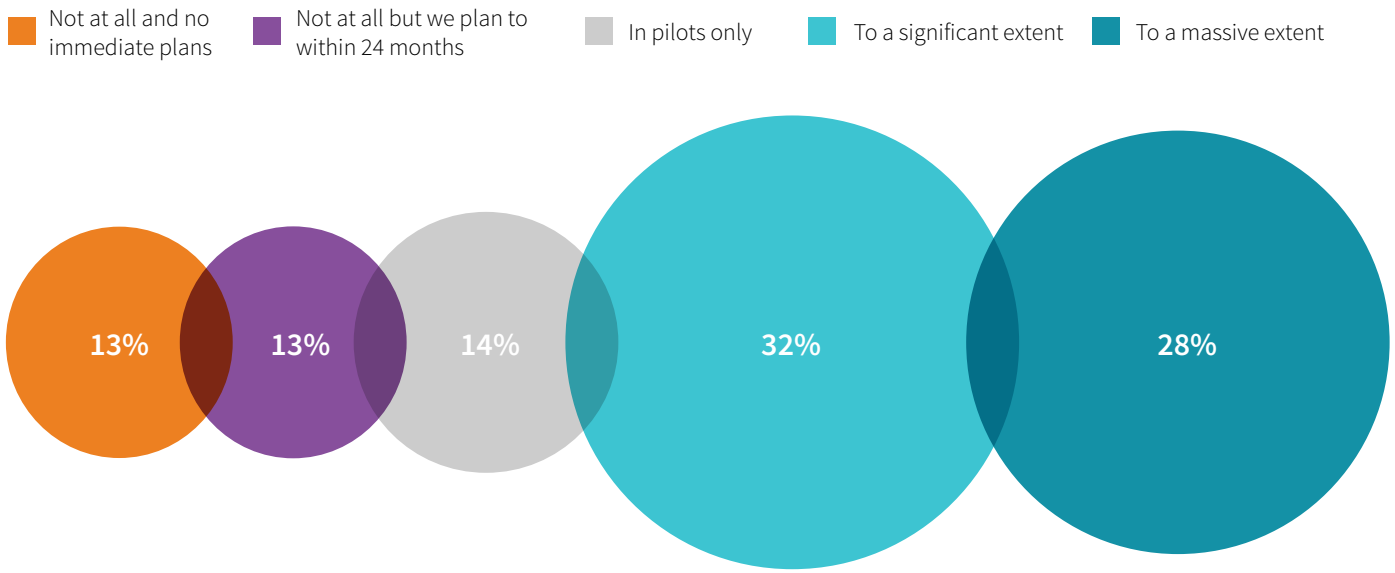
Bankers are also worried that senior managers are taking too cautious a lead when it comes to AI, citing management concerns that incomplete or inaccurate data will lead to negative customer outcomes (75 per cent of respondents) and regulatory and liability issues arising from AI-driven decisions (84 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[26]. Little wonder our survey shows three out of five banks are already consistantly using chatbots and a further 14 per cent are piloting the technology.

To what extent are chatbots being used in retail banking?



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[27].

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 it is handled quickly and accurately[28]. The good news is that the latest generation chatbot, with

[26] *https://www.prnewswire.com/news-releases/juniper-research-chatbots-a-game-changer-for-banking--healthcare-saving-8-billion-annually-by-2022-621743423.html*
[27] *https://www.aspect.com/company/news/press-releases/the-end-of-customer-service-as-we-know-it-aspect-softwares-consumer-experience-index-survey-shows-self-service-ai-redefining-how-consumers-view-customer-service#*
[28] *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[29].

