

AI: a new age of intelligent banking

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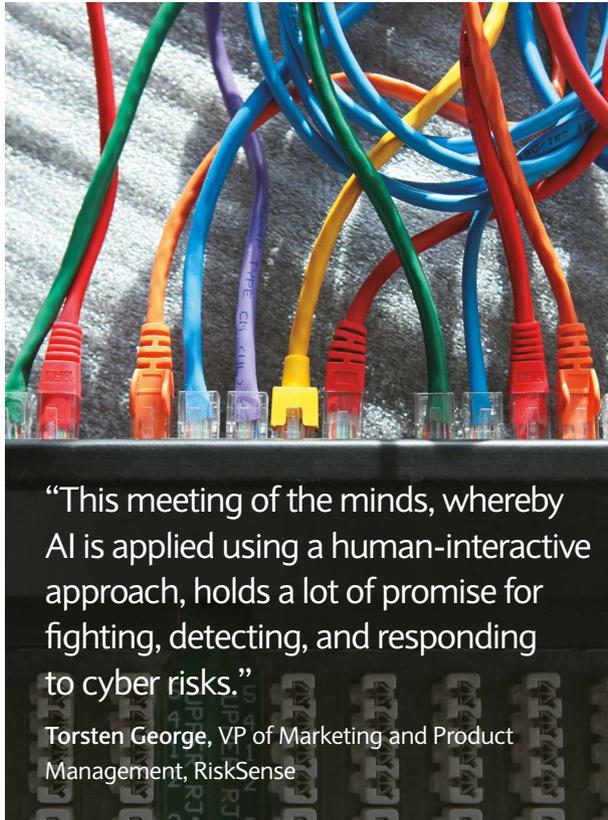
Artificial intelligence is no longer about recreating the human mind. For financial services firms, it is a chance to get smart about reducing margins for error and processing an increasing volume of data. And that is just the start.

## Moving into the mainstream

Once the stuff of science fiction, artificial intelligence (AI) has moved quietly into the mainstream and is transforming the financial services industry. Fundamentally, AI involves the development of computing systems that are able to engage in human-like thought processes, such as learning, reasoning and self-correction. The technology drastically improves the outcomes, however, by applying methods derived from aspects of human intelligence at a beyond-human scale.

## We cannot predict what we might achieve when this intelligence is magnified by the tools that AI may provide.

The potential benefits of harnessing and perfecting artificial intelligence are almost unfathomable. As Stephen Hawking and colleagues wrote in an article in the Independent: "...everything that civilisation has to offer is a product of human intelligence. We cannot predict what we might achieve when this intelligence is magnified by the tools that AI may provide, but the eradication of war, disease, and poverty would be high on anyone's list. Success in creating AI would be the biggest event in human history."<sup>1</sup>



## A smart investment

The application of AI in financial services could be particularly game-changing. From automated credit scoring to digital financial assistants and fast, accurate expense reporting, there are numerous ways in which machine learning is already having an impact on organisational process and customer journey.

And it's big business: 550 start-ups across the world that utilised AI as a core part of their product offering raised \$5bn in funding in 2016.<sup>2</sup> It is also expected to add \$814bn to the UK's economy by 2035.<sup>3</sup>

While the US initially led the way in the development of AI, its share has reduced over the past few years. Non-US deal share increased from 21% in 2012 to nearly 40% in 2016.<sup>4</sup>

It is clear, however, that investment in safeguarding this technology is equally important. Earlier this year, US-based Knight Foundation, LinkedIn Founder Reid Hoffman and others set up a \$27m fund to support global research into the ethics and governance surrounding artificial intelligence.<sup>5</sup>

<sup>1</sup>[www.independent.co.uk/news/science/stephen-hawking-transcendence-looks-at-the-implications-of-artificial-intelligence-but-are-we-taking-9313474.html](http://www.independent.co.uk/news/science/stephen-hawking-transcendence-looks-at-the-implications-of-artificial-intelligence-but-are-we-taking-9313474.html)

<sup>2</sup>CB Insights.

<sup>3</sup>The 2016 AI Recap: Start-Ups See Record High in Deals and Funding – CBInsights Jan '17.

