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The road ahead: Artificial intelligence and the future of financial services

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About the research

The road ahead: Artificial intelligence and the future of financial services is an Economist Intelligence Unit report, commissioned by ThoughtSpot. The report analyses the results from a survey of 200 business executives and C-suite managers performing both information technology (IT) and non-IT functions at investment and retail banks and insurance companies. The survey examines where and to what degree artificial intelligence (AI) technologies are being adopted within the financial services industry, how these institutions measure its success and what challenges remain to be overcome.

Through our survey and in-depth interviews with leading experts we sought to determine how these changes will shape the financial services industry in the coming years.

Our thanks are due to the following individuals for their time and insight:

- **Cary Krosinsky**, lecturer, sustainable finance, Yale School of Management
- **Kerry Peacock**, chief of operations EMEA and international head of operations, MUFG Bank (London Branch)
- **Alaa Saeed**, managing director and global head, Institutional eSales and Client eCom Products, Citibank (London Branch)

This report was authored by Dewi John and edited by Katya Kocourek.

Executive summary

The financial services industry has long been an early adopter of technology. The telegraph system was still a novel idea when Western Union began using it for money transfers in the mid-19th century. Online banking emerged in the mid-1990s, half a decade after the internet and well before most people had an email account.

This revolution in technology has gone from gathering data to connecting people. The next stage will be providing valuable interpretations of that data for those, now networked, people. As artificial intelligence (AI) is increasingly considered the new engine of growth in the modern age, different financial sectors—investment banks, retail banks and insurers—have been incorporating it into their systems with varying degrees of success. These trends are surveyed and analysed here as well as the ways in which AI is being used.

Key findings of the study are:

- **Investment banks emerge from the survey as trendsetters.** In terms of AI adoption, investment banks are followed by their retail peers. Insurers trail behind, probably because there are fewer and simpler products in this sector. Due to their size, banks inevitably grapple with a number of complex, large-scale challenges. The implementation of innovative tech can offer invaluable solutions to these problems, with AI often at the forefront of these changes.
- **From a regional perspective Asia Pacific (APAC) heads the pack.** Almost 61% of all APAC respondents reported that half or more of their workload is supported by AI. This far outstretches North America and Europe (both at 41%).
- **A wide range of AI technologies have been implemented by banks and insurers alike.** Virtual assistants, machine learning and predictive analytics are most widely utilised among those in the “heavy adopter” category, with natural language processing just behind. Again investment banks are the trailblazers, except with predictive analytics where retail banks have a clear lead.

- **Customer and stakeholder satisfaction were the main measures of AI success.** Beyond this, respondents also point to reduction in operating costs and increased return on investment as important factors. However, almost 10% of European respondents either had no metrics to measure AI-application success, or had not been measuring it for long enough to provide insightful reports. By way of contrast, all APAC respondents had functional reporting metrics.
- **The transformative nature of these technologies will be profound.** For example, manual tasks that were predominantly offshored in recent decades are now being automated. This will lead to a streamlining of workforces, with those remaining being increasingly skilled and performing higher-value functions. While there is a broad acknowledgement that this will necessitate relevant employee training and company-wide cultural shifts, the degree to which this has already taken place varies: once again APAC leads the field regionally while investment banks are most advanced in their implementation of training schemes.
- **The largest perceived barrier to wider adoption of AI is cost.** Insufficient infrastructure and poor data quality follow as priority areas of concern. Industry experts see this cost as a potential catalyst for consolidation as the larger incumbents benefit from scale when it comes to reaping the primary benefits of AI.

Who is leading the race for AI?

Artificial intelligence (AI) technologies are prevalent across investment and retail banking and insurance globally. There are, however, distinct differences at the sector and industry levels.