Personalisation of the customer journey

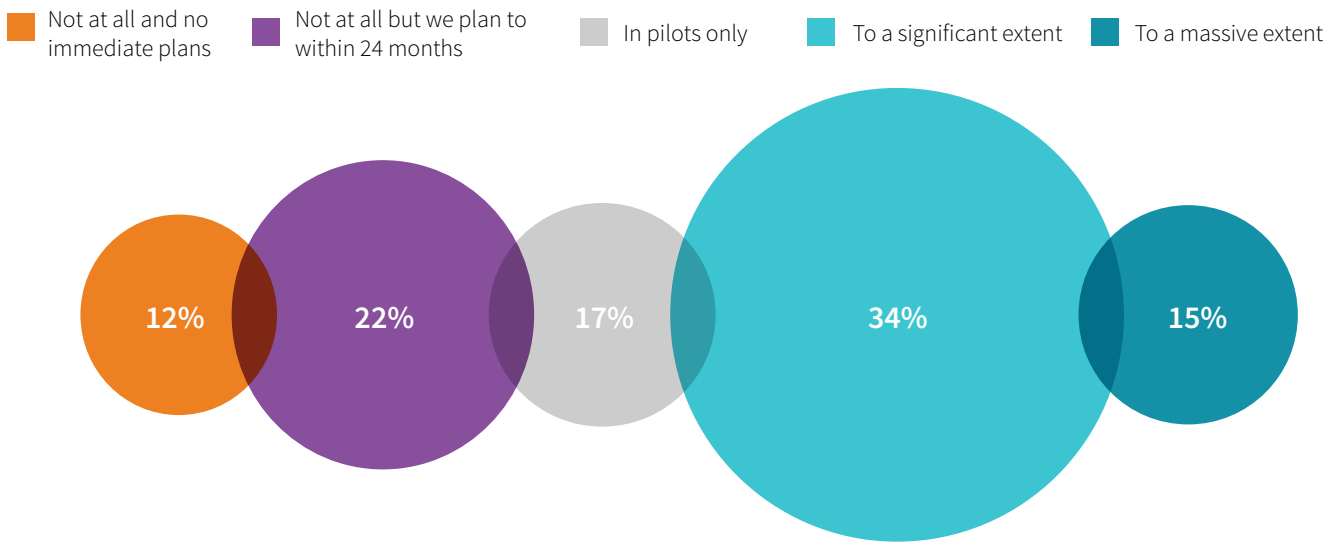
Research suggests that customers tolerate their banks rather than like them: one study found almost six out of ten consumers consider their primary financial institution as a 'necessary utility' and only 37 per cent saw it as a trusted partner[30]. What's more, the same survey found less than one-third (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



[29]*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*
[30]*Digital Banking Report, Personetics, 2016*

