AI use in the financial sector

Tatsuo Tanaka
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Nomura Research Institute, Ltd.

Executive Summary

Tatsuo Tanaka

Senior IT Analyst

Financial IT Retail Business
Planning Department

AI is increasingly being deployed in the financial sector, particularly in areas such as risk assessment, financial market analysis and research and investment portfolio management. Currently used mainly to improve workflows, AI is expected to eventually be utilized in new businesses to be launched by financial institutions as they are compelled to play new roles.

Growing excitement about and investment in AI

AI is garnering growing interest and expectations. According to US research firm CB Insights' AI Annual Global Financing History, venture capital investment in AI grew some 750% over the five years through 2016 (to $5,021mn from $589mn in 2012) while the number of AI-related investee companies increased nearly 370% (to 698 from 150 in 2012). Even major tech companies like Alphabet, Google's holding company, are actively pursuing AI-related acquisitions.

Meanwhile, AI investment is booming in the financial sector also. IDC, a US IT research boutique, reported that financial institutions accounted for one quarter of the roughly $6bn spent on AI in 2016. KPMG is forecasting that AI investment will reach $10bn by 2020, with the financial sector accounting for the largest share of that total.

In light of reports that Goldman Sachs reduced its equity trader headcount from 600 to two by automating trading, it is only natural that mounting expectations are being placed on AI, an automation accelerant.

AI use cases in financial sector

Within the financial sector, areas in which AI is increasingly being deployed include risk assessment (including credit screening), financial market analysis/research and investment/portfolio management.

1. Risk assessment

Vendors offering AI-based risk assessment solutions include AdviceRobo, Creamfinance and OutsideIQ.

OutsideIQ's DDIQ, an AI-based due diligence solution, is already used by three of the top five investment banks. What distinguishes DDIQ from the competition is that it automatically searches not only public but also closed-source data, screens and ranks the information it finds and prepares risk-assessment profiles on individuals and companies. DDIQ takes only a few minutes to generate assessment reports that would take a human a week to prepare.

2. Financial market analysis/research

In the financial market analysis/research space, the best-known AI vendor is Kensho Technologies, which has raised equity from numerous major financial institutions. Many others, including AlphaSense, Lucena Research and Amenity Analytics, have also started to enter the space.

Kensho's Warren is an AI-based chatbot touted as the financial version of Siri, Apple's virtual assistant. Warren can answer natural language queries like, "How would a 10% decline in crude oil prices affect the S&P 500?" It can also instantaneously quantify the impact on a given stock's performance and a given asset's interactions and correlations with other assets.

3. Investment/portfolio management

In the investment and portfolio management space, robo-advisors have had a remarkable rise to prominence. AIs that directly advise clients, however, are virtually nonexistent. Most AI solutions are designed for financial planners who advise clients.

ForwardLane offers services that allow financial planners to seek advice from an AI via a chat interface while talking on the phone with clients. If asked, for example, "What kind of portfolio would you recommend for Client A?" the AI instantaneously presents a recommended portfolio, taking into account Client A's existing portfolio and investment preferences, among other factors. Previously, financial planners would spend up to eight hours preparing portfolio recommendations for a client.

Another ForwardLane feature automatically identifies timely conversation topics from various information sources (e.g., news, analyst reports, companies' earnings reports). When financial planners launch their ForwardLane software in the morning, that day's hot topics are displayed in list format. They can then query a chatbot about any of the topics they want to know about in more detail. They are also informed whether a given topic is more likely to trigger a positive or negative

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market reaction and why.

ForwardLane enables financial planners to use the time they previously spent gathering information and preparing recommendations to engage in more conversation with clients.

AI-driven changes in financial services

As these examples illustrate, financial institutions are now utilizing AI in areas where it improves workflows. In the future, however, AI is expected to be used in new businesses to be launched by financial institutions as they themselves are compelled to play new roles.

Imagine a future in which you wake up and are greeted by a smartphone notification of your daily budget and suggested ways to spend less that day. Having overspent your budget for the previous three straight days, you are warned by your AI advisor that if your reckless spending habit persists, you will have to cancel your year-end family vacation. Meanwhile, your daughter is preparing for a college next year. She hopes to attend a private university and go on to a medical school. Your AI advisor informs you that funding her education will require you to draw down your assets. Having recently started investing as recommended by your AI advisor, you are now feeling confident about retirement. However, you are strongly advised to postpone major expenditures until your daughter has graduated from university. You decide you had better follow this advice.

This scenario is a preview of what financial services may look like in five years. Through AI, financial services will evolve into the role of a personal financial advisor deeply embedded in consumers' day-to-day lives.

Money issues often require complex decisions. If the average human lifespan is extended to 100 years or beyond, forecasting future income and spending will become even more difficult. Regularly consulting with a human advisor will be too costly and time-consuming for the average consumer. Financial services that provide the kind of financial advice that consumers need and want will eventually become a necessity.

AI realizes automation, personalization and real-timeliness. It will enable financial institutions to expand automation beyond predetermined rules-based algorithms into the realm of human cognition to provide their customers with appropriate,

closer-to-real-time information and advice that is more granularly personalized based on not only human data analysis but also massively complex machine-learning computations.

To fully utilize AI, financial institutions must sufficiently understand AI's suitability and implementability from the standpoint of automation, personalization and real-timeliness. These three attributes are the leverage that financial institutions of the future will likely be called upon to create innovative financial services with.

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