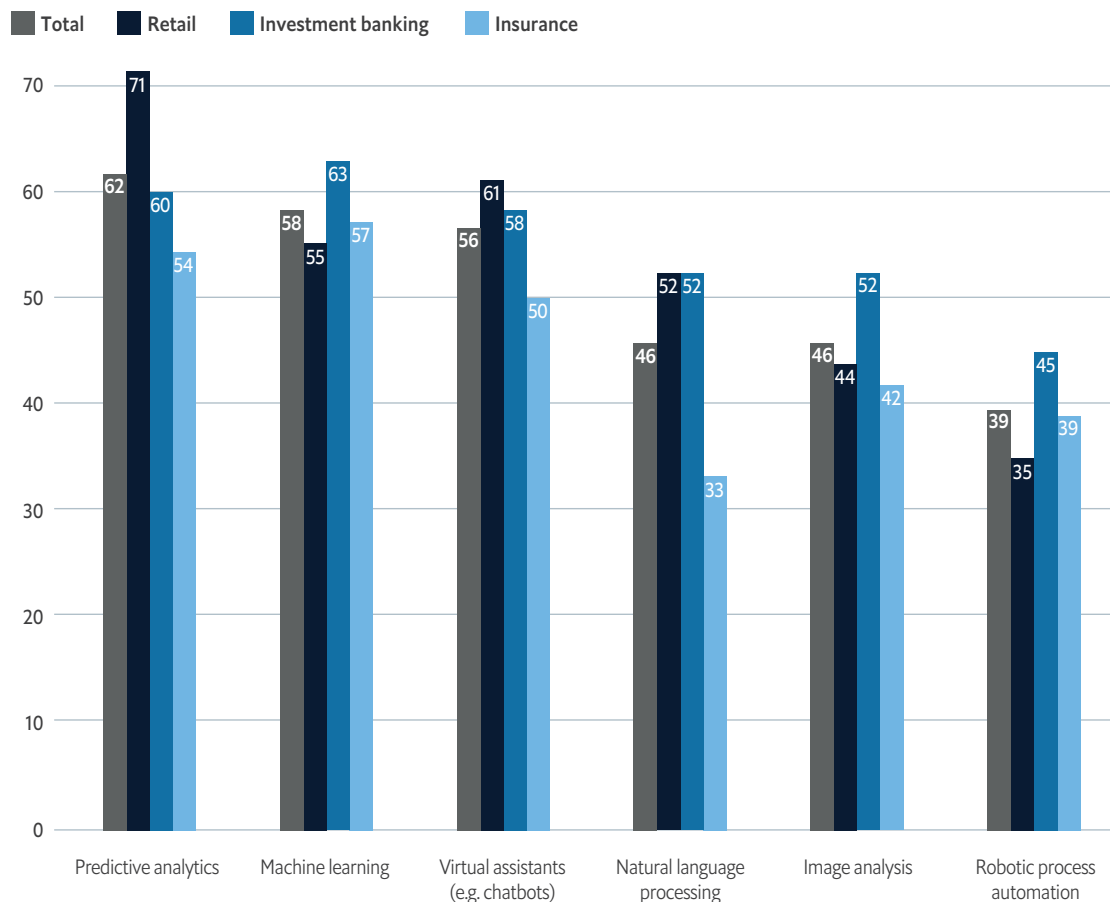
In order to gauge the effect AI is already having among those making most use of it, the survey looks at the specific technologies being used by “heavy adopters” (those who indicated that

50%-plus of their individual workload is supported by AI) as opposed to “light adopters” (whose individual workloads are less than 50% supported by AI).

Within the category of heavy adopters, virtual assistants, machine learning (ML) and predictive analytics are making the running followed by natural language processing (NLP) and image analysis.

Figure 1: AI most in use

What AI applications are used by your organisation at present?
(% of respondents)*

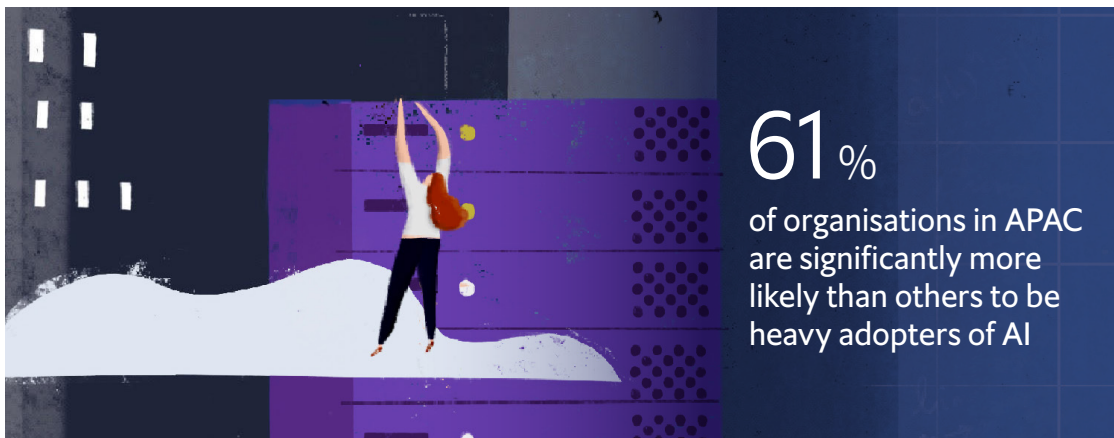


Investment banks are taking the lead in implementation of most AI applications, including NLP and ML, while retail banking has the edge in predictive analytics (71% adoption), which reflects the significant usage of data science tools in customer retention. However, insurance lagged in all fields. A recurring theme throughout the research, this is probably due to the fewer and relatively simpler products in the insurance industry compared with the banking sector.

