

# TRANSFORMATIVE NATURE OF ARTIFICIAL INTELLIGENCE (AI) IN WEALTH MANAGEMENT



**CAPCO**

White Paper





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## Introduction

Artificial intelligence (AI) is the power of a machine to copy intelligent human behaviour. AI technology has made substantial progress over the decades, as evidenced by the continuous increase in the number of vendors of AI solutions. The financial services industry has also begun to see AI vendors with solutions focused on wealth management, a sector that traditionally relies heavily on the relationship of clients with their human advisors.

These AI vendors are appearing at a time when wealth management is undergoing change on a global level. Incumbents and industry newcomers are witnessing the strong shift to digital in retail banking spill over into wealth management.<sup>1</sup> Whether this shift in wealth management will continue to be in the form of customer experience and digital onboarding – or extend to portfolio management and risk – remains to be seen.

We believe that the advisor-client relationship remains the cornerstone of wealth management, and we don't anticipate a gloomy future where person-less organizations make all decisions with machines. However, industry players cannot ignore the AI solutions entering the wealth management market and should consider some of these solutions and how they impact advisors, advice itself and clients.

## Where to Begin?

Automation is already present in wealth management, and this necessitates distinguishing between it and AI. Automation is rule-based, where algorithms help automatize certain elements of wealth management processes. On the other hand, AI enables machines to learn to do certain tasks the way humans can.

The path to efficiency has taken the industry from manual to automated business, through a natural progression of advances in software development. Robo-advisors have entered the market recently and have attracted technology savvy investors. Robo-advisors use automation to assess client risk profiles and allocate and rebalance portfolios. The step to follow automation will minimize, and potentially remove, human intervention in some cases.

AI describes a suite of different technologies, and we will focus on a few in particular: machine learning, natural language and prediction. Machine learning uses algorithms that can learn and make predictions on data. Natural language allows machines to interpret and generate spoken and written language. We are particularly interested in exploring AI's potential impact on two of wealth management's pillars, risk and front office, and its implications for wealth management firms. Because of stringent regulatory pressures mounting since the recent financial crisis, and because front office that has always depended heavily on human interaction and foundational human relationships, we believe that AI technologies could disrupt these two areas of wealth management.

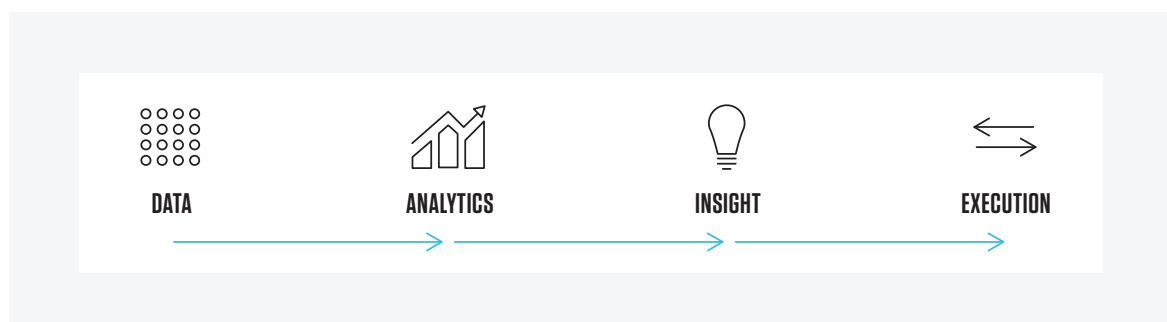


Figure 1. Automation in wealth management

## Two Pillars of Wealth Management Impacted by AI

The traditional wealth management model involves lots of manual work, from analytics to insight and, finally, action. Changing client demands and recent innovations have caused some deviation from the manually focused traditional model in the past few decades: the rise of discount brokerages in the 1990s and, most recently, robo-advisors. These have led to increased automation and substantial impact in terms of how wealth management firms do business. However, these impacts will most likely pale in comparison to the future impacts of AI.