<sup>4</sup>The 2016 AI Recap: Start-Ups See Record High in Deals and Funding – CBInsights Jan '17.

<sup>5</sup>[www.knightfoundation.org/press/releases/knight-foundation-omidyar-network-and-linkedin-founder-reid-hoffman-create-27-million-fund-to-research-artificial-intelligence-for-the-public-interest](http://www.knightfoundation.org/press/releases/knight-foundation-omidyar-network-and-linkedin-founder-reid-hoffman-create-27-million-fund-to-research-artificial-intelligence-for-the-public-interest)

## Infinite data-driven insights

Thanks to the power of AI technologies being able to learn without being explicitly programmed, this caution is well-founded. But this characteristic also provides financial services firms with smart processing power – thanks to neural networks, big data analytics and evolutionary algorithms – to crunch deeper, more varied datasets than ever before.

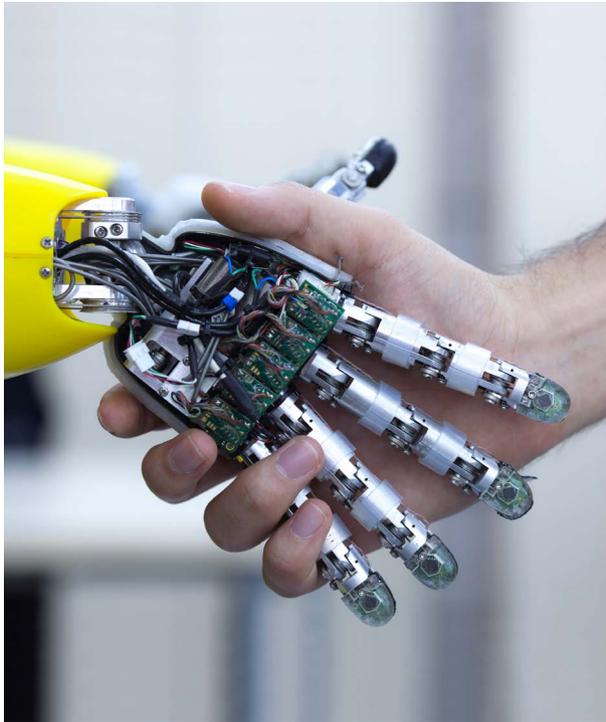
It is perhaps inevitable, therefore, that AI is rapidly being built into a range of processes across the financial services industry – from automated customer support to cyber security, insurance, and predictive analysis, as well as in the creation of automated virtual financial assistants.

## The superhuman effect

AI tools are empowering corporates by learning and monitoring customers' behavioural patterns, identifying signs of fraud, and detecting cyber security breaches in a fraction of the time that it would take humans to perform the same analysis. And in such a high-tech field, it is no surprise that innovation is constant, particularly in the battle to keep pace with fraudsters.

Barac, for instance – a graduate from the London Barclays Accelerator – promises to “detect very early signs of possible attack, predict a threat and react in real-time using an advanced AI”. Its platform analyses and transforms real-time data into actionable business results through the combination of big data, data science and predictive analysis.

It is this ability for AI to take on some of the fraud prevention and cyber security load that is of particular value, as it means analysts are free to spend more time searching for that ‘needle in a haystack’.



Torsten George, Vice President of Marketing and Product Management at US-based RiskSense, explained in a recent article in online magazine Security Week: “Enlisting machine learning to do the heavy lifting in first-line security data assessment enables analysts to focus on more advanced investigations of threats rather than performing tactical data crunching.

**“This meeting of the minds, whereby AI is applied using a human-interactive approach, holds a lot of promise for fighting, detecting, and responding to cyber risks.”<sup>6</sup>**

## Underwriting better performance

Insurance and claims management is another area seeing transformation thanks to the implementation of machine-learning techniques.

AI promises to not only help insurers automate and speed up the handling of claims, but also improve the insurance underwriting process. Automated ‘agents’ are able to determine customer requirements and link multiple datasets, removing the need for additional, and often expensive, tests. As well as transforming operational processes, AI is also having a huge impact on the experience of the end user.