Overall, larger organisations (with 5,000+ employees) have higher AI penetration than their smaller counterparts (54% and 49%

respectively), which mainly reflects the level of investment available to big firms for a multitude of AI technologies. This puts the larger firms in a good position to deal with the burden of overcoming legacy systems.

Of the heavy adopters, the main perceived benefit of AI for around 40% is increased employee capacity to handle volume of general work. In stark contrast, light adopters do not consider this a main benefit (at just 27%). It appears that in order to reap this benefit there is a hurdle of a certain level of investment that is simply unattainable for many light adopters.



Main benefits

The benefits of AI are many and often vary between sectors and regions. Overall, companies see AI as an important lever to innovate, launch new products and services and enter new markets.

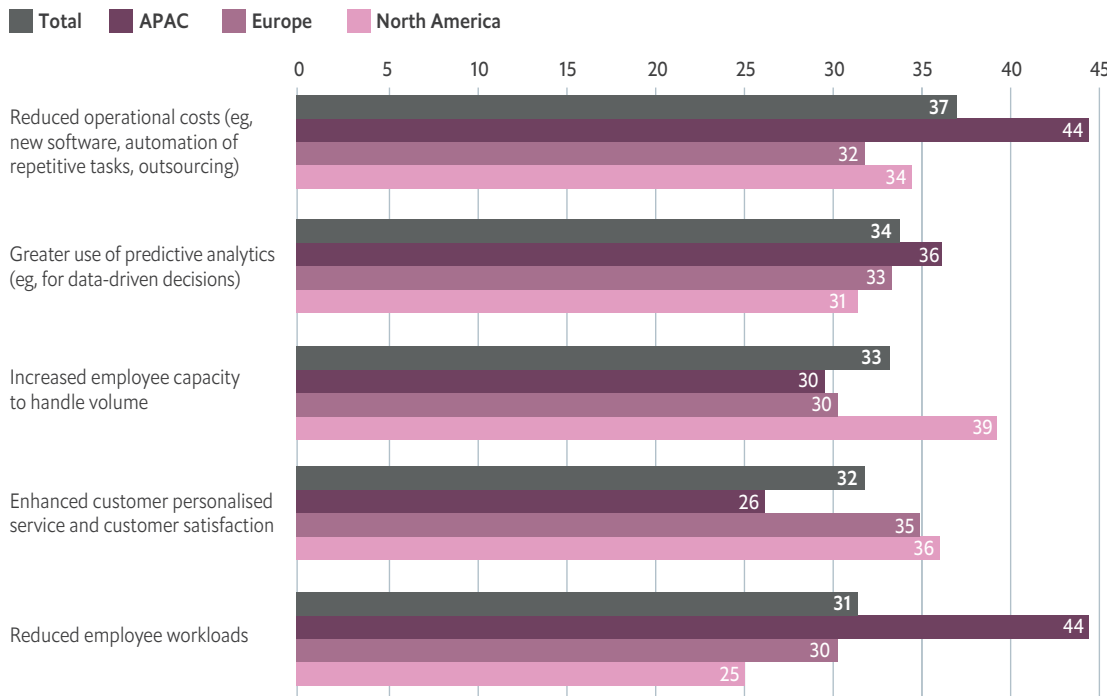
In the survey round, lower operational costs emerged as the top benefit of AI, as cited by 37% of respondents. Around a third said the same about facilitating data-driven decisions through greater use of predictive analytics and increasing employee capacity to handle larger volumes of work.

Regarding such capacity benefits, Cary Krosinsky, a sustainable finance lecturer at the Yale School of Management, says this is, in effect, using new tools to achieve an old objective: “what the industry has always attempted to do—maximise returns”. Some 36% of heavy adopters also saw more efficient product and marketing services as a significant benefit, a view shared by just 23% of light adopters. This is probably because these benefits derive from market monitoring that can only come into effect when more “core” AI systems are in place for companies.

Figure 2: Top benefits

Which of the following are the most significant benefits that your organisation has experienced or expects to experience as a result of the adoption and use of AI? Select up to three.

(% of respondents)*



*The above chart includes respondent answers in the five strongest categories for this particular question.

Source: The Economist Intelligence Unit

Improved risk management, such as fraud prevention, was the main perceived benefit for APAC respondents (46%), while reduced operational costs and reduced employee workloads were the other two predominant perceived benefits (44%). It's possible that these two factors tie in with the fact that APAC is the location of many employee-heavy service centres where these technologies are already having an impact.