In the past eight years, the industry has seen a whole new level of emphasis on risk, both from a regulatory perspective and a reputational standpoint. As several well-established financial institutions tarnished their image during the 2008 financial crisis, Know Your Client (KYC) and Anti-Money Laundering (AML) have become more important, as reducing reputational damage and risks have become more important. From the front-office perspective, we envision AI enabling changes to the advisor's role. We believe it is imperative for today's wealth managers to start analyzing the implications these changes could have on their operating models.

### RISK

After the financial crisis, increasing regulatory and AML pressures caused banks and wealth management firms to hire many compliance officers. Minimizing risk on all fronts and complying with regulatory initiatives was and remains a priority for every financial institution. The amount of data that firms must collect and process to execute required risk assessments is only getting larger in today's global economy. Technology and big data are enabling increasingly sophisticated techniques for all sorts of fraud. Given increased reputational and monetary risks, organizations will remain under continuous pressure to maintain proper risk measures. Increased scrutiny in risk has penetrated wealth management already, and this is here to stay. Therefore, organizations should become more efficient in identifying and mitigating risks earlier in the process.

Human error and oversight can be detrimental to organizations' success in managing risk and maintaining regulatory compliance. AI could help not only with monitoring the risks, but with mitigating them in earlier stages of risk maturation. Using AI to assess patterns in customer behavior will enable organizations to find customers that display any out-of-the-ordinary, suspicious behavior.

AI technology is taking on a larger role in helping firms stay on top of the highly complex and evolving regulatory landscape.<sup>2</sup> As the number of transactions intensify, tasking humans with the analysis of each transaction greater than \$10,000 becomes onerous. Companies such as NextAngels in the U.S. are creating natural language processing systems to read through the legalese of regulations and reassemble the words into a set of computer-understandable rules.<sup>3</sup> These types of solutions could save time for banks and wealth management companies, and they could also reduce costs, liabilities and minimize risks of fraudulent transactions. Reputational risk has never been more important, and the use of AI could help wealth companies reduce any chances of tarnishing their reputation.

For another example of mitigating risk through AI, consider Ayasdi, which provides detailed stress-testing to financial institutions for Comprehensive Capital Analysis and Review (CCAR). While this regulation covers financial institutions across all their lines of business (LOBs) – not just wealth management – Ayasdi's CCAR stress-testing uses machine learning to rapidly analyze highly complex data sets and uncover relationships that drive more accurate, defensible risk models.<sup>4</sup>

People are electronically sharing more personal information than ever, and wealth management firms must have the tools to protect not only their entities and monetary assets, but also their most important asset: customers and their information. As some of the solutions we mentioned here start to play a bigger role in wealth management, the importance of minimizing risks through proper operational and risk controls will be further amplified by the need to protect customer data.

## FRONT OFFICE

The wealth management firm that uses AI technology to provide portfolio decisions, personalized client dashboards, analysis and tailored performance reports does not seem far away. AI could unlock even more personalized service to clients while giving wealth managers more free time to focus on asset gathering and client prospecting, thereby providing better and more personalized services and deepening the advisor-client relationship. As advisors become more familiar with their clients' personal needs through personalized alerts and important life-changing events, advisors will better understand their clients while focusing on portfolio growth.

Leading global wealth management firms, such as UBS, are already on this path. UBS acquired Sqream, whose specialty is automatic analysis of large amounts of unstructured data to identify typical client patterns. UBS hopes that this analysis will lead to a better servicing of their high net worth clients.<sup>5</sup> In Singapore, DBS partnered with IBM to deploy the Watson platform to provide client-specific portfolio recommendations to DBS financial advisors. One of the firm's top advisors spent the better part of the year training Watson and working through scenarios that allowed Watson to build a rules base and provide a competitive advantage for the firm.<sup>6</sup> On its website, DBS describes the IBM Client Insight powered by Watson as a tool that empowers wealth management firms by dynamically segmenting clients on several parameters, including behavior, while predicting life and financial events. At the same time, the tool predicts client attrition, identifies product opportunities and delivers tailored news and alerts.<sup>7</sup>

