

## How banks can ride the artificial intelligence wave

After a chequered history of six decades, artificial intelligence (AI) is not only back in the news, but making headlines for never-seen-before developments—a case in point being Sophia becoming the first robot citizen of Saudi Arabia.

There is a strong technology tailwind to thank for the advances in AI. Computing power is expanding rapidly, even as its cost comes down. Connected devices and the internet of things (IoT) are spewing massive quantities of data for consumption by advanced analytics solutions. Further, the Open Source movement is fuelling AI-led innovation.

Not surprisingly, AI has begun making waves in the financial services industry too. Respondents to the latest Efma and Infosys Finacle “Innovation in Retail Banking” survey believe AI technologies will change their organization within the next one-four years. Banks are also putting their money where their mouth is. Infosys Ltd surveyed 1,600 business and information technology (IT) leaders from 10 vertical segments about their plans for AI adoption, and found that banks and financial services organizations were by far the biggest investors in AI technologies with an average investment of \$14.6 million.

Most of these investment dollars are currently going into cybersecurity, data analytics, open banking and cloud—the key enablers for AI technologies such as machine/deep learning, automation, natural language processing and natural language generation. AI has found wide application in the following areas:

*Smart virtual agents or chatbots:* From answering queries to enabling payments to friends to making useful recommendations, the chatbot is the most popular application of AI in banking. Ally Assist, one of the first chatbots in the industry, helps customers transact, pay bills, deposit or transfer money, and track savings. COIN (Contract Intelligence), JPMorgan Chase & Co.’s bot, analyses complex legal contracts to save hundreds of hours of manual effort. The bank, which also uses bots to perform common IT tasks, plans to deploy them for new revenue sources and risk mitigation. Swedbank AB’s Nina answers 40,000 customer calls every month, and resolves about 80% of queries in the first contact.

*Expert systems:* Expert systems, similar to smart virtual agents in many ways, are primarily used to collect information and recommend actions to users. Expert systems are therefore a natural fit for the wealth management business. Fintech firms such as Wealthfront and Betterment leverage them to advise clients. Like chatbots, which collaborate with human agents, expert systems work alongside relationship managers to deliver a hybrid investment management service that is superior to the people-only option.

*Robotic process automation:* Robotic process automation (RPA) grew 64% last year to become a \$200 million market, and is expected to grow even faster through 2018 as the success of pilot projects leads to full deployment. Aimed at automating rule-based, repeatable tasks, RPA is being used extensively in banks for onboarding customers, accelerating workflows, entering and validating data, and performing reconciliations. At ICICI Bank Ltd, for instance, software bots perform more than a million transactions across 200 business processes each day, and will progressively take over as many as 500 processes.

*Robots:* Robots also feature among the top AI applications in financial institutions. Humanoids Pepper and Nao, installed in two Japanese banks, perform a number of customer service functions to relieve the front office of mundane responsibilities. Some robots also contribute to sales with relevant product recommendations to customers.

*AI-based engines and algorithms:* AI-based engines and algorithms for fraud management analyse transaction patterns in real time, use additional behavioural indicators to spot suspicious activity, and learn from past experiences to reduce false positives and negatives. They can also offer suggestions for mitigating risk. Feedzai, a data science firm, uses algorithms to detect e-commerce fraud, and uncovers up to 60% more cases with fewer false positives.

Banks and financial institutions are moving to a level of automation where a significant proportion of financial advisors will be bots. Relevant and personalized experiences offered by banks today, by way of natural language processing (NLP)-powered investment portfolio recommendations and predictive what-if assessments, are just a ripple inching towards becoming a sweeping wave of AI in banking.

Although today, AI-related tech and apps are at varying stages of maturity, to compete in a future teeming with new technologies and possibilities, banks cannot afford to wait to embark on their AI journey. An early start will not only confer competitive advantage to their organization but also allow self-learning intelligent systems adequate time to learn from available data.

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