For Alaa Saeed, MD and global head of institutional eSales and Client eCom products at Citibank in London, the benefit of the AI technologies underpinning many of these developments "is huge because it standardises things". Such standardisation in areas such as NLP and ML can be followed by better controls, governance and efficiencies of scale. This is a "relatively new scenario," he says, made possible by software platforms integrating chatbots and automating ever-more complex requests that were previously resource- and people-intensive.

In addition, these technologies could lead to a much-needed shaking out of financial services, reckons Mr Krosinsky. "Large operations such as JP Morgan have the advantage that they

can invest heavily to reap the benefits. Smaller operations that don't have the scale face an increased risk of going to the wall. Arguably, large operations should be larger, leaving niche players to service more specialised needs." He speculates that second-tier firms may make easier merger and acquisition (M&A) targets, leading to further consolidation across the financial services sector.

While similar proportions of heavy and light adopters selected enhanced customer service as a benefit of AI implementation, varying proportions (66% of heavy adopters and 43% of light adopters) selected customer/stakeholder satisfaction as a measurement of success.

North Americans have the greatest ambitions here with 33% believing AI will change how they innovate and 31% saying that it will allow them to release new products and services. Those figures are lower for APAC and Europe (see Figure 3).

Despite this, respondents from APAC and North America see the greatest opportunity to enter new markets (at 30% and 27% respectively). This reflects the higher rates of economic growth in both regions overall compared with the rest of the world as well as the level of AI investment from individual firms to support business growth.

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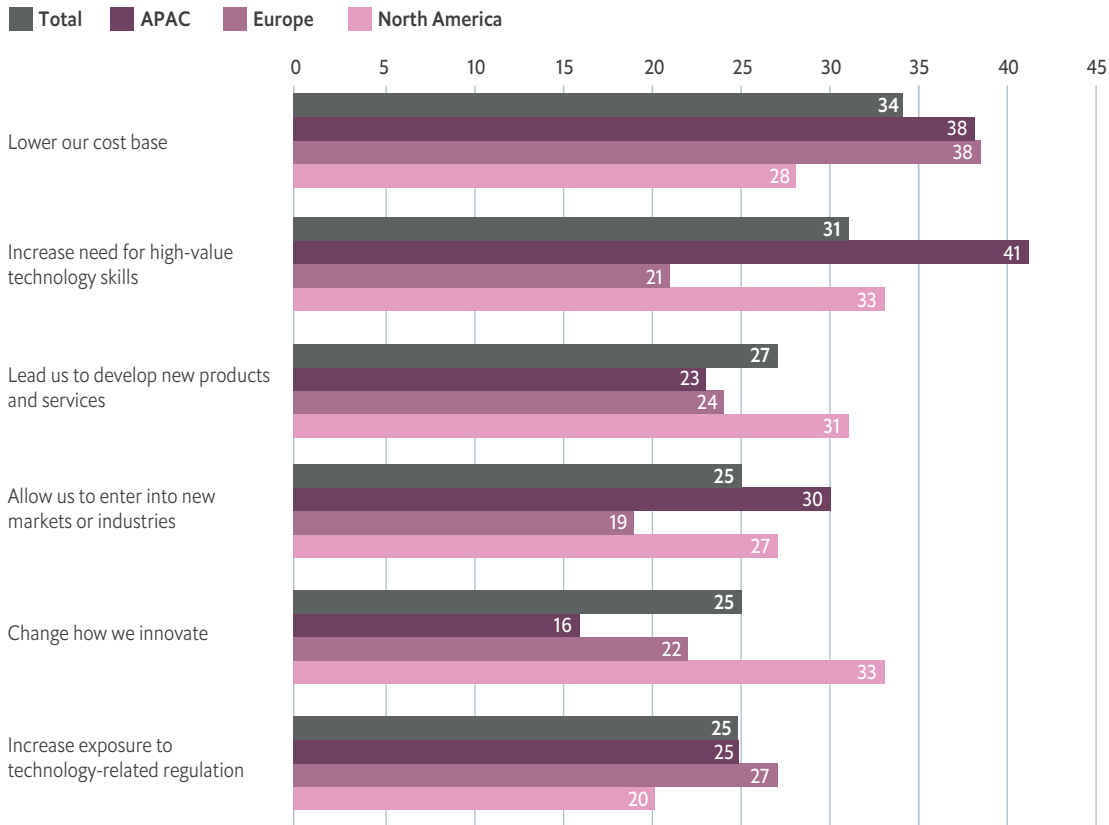
Arguably, large operations should be larger, leaving niche players to service more specialised needs.”

Cary Krosinsky, lecturer,
sustainable finance,
Yale School of Management

Figure 3: How will AI change business?

In what ways do you think AI is most likely to significantly change your business in the next five years? Select up to three.

(% of respondents)*



*The above chart includes respondent answers in the six strongest categories for this particular question.