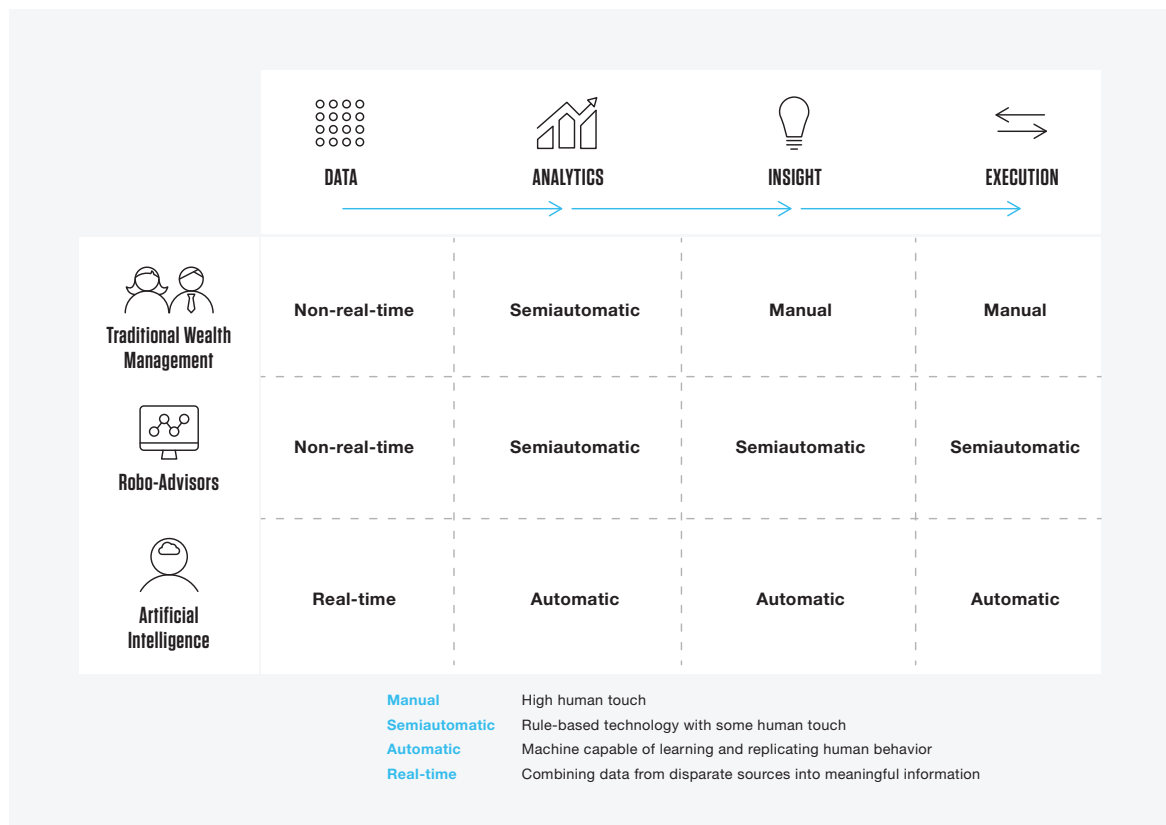


Figure 2. Front-office progression of data, analytics, insight and execution between different models

## “Extreme Automation and Connectivity” – Are We Seeing the First Steps in Wealth Management?

UBS recently wrote a paper on “Extreme Automation and Connectivity” for the World Economic Forum. In this paper, the authors discuss a fourth industrial revolution, one driven by AI and big data. UBS’ paper doesn’t focus only on the impacts to the financial services industry, but it does discuss the wider implementation of AI and the prototypical company of the future.<sup>8</sup> This company will contain a small human capital pool but large economic value in both private and public markets. The revolution itself will have very low physical capital deployment, while coupled by extreme automation and connectivity.<sup>9</sup>

We are curious to see how the wider implementation of AI will impact the human aspect of wealth: relationships and decision-making. We have yet to see AI’s full impact in the front office and how wealth management will look in a future where decision-making is taken over by AI.