## Automated financial assistants and planners are now helping consumers to make financial decisions.

Applications such as MyAviva – launched by insurer Aviva – store customers’ insurance, savings and investment policies in a central, secure location online. Elsewhere, automated financial assistants and planners are now helping consumers to make financial decisions, including the monitoring of economic events and the observation of stock and bond price trends in relation to goals. Such technology is opening up new opportunities to people who may not have the time or relevant knowledge to keep abreast of relevant developments.

Haragopal Mangipudi, Founder of automated virtual assistant platform finUNO, agrees: “It’s a way of demystifying the world of finance for an average consumer of financial services, like me.”<sup>7</sup>

<sup>6</sup>[www.securityweek.com/role-artificial-intelligence-cyber-security](http://www.securityweek.com/role-artificial-intelligence-cyber-security)

<sup>7</sup>[www.forbes.com/sites/abehal/2015/10/29/financial-intelligent-assistance-is-here-and-its-going-to-be-a-game-changer-for-wealth-management/#313c01751108](http://www.forbes.com/sites/abehal/2015/10/29/financial-intelligent-assistance-is-here-and-its-going-to-be-a-game-changer-for-wealth-management/#313c01751108)

## Looking to the future

Intelligent computing is now not simply about the power to process a dataset and report on what has happened in the past, but to make informed assumptions about the future.

Supermarket giant Tesco discovered this conundrum when it reviewed the use of its customer loyalty card data. It found it was promoting products to customers that they already wanted and bought regularly, rather than upselling products that they might want or only bought occasionally.<sup>8</sup>

The answer, it seemed, lay in predictive analytics, which crunches large volumes of data to find patterns, predict insights and arm companies with insights that can be tailored. And, in the financial services sector, predictive analytics can be utilised in a range of ways, from data mining to calculating credit scores – an important tool used by lenders to assess applicants' eligibility for loans.

## Large-scale roll out

After a period of 'dipping the toe', FinTech experts expect financial services firms to begin rolling out new AI initiatives. Over the next year, the focus is likely to be on machine-learning models in areas such as high-frequency trading, fraud detection and credit scoring, for example.<sup>9</sup> Significant developments are also likely around automated trading platforms such as ART – the algorithmic foreign currency exchange (forex) trading platform developed by Fintech Investment Group (FIG).

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June 2017. BD05696..

Automated decision-making will begin to be trialled in small projects within financial services firms, while closer collaboration between banks and FinTech start-ups will open doors for faster, smarter innovation within AI.

Ian Foley, CEO and founder of business process automation company Vizru, believes the true potential of AI will be reached by the streamlining of multiple technologies by the leading innovators: "By the end of 2017, we will start to see consolidation among many of the new entrant FinTech firms, with their single-purpose products fitting into a couple of broader banking platforms," he concludes.

## Key takeaways

- Artificial intelligence is helping financial services to develop better products and services, which are more focused on customer need and suitability
- It is also helping to improve customer experiences every time they interact with financial service brands
- As cyber criminals continue to embrace AI technology, so must financial services firms
- As technology becomes smarter, so the need to continue investing in managing risk increases.

## About the author



**George Osborne**

Innovation Director, FIG

As Innovation Director for the Financial Institutions team within Global Transaction Banking at Barclays, George is charged with ensuring that the best of Barclays' innovation work is brought to bear for clients and works closely with innovation functions across the bank. He has been a mentor on the Barclays Accelerator programme and is leading on a number of areas in Barclays' positioning for new sectors within FinTech.

George has four years of experience at Barclays and has previously managed banking relationships in the FinTech and Financial Intermediaries teams, where his interest in strategic innovation and disruption was developed.

Prior to joining Barclays, George served as a British Army Officer in various roles, leading soldiers in the UK, Northern Ireland, Germany, Cyprus, Kenya and Iraq.

<sup>8</sup><http://www.predictiveanalyticsworld.com/patimes/artificial-intelligence-key-unlocking-big-data/4065>

<sup>9</sup><http://plugandplaytechcenter.com/2017/04/19/fintech-artificialintelligence-2017/>