Source: The Economist Intelligence Unit

Despite their lower overall commitment, it's the insurers who predict the greatest impact of AI—32% expect to see a significant impact on both their product shelf and manner of innovation over the next five years. Only about a quarter

of bankers share this view. This may be because insurers' lower commitment thus far allows for a greater base effect, with a similarly notable effect on the narrower product shelf they have in comparison to investment and retail banks.

True measures of success

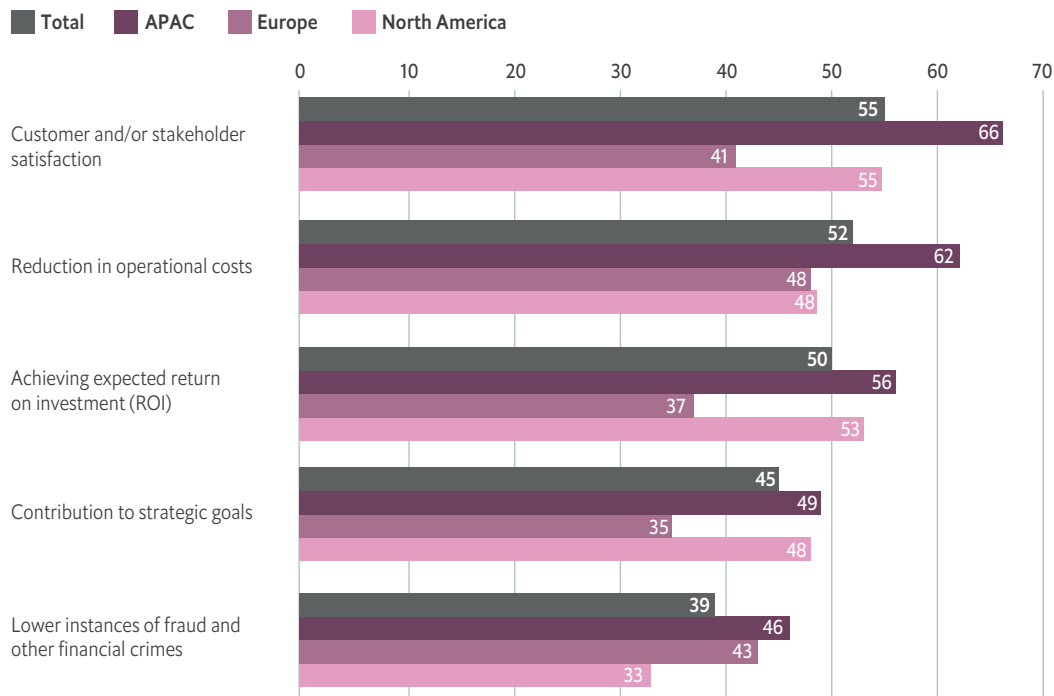
While most respondents and experts agree that gauging the success of AI applications is important for business strategy, there are diverse views regarding the most reliable metrics.

Customer and stakeholder satisfaction were the prime measures of AI success, much more so for APAC respondents (66%) than those

in Europe (41%). The discrepancy is largely attributable to the fact that 6% of European respondents say metrics had not been in use for long enough to make an assessment, while 3% had no established metrics whatsoever. This contrasts with the view from APAC where the figures were zero in each case—all APAC respondents have workable metrics in place.

Figure 4: Key metrics

How does your organisation measure the success of its AI applications?
(% of respondents)



Source: The Economist Intelligence Unit

Mr Saeed notes the importance of customer satisfaction to gauge success, especially in the areas of NLP and ML where there is significant client demand for services such as automated chats and request for quotes (RFQs), both of which rely on such technologies. While this may carry “a franchise risk of inadvertently responding incorrectly to your client or a group of clients,” Mr Saeed says, “it’s less of a high risk than a market impact risk”. But he explains that “the framework [for customer service and chats] is becoming more robust”.

Reduction in operational cost was the second key metric, followed by the impact on the expected return on investment (ROI). These factors scored significantly across all three sectors, but especially so for retail banking. The impact on ROI was deemed particularly significant in APAC (56%), closely followed by North America (53%) and in contrast to just 37% of European respondents. APAC respondents also report a reduction in operating costs as the second most important factor (62%). Regardless of the sector, however, these three measures comprised the top three metrics.



Franchise risk is less of a high risk than a market impact risk.”

Alaa Saeed, managing director and global head, Institutional eSales and Client eCom Products, Citibank (London)

A transformational journey

The impact of these technologies on how financial companies are structured will be profound.