## AI’s Place in Wealth Management’s Front Office

As previously noted, wealth management has traditionally depended on advisor-client relationships. As customers’ needs evolved, wealth management companies extended their models to include lower-fee discount brokerages and, recently, robo-advisors. These shifts were partially driven by progresses in technology, evolution of wealth management firms themselves and customers.

In the case of robo-advisors, fintech disruptors found a way to serve the millennial market. While millennials are not the only market segment robo-advisors favor, millennial investors sought lower fees, daily portfolio rebalancing, portfolio transparency and easily understood products described in plain language with minimal industry jargon. With robo-advisors using algorithms to automatize several aspects of wealth management, the question that arises: When will AI-enabled decision-making occur in client portfolios?

Before discussing decision-making, it is important to point out the progress of AI in the wealth industry today. In the U.S., a tech startup called ForwardLane is combining AI with quantitative investing models and financial planning to create a new spin on digital wealth management platforms.<sup>10</sup> ForwardLane’s goal is to provide advisors with in-depth quantitative modelling, real-time responses and highly personalized investment advice. The company seeks to provide individual investors with institutional risk elements. Earlier in 2016, ForwardLane released software that includes an advisor dashboard, compliance functionality, investment management, client conversation and financial intelligence functions using deep learning, a novel area of AI focused on analyzing unstructured data. Essentially, ForwardLane aims to empower the advisor to focus more on client interactions while reducing their operating costs. AI allows ForwardLane to deliver advice based on the incorporation of vast amounts of data to an advisor in real-time. This element lets ForwardLane go a step further: Every time an advisor uses the system, the system remembers what is of highest importance to the advisor and the client.<sup>11</sup> Companies such as ForwardLane are pushing the boundaries in wealth management. While such progression is very exciting, it brings several implications and unknowns.

## Implications

What are the implications for wealth managers, and what does the future prototypical wealth management firm look like? We mentioned several vendors that utilize AI for their products. If the professionals running firms in the wealth management sector understand these products and desire their potential benefits, AI could strongly impact wealth management. As machines continue to learn how to do workflows and at some point in the future turn to decision-making, do today's wealth managers have to think about future implications? Rather than paint a gloomy picture of a person-less firm, we wanted to approach this notion with a holistic view of AI's impact on front offices, advisors, clients and a potential culture shift in wealth management.

### FRONT OFFICE

We envision numerous changes to the front office. Advisors will focus more on asset gathering than ever before – because AI will allow them to do so: AI will run many client-related functions, freeing the advisors to perform more asset gathering and monitor portfolios. The AI future holds sophisticated individual client dashboards that are live, interactive and contain an abundance of information on the client's portfolio. AI will track each of the portfolio segments against its respective benchmark while risk metrics will show the client that their respective portfolio segments sit within the client's desired risk tolerance. AI will send clients their personalized analysis and performance reports in line with appropriate regulatory deadlines and guidelines, or more often if the AI learns from client behavior that a client desires more frequent reports. These reports will utilize one of AI's capabilities, natural language generation, which allows a computer to write reports based on vast structured and unstructured data analysis.<sup>12</sup>

Many existing advisors have general market analyses that are sent to their entire client bases. The advisor of the future will instead offer personalized analysis and reports that contain information relevant to that one client's portfolio. AI will crunch vast amounts of data for each client and produce personalized analysis and performance reports that are personally relevant to the client. However, if AI gets to this point, the pressure on the advisors to gather more assets will intensify. We believe this will shape how wealth management firms are structured: advisor teams will contain a smaller number of successful advisors with more assets per advisor. Leaner advisor teams will provide a personalized service to their clients with the help of AI, while reducing overhead costs. From the portfolio management perspective, by crunching vast amounts of data, AI will send alerts to the advisors to undertake appropriate trading moves to adjust positions and exposures in their clients' portfolios. Keeping portfolio rebalancing active and dynamic will allow advisors to reflect the agreed exposures in each of the client's investment policy statements.

