

# Artificial intelligence in banks

Touted as the next major disruptor, AI is making inroads across the banking value chain. Although most banks are still in the early stages of AI adoption, immediate applications involve achieving productivity gains and developing proactive compliance/risk management systems. The magnitude of potential benefits, however, remains largely to be tapped...

## AI is driving innovations and can solve the 'data problem' in banks

The banking sector has been a pioneer in the adoption of new technologies and resulting innovations but their **ability to realise the full potential of data has been limited** so far. AI is data-hungry and the banks now generate an extraordinary volume of data. According to the Australian Government Productivity Commission's report, "the amount of digital data generated globally in 2002 (five terabytes) is now generated every two days, with 90% of the world's information generated in just the past two years." An IDC estimate suggests that by 2020, global data volume would grow to 44 trillion gigabytes.

In the last couple of years, global financial institutions have started to use AI to improve customer engagement and product/service personalisation. Despite all the eagerness to reap the benefits of AI, banks are slow to adopt new solutions. According to McKinsey estimates, banks do not realise the value of more than 80% of the total data collected by them.

Also, during the last decade, banks across the globe have gone on strong digitisation drives, which have laid the pillars for AI adoption. **While the foundations are in place**, the banks have been following a watch-learn-act approach, which makes them slow partners to work with startups.

## Banks can unlock opportunities by placing AI on top of the banking data

**Personalisation:** AI can generate customer insights that can be used for personalised communication, advice, offers and services.

**Productivity gains:** Nearly the top 20% of back-office work accounts for 85% of the cost. Labor-intensive work like compliance reporting, new customer on-boarding communications, and documentation can become highly accurate and efficient with AI-powered automation.

**Fraud detection and compliance:** Fraud detection has been the hotspot for AI application in banking. AI's increased potential for real-time sensing and improved ability to spot anomalies make it highly valuable in this regard.

**Customer recommendation:** AI can enable banks to provide quality advice to customers by removing 'human error'. AI-powered personalised finance management tools hold great potential in the market.

## For instance

Despite the nascent stage of AI adoption, its benefits are already being realised at many large banks across the globe. According to TCS research, "banking and FS executives found that investment in AI helped them **reduce production costs by 13%**. Additionally, executives **reported a 17% average revenue increase** in the area of their AI initiatives." At one European bank, the shift from pure statistical regression to machine learning for credit analysis increased mortgage collections by over 30%. JP Morgan's new machine learning based system is estimated to save over 36,000 hours of lawyer and loan officer work every year. In Australia, NAB expects to save up to AUD16 million by 2020 by using AI in customer interaction tools. And similar examples are spread across the globe...

J.P. Morgan Chase and BBVA use ML-based technique for card fraud, and for targeted customer offers

CapOne uses ML-based solution for payment spend analytics and personalised coupons/alerts

Goldman Sachs uses Machine Learning in its "AppBank" to automate corporate system management

DBS is using Natural Language Processing to review customer chat logs to enhance the quality of customer interactions

Santander is using speech recognition to secure app-based transactions

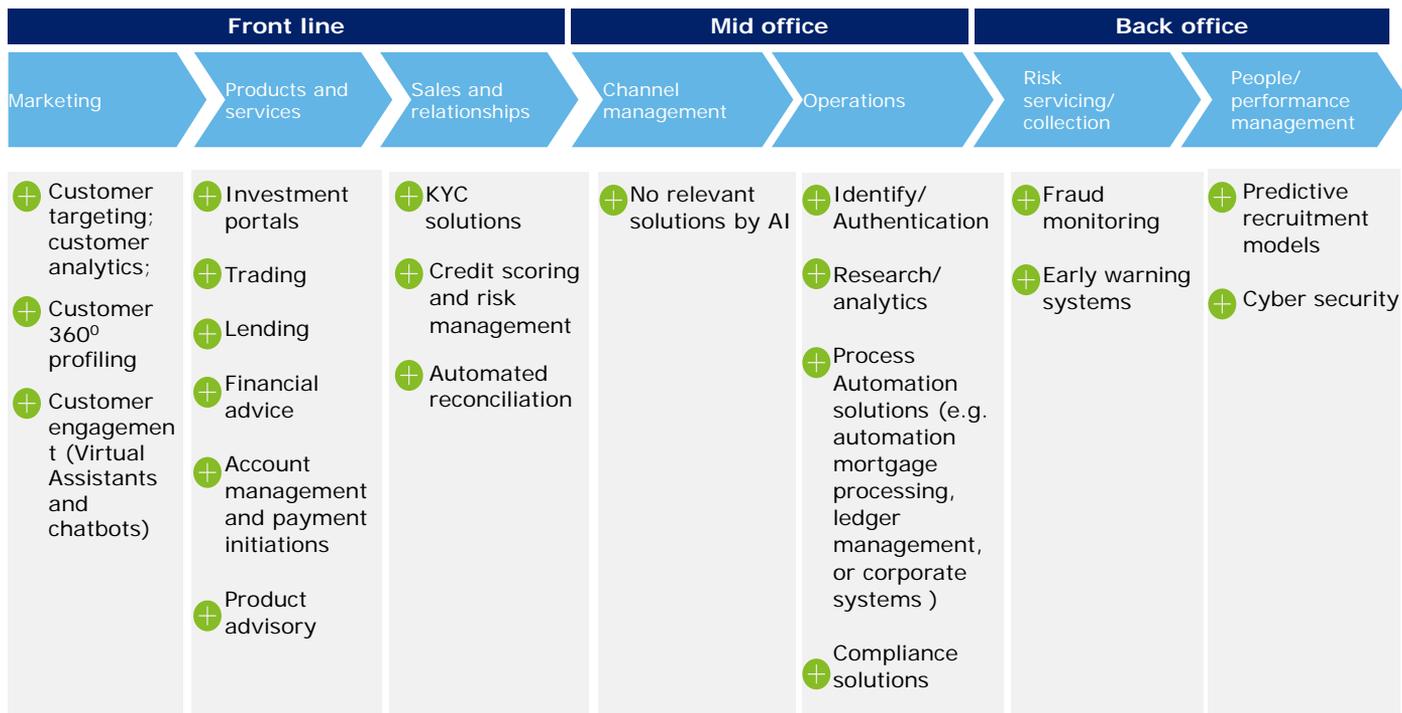
State Street is piloting the use of Natural Language based technique in its custodian tools