Kerry Peacock, EMEA chief of operations and international head of operations at MUFG in London, highlights one effect on the hitherto ubiquitous call centre, shedding light on why retail banks are leading in virtual assistants. “If you go back even as recently as five years, for heavily manual functions that are repetitive and process driven you would look to a low-cost geography such as India to perform those tasks. That was yesterday’s strategy. Today and tomorrow, you move to a digitised workforce and build robots.”

Mr Krosinsky agrees that a major impact of these changes will be to “do away with many traditional jobs” in a way that could extend well beyond offshorable manual jobs. This could be transformative for those cities with high levels of dependence on financial services, such as London and New York. He believes that in five

years there will be far fewer financial services jobs “and one knock-on effect could be that this will depress real estate prices in these cities”.

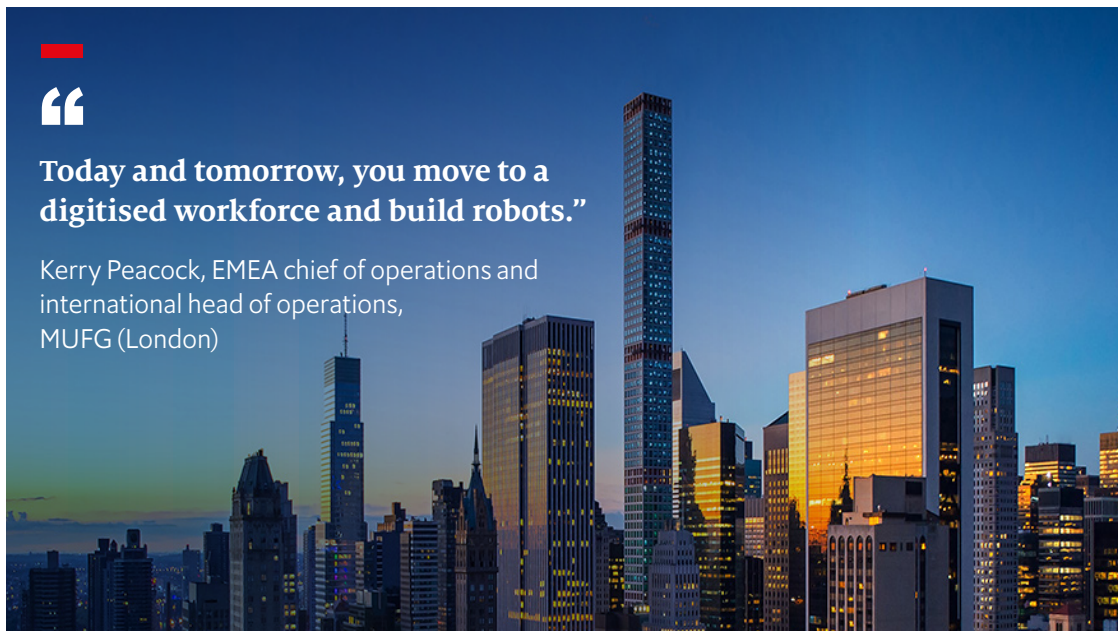
Greater adoption of AI will nevertheless be gradual, particularly in the banking sector. “I’ve started to introduce robots into my operation,” says Mr Peacock. “[In] doing that, you have to overcome what’s called automation anxiety; the ‘robots are going to take my job’ type of fear.” As such, introducing robots into the workplace is “something that has to be done very carefully,” he says.

Similarly, Mr Krosinsky believes that it’s not simply a question of job replacement. In some areas AI will “supplement and enhance actual people”. In this respect, everything leads back to people: taking the strain off them, or at the very least allowing them to do more with the same workload.



Today and tomorrow, you move to a digitised workforce and build robots.”

Kerry Peacock, EMEA chief of operations and international head of operations, MUFG (London)