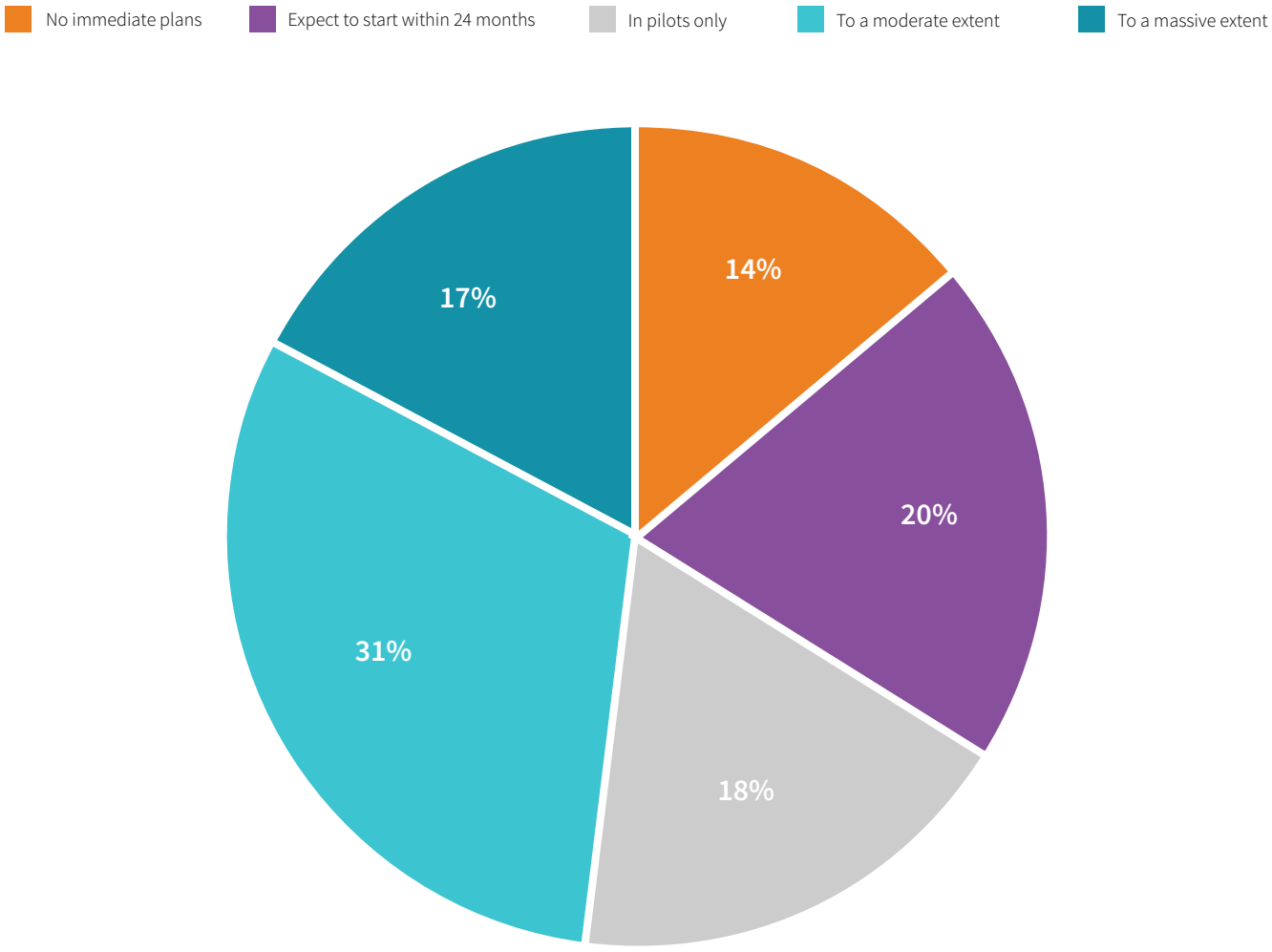
AI-driven value-added services

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: Bconomy 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

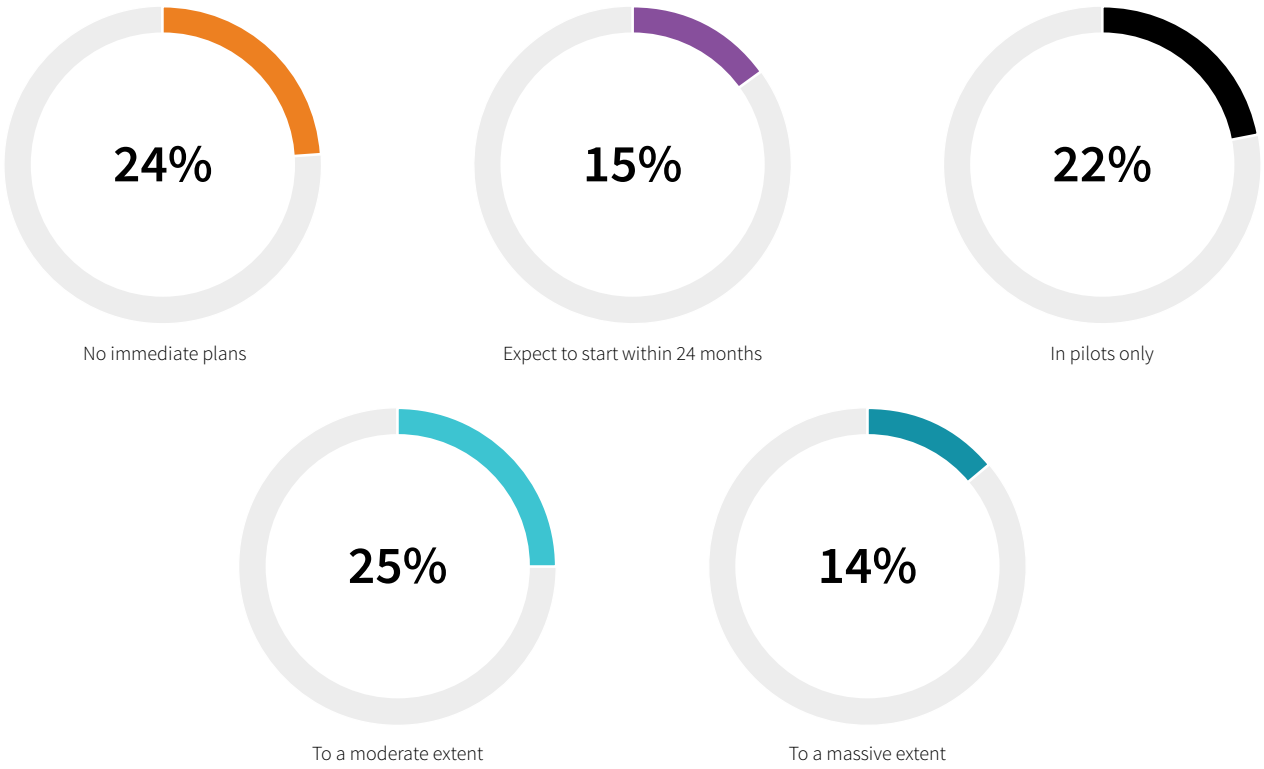


Robo-advice

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.