HSBC is using AI virtual assistance to help business customers navigate product details

RBS uses chatbot 'Luvo' to help mortgage customers choose the most suitable loan

# AI use cases are spread across the banking value chain

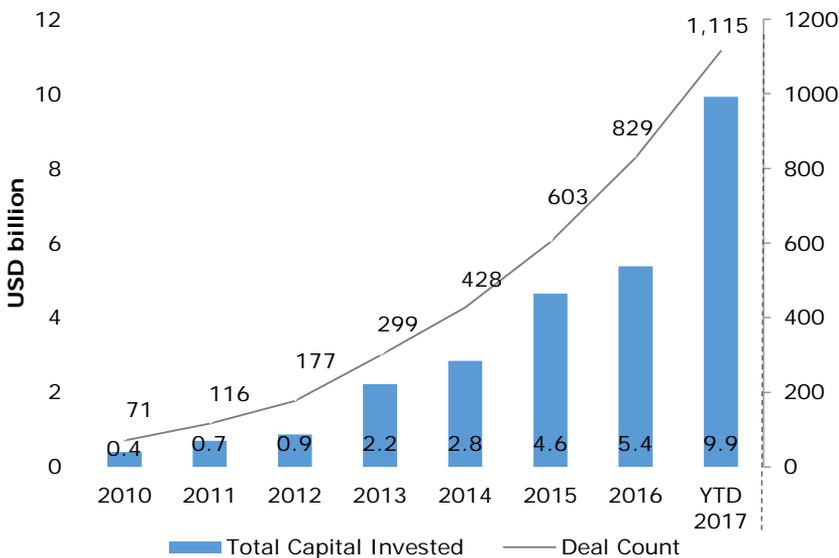
AI integration in the workplace can deliver cost and efficiency results, particularly for customer service and back-office operations in banking. Besides, customised fraud detection, risk management and compliance solutions can transform the scope of efficiency for banks



**Underlying AI Technologies: Real-time analytics; Predictive analytics/Machine learning/ Deep learning; Video/Image analytics; Graph analytics; Natural Language processing; Virtual assistants (VDA)/Bots; RPA**

## VC funds are bullish on potential growth of AI startups

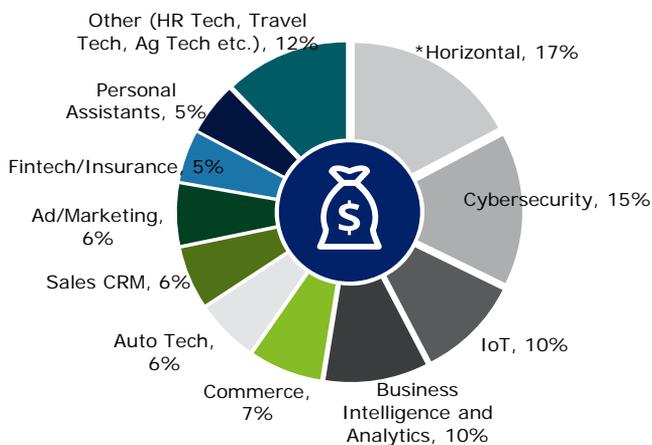
Trend of Global VC funding in AI (USD billion)<sup>1</sup>



AI innovations and increasing commercial adoption have been rewarded by accelerated funding in recent years. VC funding in AI tech has grown up to ten-fold in the last five years; and 2017 looked exceptionally good.

In 2017, the US remained the most attractive region for VC funding in AI. Driven by China, Asia has also emerged as an exciting region. In 2017, Asia managed to surpass Europe by funding volume. Oceania's AI funding peaked in 2016 and the region now presents itself as a potential hotspot. However, in 2017, the region was not able to keep up the momentum.

### CVC deal share into AI subsectors (2012 to H1'17)



Industry-agnostic AI solutions have been a preferred area of investment, followed by cyber security, IoT, and BI solutions. It is interesting to note that three-fourths of every invested dollar is going to a subsector that has strong credentials to serve the financial services industry. According to Q1'17 funding numbers, Fintech and Insurance are emerging as the hottest category of AI, having recorded over 30 deals before close of the quarter. AI in banking is promising and investing in right AI technologies can have a significant impression on banking tools in future. This would not only improve productivity but also deliver an exciting story of customer impact.

Source: Pitchbook, CBI Insights, KX Research Services analysis

Note 1 : funding figures as of 15 Nov 2017; \*Other facial and image recognition startups working across multiple industries