Overcoming legacy systems and other barriers

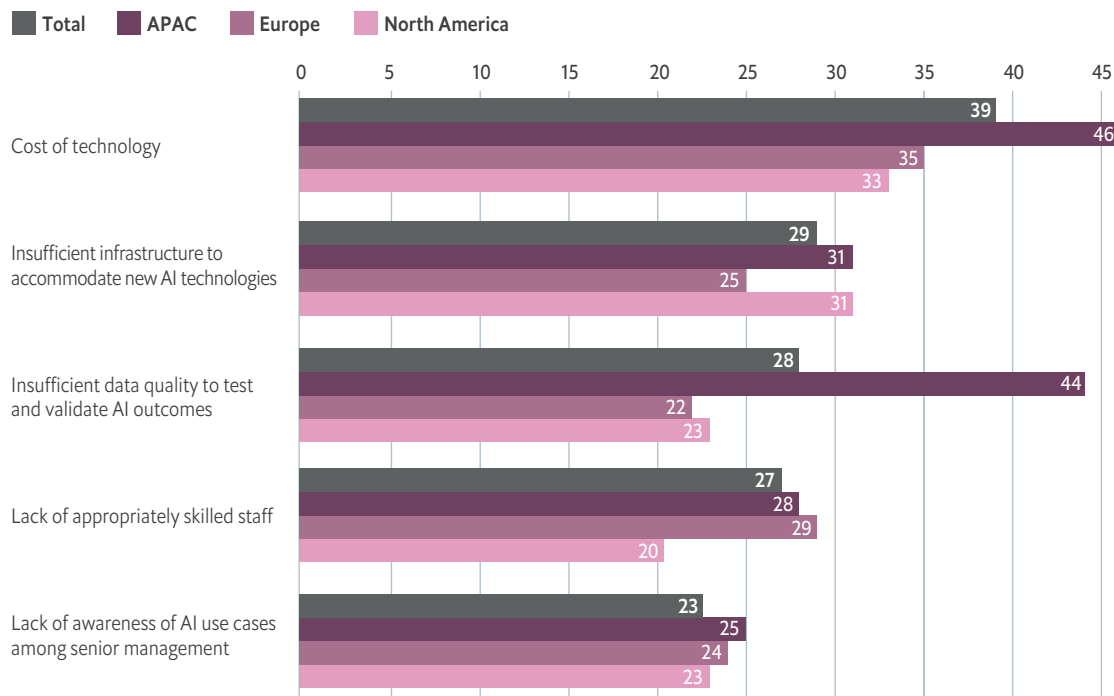
For those organisations that currently use AI the main barrier to wider adoption is the cost of technology (39%), which comfortably tops insufficient infrastructure and poor data quality as the primary areas of concern (though lack of infrastructure is also fundamentally a cost constraint).

In a bid to meet this challenge, 86% of respondents plan to increase AI-related investment into technology over the next five years, with the strongest views expressed in APAC (90%) and North America (89%). Investment into AI technologies could help resolve issues of legacy systems that have proved, along with systemic upgrades, a costly albatross around the necks of financial services business.

Figure 5: Main barriers

What do you believe are the main barriers to the wider adoption or use of AI within your organisation?

(% of respondents)



Source: The Economist Intelligence Unit

The upskilling revolution

Training and reskilling will be vital for financial services firms to implement innovative products and services in the future. In terms of AI specifically, the workforce will require different and more complex skills as time progresses. This is recognised by respondents and experts whose focus is not only on how AI changes the quantitative nature of what employees will be doing but also the qualitative aspects of their job: in short, upskilling.

“There is an expertise and staffing that you have to build,” says Mr Saeed. “But we’re seeing the skillsets of our people change. And so our people are becoming more technical, more quantitative. And our technology team and front office team are getting closer and closer aligned.”

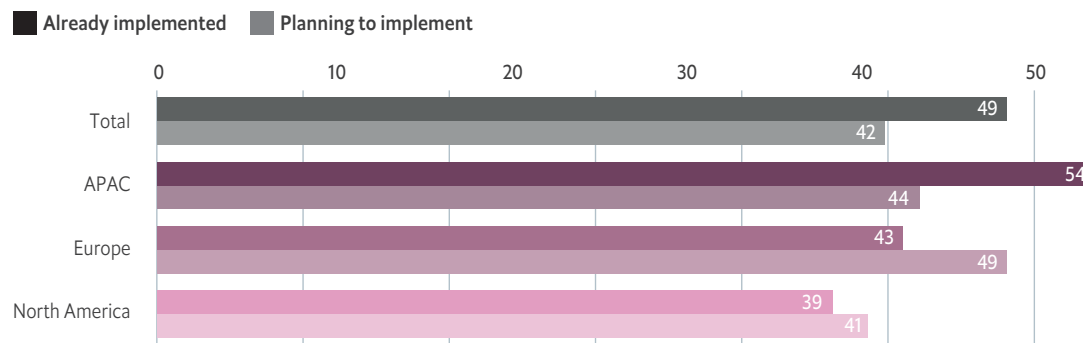
The importance of technological skills is emphasised by our survey respondents.

The level of value-add to the business assumes a greater degree of investment into technological infrastructure that should make AI applications more compatible with existing systems.

Europe was marginally ahead of APAC in asserting the need for retraining, but 11 percentage points behind when asked if such training had been implemented (APAC: 54% vs Europe: 43%). This may simply reflect the fact that Asia increasingly leads the field in technology, as Mr Krosinsky notes. “With Asia heading to become half the world’s economy, a lot of these developments will happen there. Within Asia, given that Hong Kong is now less attractive as a financial centre, Singapore has a massive opportunity to take the lead, although this is something that China might sensibly resist.”