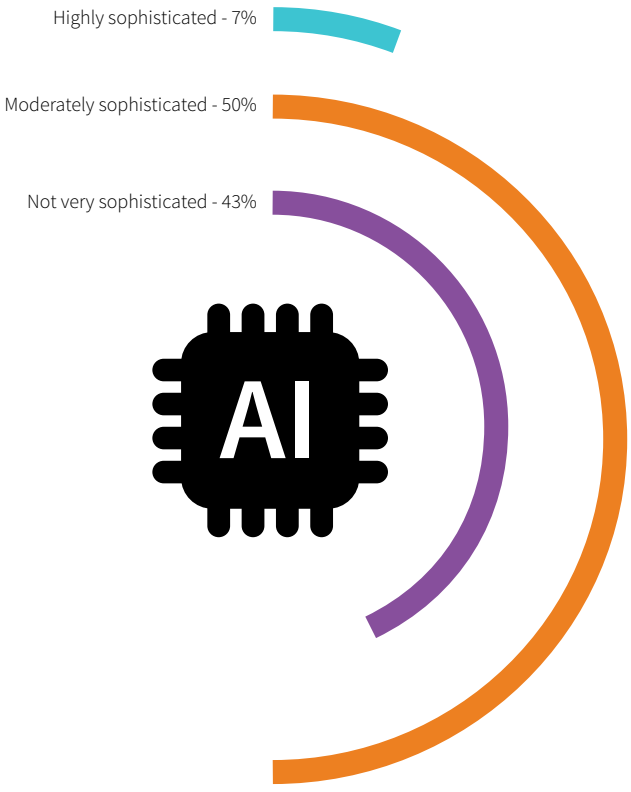
Sophistication gap

Although a significant proportion of banks appear to 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.

Chapter viewpoint: TIBCO

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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Chapter 4

Voice: The Next Big Banking Channel

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Voice: The Next Big Banking Channel

A new channel has emerged, and it is growing faster than anyone expected. According to our research, voice-activated digital assistants are set to be the next major consumer channel. Christmas 2017 was the turning point: Amazon's family of Echo smart speakers was priced competitively enough to tempt people to dip a toe into the home automation market. The units flew off the shelves, giving Amazon dominance of the smart speaker space, followed by Google Home devices and Apple trailing in third. While just one in twenty Brits owned a smart speaker in Q3 2017, by Q1 2018 that number had doubled to one in ten[31].

At first the units were something of a gimmick, with the main demands on Alexa being an encyclopaedic knowledge of trivia and jokes and a channel to play music. But, increasingly, householders are tapping into additional functionality, with just under half using their smart speaker to set alarms and reminders or access news and weather forecasts, while over a third (34 per cent) are using it to interact with other smart devices[32], although few have graduated to shopping or banking through the device just yet.

Talking, not typing

In a remarkably short space of time, voice-activation has hit public consciousness: one survey found that 90 per cent of consumers were aware of voice-enabled products and devices and 72 per cent of them had used a voice assistant, with adoption driven by younger consumers, households with children, and households with an income of more than US$100,000[33].

Given that people generally can speak about 125-175 words per minute, while most people can only type a little less than 40 words a minute (and that is on a keyboard, not a phone), it is no surprise that those who use voice assistants report they are a smarter, faster, and easier way to perform everyday activities, such as searching for something online or texting a friend. Once users get used to the convenience of voice, it seems they increasingly choose this channel to accomplish tasks they used to do through typing or swiping[34].

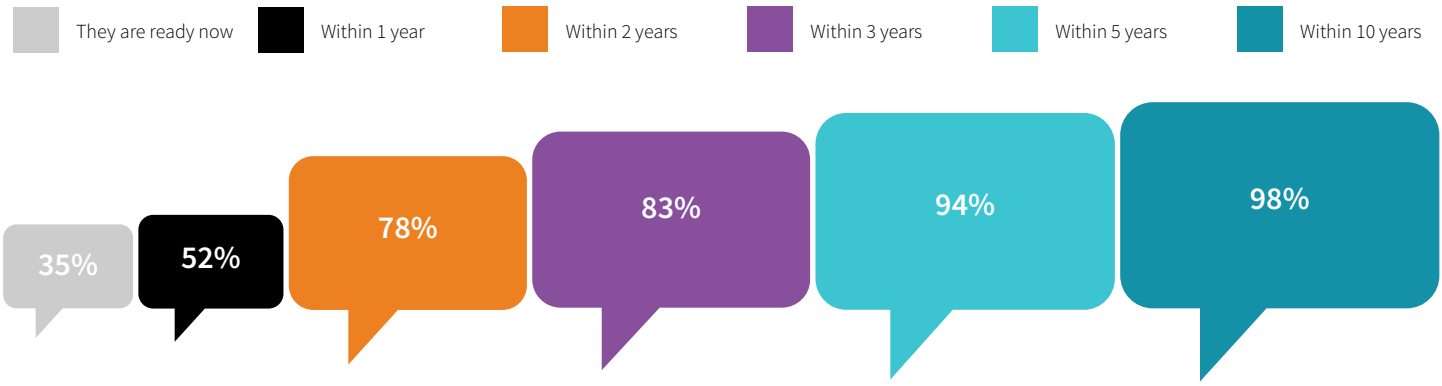
84% think that voice-activated digital assistants will become the next major consumer channel

78% think the majority of digital natives will embrace voice as a banking channel within the next two years

Yet, for more serious situations involving money, such as shopping or payments, consumers prefer more traditional channels, with almost half not trusting the voice assistant to correctly interpret and process their order or feeling uncomfortable sending payment through a voice assistant[35].