### ADVICE

As clients become more comfortable with machines playing a larger role in managing their assets and if AI takes a more impactful role in wealth management, we will see an impact to low- and high-touch advice. Machines providing more data and analytics to clients in real-time can amplify low-touch advice, providing more relevant and tailored data points to clients to make investment decisions. From a high-touch perspective, advisors will be able to become even more responsive to their client needs, using AI as a tool to provide more valuable advice. Data from the analysis would put advisors a step ahead in predicting client needs. Essentially, the advisor would become even more proactive cross-selling solutions, augmenting client portfolios and providing further value in maintaining the client relationship.



## CLIENTS

The advisor-client relationship will remain the foundation in the wealth management industry of the future. We do, however, envision a decrease in the frequency of touch points between advisors and clients. While robo-advisors are already impacting the nature of the advisor-client relationship today, with AI taking more of the front office functions, we see this change becoming more profound.

Clients must also become more comfortable with the idea of AI taking a significant role in the front office and the impact this has on how the advisor dedicates time to meet client needs. This means that firms and their advisors must educate the clients on the benefits of AI's role in wealth management. We also foresee clients' personal data playing a more integral part in wealth manager's AI-driven decision-making. While this personal data is not used by wealth managers today, institutions could create portals for collecting personal data, should clients be open to sharing their personal data with financial institutions. This brings risks for the firms as well: Firms must be on extreme guard protecting their clients' data. As AI models become more refined, they will utilize personal data along with financial data to make better decisions.

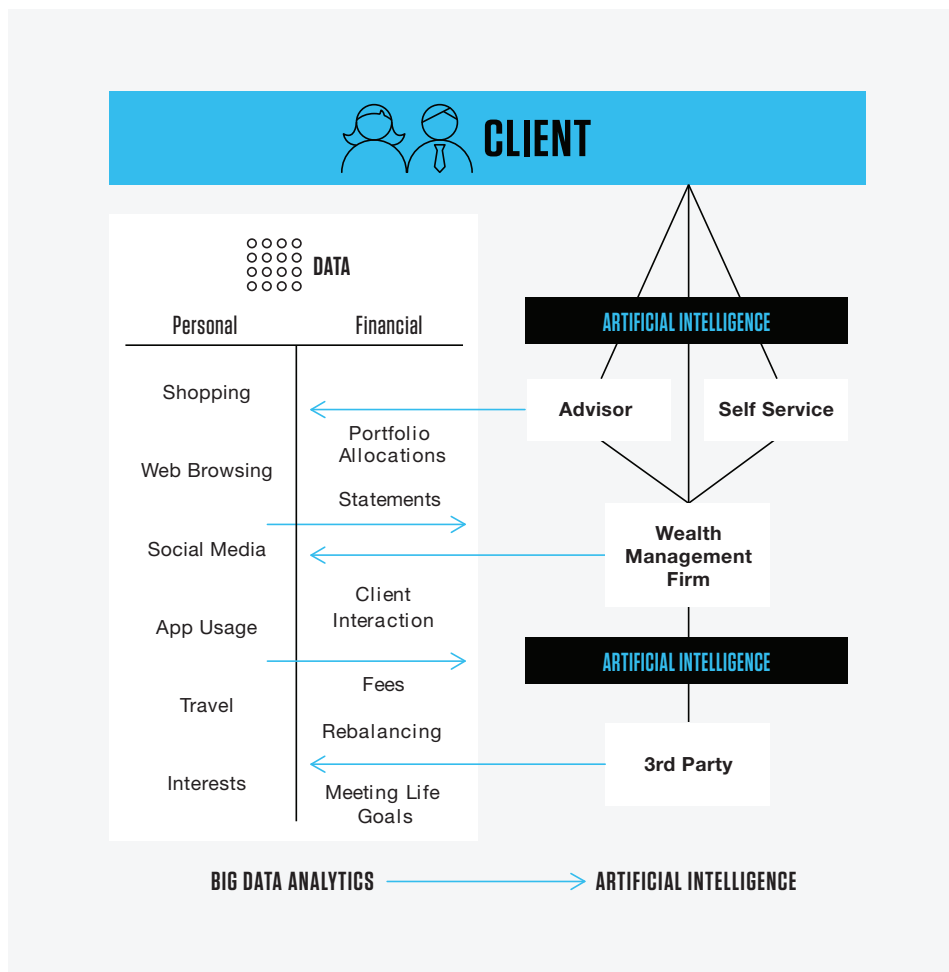


Figure 3. AI will learn based on client's financial information and permissible personal client data