Figure 6: View to the future—training to accelerate implementation of AI

To what extent has your organisation implemented or is planning to implement a technical training scheme for employees to improve understanding and use of AI
(% of respondents)



Source: The Economist Intelligence Unit

Investment banks are most advanced in the implementation of training schemes—54% of respondents say they have already been implemented compared with 46% in insurance and 48% at retail banks. This probably explains why only 17% of all respondents see a lack of specialised training as a risk to AI adoption. “Increasingly, we’re running computer science or coding training courses for our folks,” says Mr Saeed. “There’s a ton of investment into this space which tells you what we think about, where we’re going and the benefit of

this.” Clearly, a sea-change in reskilling will necessitate greater investment in people.

Diverging regional views were also seen in the expectations of technology training between respondents performing an IT function and those performing other roles. Whereas 33% of the former and 29% of the latter see an increasing need for high-value technology skills (broadly the same), only 17% of tech-focused respondents see this as resulting in retraining and reskilling as opposed to 30% of non-tech respondents.



Conclusion

AI is at the forefront of a major shift within the financial services industry, but periods of rapid change are not without their risks.

There is nevertheless an awareness of the risks associated with AI technologies within businesses, and in some cases there are clear strategies to navigate them. However, coming to terms with some of these—notably the technological and associated regulatory risks—may yet take a while. This is especially pertinent for banks whose business has not fundamentally changed and is unlikely to do so in future. “If we look at the business, if you look at the products that we generate as financial institutions, they haven’t

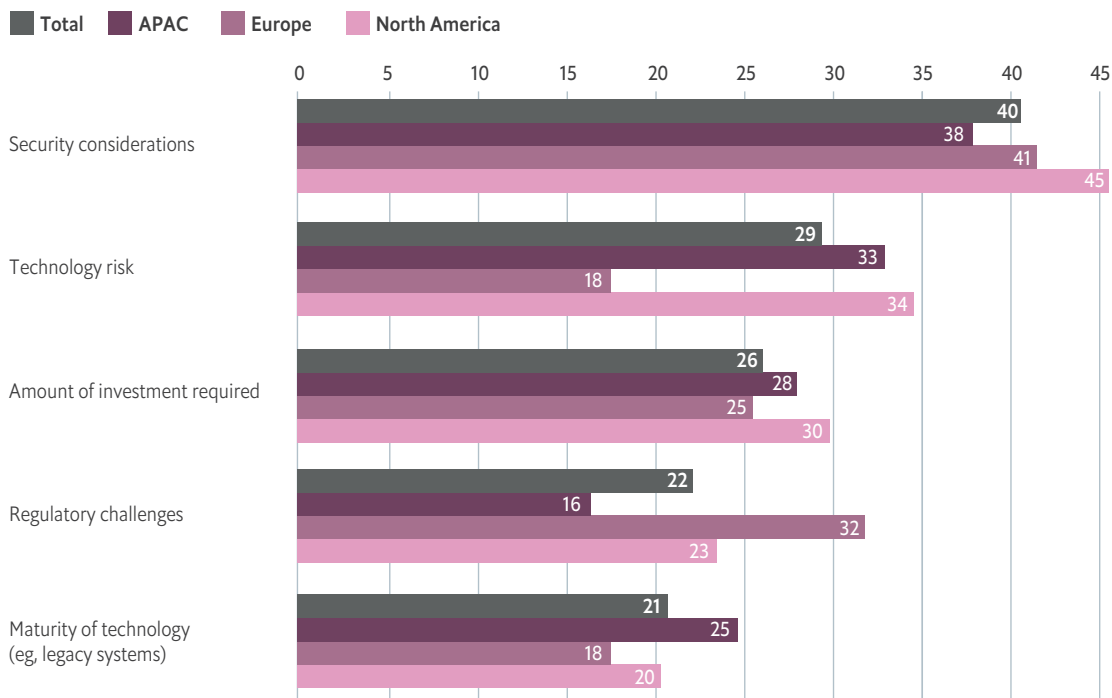
changed,” Mr Peacock explains. “Coming back to basics, you can either buy or sell, borrow or lend. That’s literally all you can do. It’s as simple as that.”

Businesses that are able to get ahead of the curve in AI adoption appear to be those carrying less technological baggage, making legacy systems simpler to deal with. The benefits of greater AI adoption are widely recognised across the financial services industry, including reduced cost base and better predictive analytics. Such innovation, and its costs, will inevitably drive consolidation. And, ultimately, the focus on customer satisfaction as a crucial measure of success will drive more optimal market outcomes.

Figure 7: Principal risks

In your opinion, what are the principal industry risks of AI adoption?

(% of respondents)



Source: The Economist Intelligence Unit

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