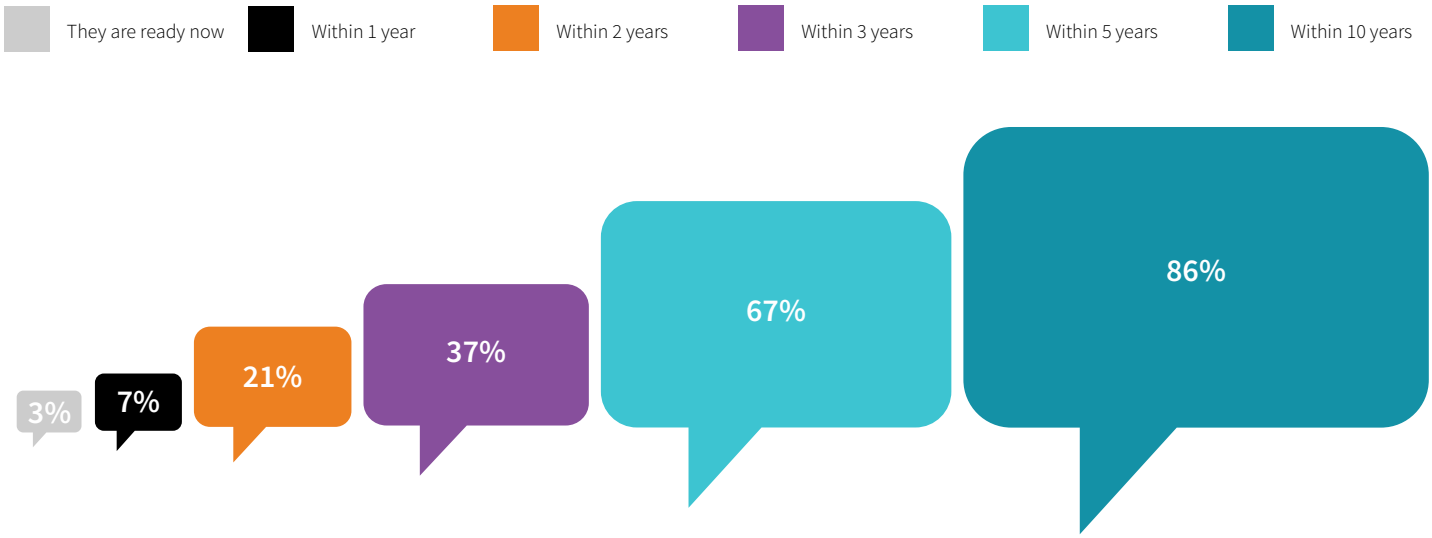
Our findings, however, suggest these concerns will be overcome by the sheer ease and convenience of voice as a channel. More than four out of five (84 per cent) of our bankers believe that voice-activated digital assistants will become the next major consumer channel and 78 per cent think the majority of digital natives, those who have grown up with Internet-related technology, will embrace voice as a banking channel within the next two years.

When do you expect the majority of digital natives to be ready to embrace voice as a banking channel? *(in cumulative figures)*



[31] *Research by YouGov, April 2018*
[32] *YouGov, April 2018*
[33] *https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/voice-assistants.html*
[34] *The Rise of Voice, Invoca, November 2017*
[35] *Prepare for the voice revolution, PwC, March 2018*

When do you expect the majority of digital immigrants to be ready to embrace voice as a banking channel?
(in cumulative figures)