## Why should you care?

Embracing the Change by Building a Diverse Team, Partnering with AI Experts and Managing a Culture Shift

Discussing the impact of any big change and its implications requires that we consider what the impacted parties need to do to prepare themselves for the change. Acknowledging that AI will have an impact is important, and firms' leadership teams and advisors should be familiar with the AI solutions in the market. To achieve this, firms can run workshops and information sessions and invest in educating their personnel.

Partnering with firms that understand AI technology and how AI can integrate with existing systems is crucial. Integration of AI will produce new target operating models that will impact people, processes and technology. Wealth firms should invest in partnering with experts to minimize disruption to their daily business, employees and clients. Building the knowledge base internally will allow wealth managers to be a step ahead of the competition.

Culture shifts in a traditional business such as wealth management will be a challenge. Firms should anticipate potential resentment towards change, especially when technology impacts roles and responsibilities of employees. If a firm reaches a stage where it plans on using AI, company leadership should start planning the message and organizational design of their future target state.

## Conclusion

In our 2016 paper "Wealth Management – Canadian Trends and Evolution", we discussed the need for wealth managers to embrace the trends that are impacting and shaping the Canadian wealth management industry, specifically. We reiterate a similar notion to conclude this paper. From the risk perspective, data analysis is becoming more demanding as financial markets are becoming more complex and as protecting a firm's reputation increases in importance. From the perspective of the front office, AI solutions will enable more personalized advice and service based on individual client needs. Prudent decision-makers should take the following steps:

1. Actively identify areas of AI applicability in their respective organizations.
2. By doing the first step, organizations will understand what internal capabilities they should develop.
3. Organizations should utilize existing capabilities and digitization programs to enhance and improve customer service and risk mitigation.

Firms will be challenged to implement new technology in their existing business, as well as by the costs and time needed to invest in these initiatives. Wealth managers should consider what level of competitive advantage they want to achieve in the future. Success will depend on the current organization's flexibility to adapt to a changing and more progressive environment. Uniting strong human capital with AI will be a winning combination.

Today, it is too early to measure and state what would be the cost-benefit analysis of a wider implementation of AI in wealth management. While AI technologies have progressed, AI solutions are not yet used on a large enough scale for trend and effectiveness analyses in percentage and currency terms. It remains to be seen which wealth managers will embrace the profound change that is around the corner.

## FOOTNOTES

1. "The New Wave of Artificial Intelligence" EVERY Labs
2. Retrieved from <http://blogs.wsj.com/riskandcompliance/2016/05/19/financial-firms-turn-to-artificial-intelligence-to-handle-compliance-overload/>
3. ibid
4. Retrieved from <https://www.ayasdi.com/industries/financial-services/ccar-stress-test/>
5. "The New Wave of Artificial Intelligence" EVERY Labs
6. AITE Research Paper: "Top 10 Trends in Wealth Management, 2015: A Digital Engagement"
7. Retrieved from <http://www.ibm.com/analytics/us/en/industry/wealth-management/>
8. "Extreme automation and connectivity: The global, regional, and investment implications of the Fourth Industrial Revolution", UBS White Paper for the World Economic Forum, January 2016
9. ibid
10. Robbins, Christopher (2016, June 22). Will AI Kill The Robo-Advisor? Financial Advisor retrieved from <http://www.fa-mag.com/news/will-ai-kill-the-robotadvisor-27624.html?print>
11. ibid
12. "Artificial Intelligence for the Buy Side", Celent, June 2016



## AUTHORS

**Dejan Knezevic** [dejan.knezevic@capco.com](mailto:dejan.knezevic@capco.com)  
**Gary Teelucksingh** [gary.teelucksingh@capco.com](mailto:gary.teelucksingh@capco.com)

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