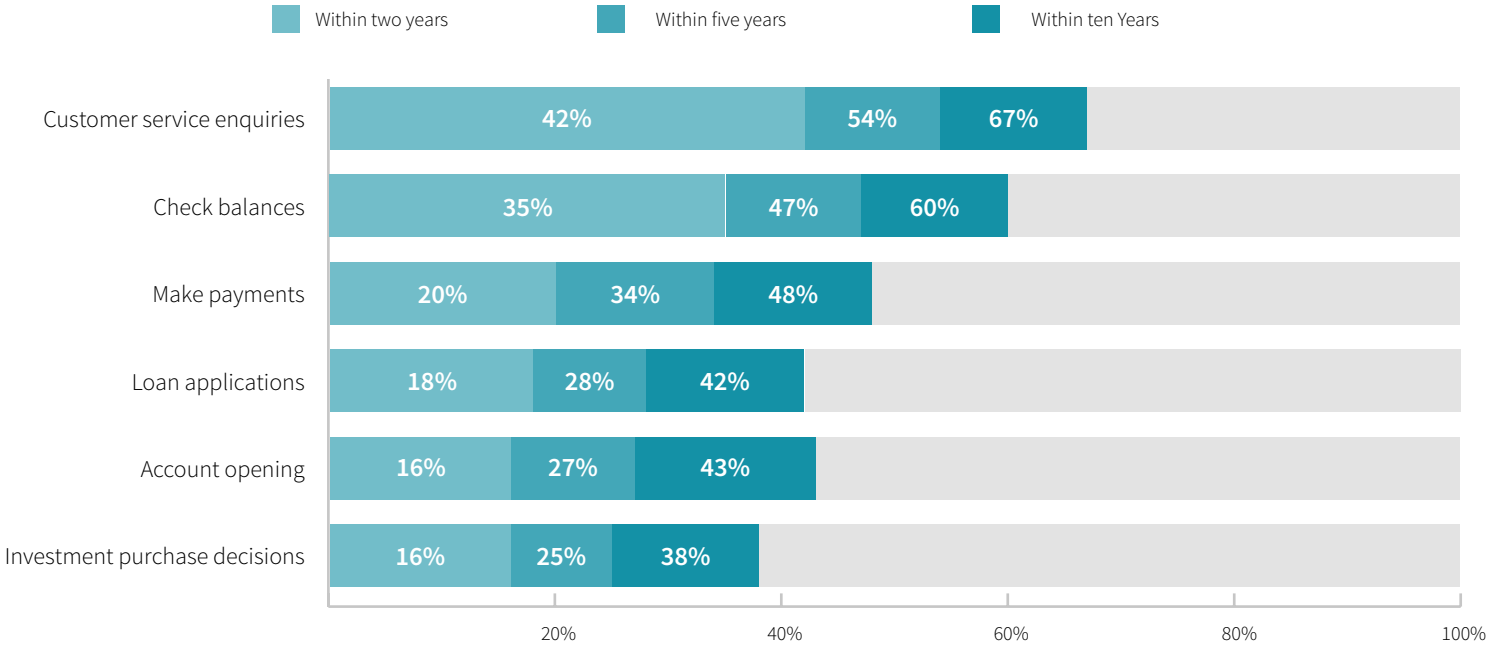


But it is not just younger consumers who are expected to migrate to voice-activated banking: two-thirds (67 per cent) think that the majority of digital immigrants (those born before the dawn of the Internet) will be ready to bank via voice within the next five years. Indeed, it seems voice has an advantage over other channel innovations that could see its uptake exceed that of mobile apps and instant chat: seven out of ten of our surveyed bankers agree that the ease of use and instinctive nature of voice-activated technology means its take-up will be more evenly spread across the generations.

70% think the ease of use and instinctive nature of voice-activated technology means its take-up will be more evenly spread across the generations

Voice, everywhere

Percentage of customer interactions that will be executed over voice-activated channels in the following timeframes



Voice is expected to gain most traction in customer service, with our respondents expecting four out of ten enquiries to be handled via voice channels in just two years' time, with more than half (54 per cent) handled by voice within five years and two thirds (67 per cent) within in a decade. These are remarkable numbers for an entirely new channel that relies on newly-emergent technology; after all, when First Direct launched telephone banking, it was using technology that had been tried and tested over decades and was already ubiquitous in daily life.

And it is not just customer service enquiries that will be handled via voice. Our respondents expect customers to quickly grow comfortable with using voice to check their balances and make payments: according to our surveyed bankers, within just five years, almost half of balance checks and a third of payments will be activated via voice.

Some pioneers are already well underway offering these services via voice: regional banking giant US Bank is the first bank to be on all three services — Amazon's Alexa, Apple's Siri and Google's Assistant – allowing customers to check bank balances, pay US Bank credit cards and mortgages, ask Alexa or Google the due dates on bills, and other basic functions. Credit card companies Capital One and American Express both have Alexa skills that allow customers to check their balances and pay bills, while Australian bank Westpac enables its customers to use Siri to check their bank accounts and make payments, using fingerprint or face ID to authenticate the payment.

And why stop there? Even more complex onboarding procedures, from account opening to loan applications, are expected to migrate to voice over the course of the next decade.

Teething troubles

AI-powered digital assistants are still in their infancy, however, and the technology is far from flawless: one survey found that nearly half of users said their voice assistant cannot answer their commands at least a quarter of the time[36]. When it fails, people will typically revert to an online search, but research suggests they would prefer to continue talking if that connection could be made seamlessly: the same survey found that 76 per cent said that if their voice assistant could have easily connected them to a human who could answer their question, they would have done that instead of an online search.

This is particularly the case when it comes to more complex or sensitive issues. When making a complicated or expensive purchase or a purchase requiring customisation, most consumers would prefer a phone call with a human rather than a digital voice assistant or online search, and they rate a phone call more secure than a voice assistant or chatbot when it comes to sharing personal information[37].

It seems that voice will only achieve its growth potential if it is synced with human talent: 88 per cent of or respondents agree that voice-activated channels will only gain traction if customers can be seamlessly connected to human operatives should AI fail to meet customer needs. Unsurprisingly, this is exactly what our surveyed banks plan to do, with 89 per cent of them expecting to link voice-activated channels with their contact centres.

Indeed, investment in voice channels cannot be at the expense of the contact centre, which looks set to remain a central part of the customer journey. Voice channels can create more demand for human interaction rather than less: one study found that one in four consumers say they call businesses more often as a result of the voice assistant. The trick for banks will be to make sure that this transition is as smart and seamless as possible, with the AI assistant used to collect relevant customer data, understand customer intent and then deliver that insight in real-time to a customer service agent, who can then impress with a personalised and empathetic interaction. Rather than replacing the human conversation, the AI voice assistant should make it better.

Within 5 years, 54% of customer service enquiries will be via voice channels

88% agree that voice-activated channels will only gain traction if customers can be seamlessly connected to human operatives should AI fail to meet customer needs

89% expect to link voice-activated channels with their contact centres

[36] *The rise of voice, Invoca*
[37] *The rise of voice, Invoca*

First mover, or wait-and-see?

Our surveyed bankers may make gung-ho predictions about the take-up of voice but just not in their own organisation. We find the industry is split almost 50/50 between those proactively experimenting with voice as a channel and those waiting to see a proof of concept by another organisation before investing further.

The approach that banks are taking towards using voice assistants as a channel

Waiting to see a proof of concept by another organisation before investing further - 51%

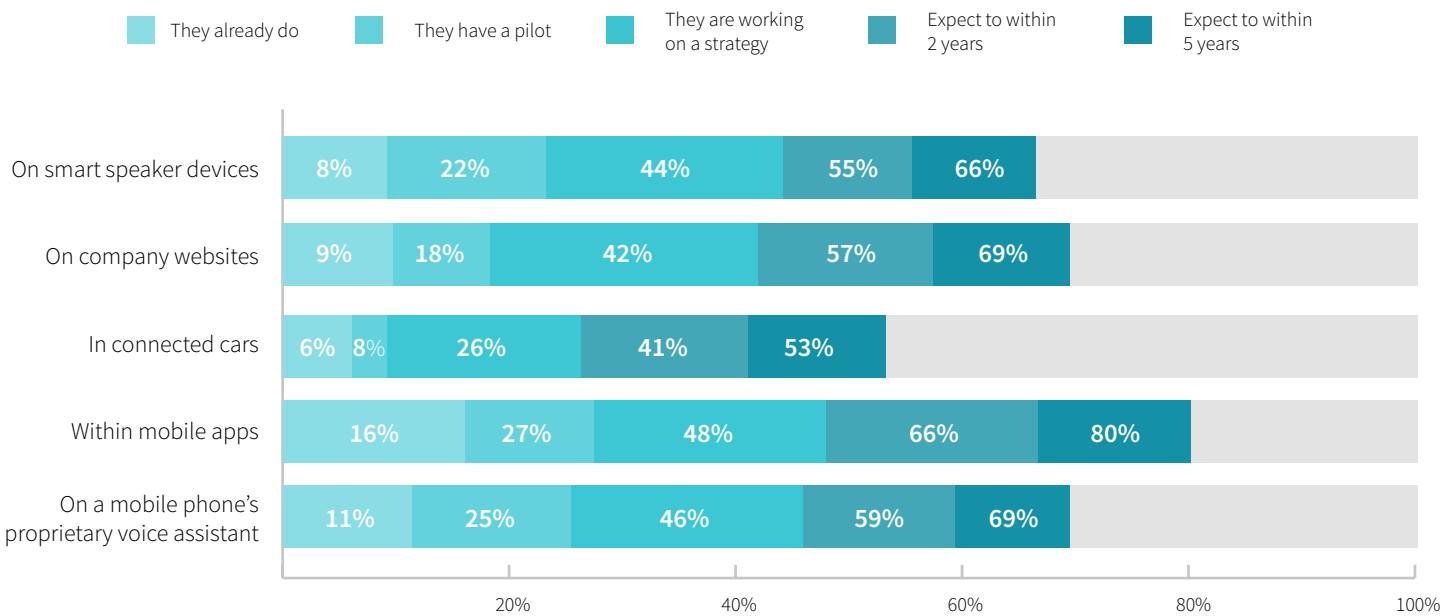
Proactive in experimenting with voice as a channel - 49%

In all likelihood, those who grasp the nettle will enjoy first-mover advantage. First Direct, for example, pioneered telephone banking and then built a headstart that has yet to be bettered when it comes to customer satisfaction, with the bank consistently ranked number one by its loyal customer base. Given that AI-powered voice assistants will only improve the more they are used, a wait-and-see approach could see rivals steam ahead.

The majority of our surveyed banks (58 per cent) do expect to be using voice in at least one area of their operations within the next two years, with the preferred route being to offer voice through either their own mobile app or website, followed by smart speakers, mobile phone voice assistants and connected cars.

58% expect to be using voice in at least one area of their operations within the next two years

How far have banks progressed with using voice-activated technology in the following channels?



Security, action needed

It is clear, however, that voice-enabled banking will have to overcome serious security and privacy concerns. There have been a number of highly-publicised incidents, where a smart speaker has broadcast private conversations and hackers have shown it is possible to use techniques known as "voice squatting" and "voice masquerading" to get users to interact with malicious apps by taking advantage of AI's weaknesses when it comes to voice understanding human speech. There are also privacy concerns: consumers will not welcome Siri blurting out their bank balance in public. Indeed, almost seven out of ten of our respondents blame security concerns for their organisation's slow progress in developing a voice offering.

68% **say security concerns are a significant barrier to adopting voice as a channel**

Edge processing, a significant breakthrough?

Here, the latest on-device, edge processing could provide a solution by allowing advanced AI to take place within the device rather than sending information back and forth via the Internet and Cloud. Mobile devices are potentially up to the task, with a huge amount of untapped processing power available on smart phones, tablets, and other mobile devices. By moving computational processes to mobile devices, banks could harness an overlooked computing resource, located where data is created, thereby reducing concerns about moving high volumes of sensitive data to the cloud, as well as increasing the speed of processing to improve the customer experience.

The technology to enable this hugely powerful on-device processing is already here. Last year Apple's iPhone X was launched, complete with its own powerful "neural engine" designed to accelerate certain kinds of AI software that are good at processing images and speech. Makers of smart home kit are also leading the way, with the recently announced Nest Can IQ indoor security camera using on-device vision processing without using huge amounts of bandwidth to send raw streams of video over the network.

It is a development that our surveyed bankers are watching with interest: more than three-quarters (76 per cent) agree Apple's new processing capability will be a significant development in facilitating the use of mobile-based voice assistants as a banking channel.

AI limitations?

This is an area of technology that is developing rapidly. Already the earliest iterations of voice assistants – those on smartphones - are frustrating consumers who are used to newer smart speakers: one survey found voice assistants on smartphones have the lowest consumer satisfaction rate due to complaints about an apparent lack of understanding, reliability, and accuracy when compared to a standalone speaker[38]. And even standalone smart speakers have their limitations when it comes to understanding the nuances of human conversation, prompting manufacturers to encourage users to have longer conversations to help the AI assistants learn and develop. Indeed, just over half (51 per cent) of our surveyed bankers believe a lack of sophistication in AI is a significant barrier to their organisation adopting voice as a channel, suggesting there is still much work to be done to bring this technology up to scratch. However, given the current pace of change and the technology's ability to learn, this is one barrier that looks set to be overcome soon. Once again, the wait-and-see approach could prove costly.

76% **think Apple's introduction of a dedicated neural engine on the latest iPhone will be significant in facilitating the development of Siri as a banking channel**

51% **believe a lack of sophistication in AI is a significant barrier to their organisation adopting voice as a channel**

[38] *PwC Consumer Intelligence Series voice assistants survey, 2018*

Chapter viewpoint: Yext

By Jon Buss, Managing Director, UK & Northern Europe, Yext

Voice is quick, convenient and intuitive so it's no surprise to find it's quickly gaining traction with consumers of all ages. From checking balances to frictionless payments, voice could become the channel of choice for busy consumers or those who struggle with keyboards. But this is an ongoing evolution, and today, the biggest challenges facing retail banks is ensuring accurate business data on voice channels.

Consumers are increasingly accessing information about their bank through third-party voice assistants, such as Amazon Alexa or Apple Siri. Asking questions like 'where is my nearest cashpoint?' or 'is my nearest branch location open now?' or 'where is the best place to get mortgage advice'. Unlike online search, voice assistants only give one answer to queries and banks need to make sure they have control over the information shared about their business.

A regulated industry like banking, however, needs to be careful how it deploys this new technology. Security and privacy concerns must be foremost, with banks careful to build in safeguards, such as biometrics, to authenticate users.

All banks, therefore, must take steps to protect their brand in a voice-assisted world. This means ensuring that the digital universe of maps, apps, search engines and other intelligent services are cleansed of errors, formatted consistently and that information is structured in such a way that it can be easily accessed by the algorithms behind today's voice-powered services. Best-in-class knowledge management should be a priority ready for integration with the likes of Alexa, Siri and Google Assistant to make sure accurate and up-to-date facts are supplied to the databases behind these voice-powered assistants.

Consumer comfort with voice is growing rapidly and all banks, even those taking a cautious approach to developing their own voice channels, need to act to protect their brand, reputation and relevancy in this new world.

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