Wealth Management in Times of Robo: Towards Hybrid Human-Machine Interactions

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Abstract: Breakthrough technological developments are grounded to disruptive business models that are leading foundational changes within the financial services industry. In this frame of reference, wealth management is experiencing transformational forces reaching the fundamental core function of the business, redefining existing narratives and practices. Advisory services in management wealth are deeply embedded within a human-to-human interaction and robo-advising is going to augment the existing value chain leading to the creation of a hybrid advisory model for complex investment portfolios. Therefore, the fundamental question is not about ‘either or’ but ‘together for’ …

Introduction

With a pace of change in the world accelerating around us, technology has ramped up competition, posing the asset and wealth management industries towards ‘disruptive’ advancement, via the emergence of innovative technology-enabled business models, constantly forcing legacy financial institutions to clarify their strategies, develop new capabilities and transform their cultures. These tools are supporting active trading, e.g. screeners, tech chart analysis, opportunities for frequency trading and research based advice. If the client is correctly mapped in a risk suitability model, an automated advice could be generated.

FinTech as “a new financial industry that applies technology to improve financial activities” (Schueffel, 2016, p.45) is built upon distributed models in terms of bringing technology closer and allowing the development of new services, encouraging customer value and centricity. FinTech brings an entire different logic that is causing fundamental changes in the structure and purpose of business, changes that the majority of incumbents are still not ready to face. In this
frame of reference, the impact of FinTech is primarily seen in finding new ways of meeting changing customer needs with new offerings by understanding customers’ behavior and expectations, and therefore incumbents are looking for new ways to partner for innovation.

This book chapter aims at shedding light on the role of robo-advisors (being one aspect of FinTech) as an emerging service innovation element within the wealth management industry. The authors argue that the industry is currently experiencing transformational changes with regards to client interaction and customer onboarding, along with, a cultural shift in relationship-management practices. Advisory services are embedded within a human-to-human interaction and robo-advising will augment the existing value chain but not replace the human component. Therefore, the fundamental question is not about either or but together for …

**Wealth Management and Technology**

Revolutionary developments in technology are creating a transformational shift in the way the marketplace for investment products and services is currently functioning, incrementally changing the business of investing and managing of wealth, generating a ‘purely’ technological investing experience. The primary innovation lies within the introduction of a ‘disintermediation’ scenario that aims at developing an alternative wealth management business model characterized by automation. Individual investors have the ability to proceed with ‘do-it-by-yourself’ investing actions directly without the advice/presence of an investment advisor, broker or other intermediary financial services institution, by means of pre-programmed models and parameters used as the basis for digital service or robo-advisor wealth management service model (Crager and Hummel, 2016). Moreover, this emerging advisory marketplace, which is heavily capitalizing on numerous opportunities that technological growth is generating, aims at offering ‘personal financial management to the vast majority of the population that fall below the net worth threshold required by many banking and brokerage institutions providing human-driven wealth management services’ (Gold and Kursh, 2017, p.140).

**The emergence of robo-advisors**

Technology is positioned in the heart of these cataclysmic changes leading to the emergence of new propositions and innovative streams of offerings that the wealth management industry cannot ignore anymore. One of these fundamental changes is related to the looming form of algorithmic advisors or robo-advisors; an innovative combination of discretionary decision-making and artificial intelligence nested within these technological breakthroughs, behind and even beyond human intelligence, aiming at generating alpha by eliminating irrational decisions
via automated index-investing strategies excluding human psychology and emotional vulnerability (Tertilt and Scholz, 2017). Baker and Dellaert (2017, p.1) suggest that a robo-advisor refers to ‘any automated service that ranks, or matches consumers, to financial products on a personalized basis, sometimes in addition to providing related services, such as educating consumers and selling products to them’. Robo-advisors usually display the following key elements: a) provision of full digital access, b) performance of automated portfolio rebalancing, c) adoption of indexation or passive management and d) personalization aligned to customers’ goals and behavior (Sironi, 2016). The pendulum of transformation of service delivery within the wealth management industry is ticking under an unprecedented pace and the rising powers of non-human decision-making ‘anatomies’ are not considered as a science fiction anymore¹.

Human advisors are required to consider a person’s investment objectives, financial situation and particular needs in the process of providing recommendations for investment products. Robo-advisor mechanisms are based on a ‘controlled rationality’ investment logic that allows the performance of a finite number of algorithmic calculations and asset allocation models based on proprietary historical data (vast quantities of big data) and means-variance optimization in order to define the optimum solution tailored to each individual investor’s needs under certain conditions, specific circumstances and within a definite point in time². In simple terms, robo-advisors function within a ‘limitations-of-algorithm’ framework that is based on the information the individual investor provides. The determination of what is best, flawless or ‘gilt-edge’ is determined by the execution of automated rationalized and analytical processes towards impartial and ‘logical’ outcomes. However, this raises a number of questions particularly around assumptions that can be deemed as incorrect or inapplicable to the financial situation of an individual investor based on superficial information or lack of psychometrics (Tertilt and Scholz, 2017), that could potentially lead to a ‘mismatch between a robo-advisor’s recommendations and the clients’ actual financial planning horizon’ (Huxley and Kim, 2016, p.2) or even ‘canned’ asset allocation offerings and investment recommendations (Fein, 2015).

Trust, long-term and predictive analytics are the key inherent elements of advisory services in managing wealth. An advisor aims at building a long-lasting, continuous and trustworthy relationship with existing but also new customers by anticipating and envisioning change in a pro-active rather than a reactive manner, especially in times of volatility. Robo-advisors are

¹ Tammas-Hastings (2017) believes that the term ‘semi-automated digital guiders’ is more accurate.
² Huxley and Kim (2016, p.10) argue that ‘the mapping of client’s responses to robo-advisor portfolios appears to be very shortsighted with respect to the timing of when clients plan to spend their money’. 
able to monitor personal needs and market conditions, while providing automated advice for portfolio rebalancing. Human advisory is based on emotional intelligence fostering rigorous decision-making with impact.

The human advisor synthesizes controlled and uncontrolled rationality, along with, controlled and uncontrolled irrationality principles, also known as, ‘gut feeling’. The human nature is a complex collage of behavioral norms, individual peculiarities and capabilities that interact with the internal and the external environment, simultaneously. The human principles within the advisory process depend on the various psychological and socio-cultural contexts, therefore, impartiality is not always guaranteed. On the other hand, impartiality is one of the most fundamental elements within the ‘machinized’ advisory paradigm, where datasets and historical testimonies aim at creating new ways of advisory delivery for solid and unprejudiced decision-making.

Robo-advisory is bringing new elements of innovation within the wealth management value chain by providing augmented offerings, which either collaborate with the existing business functions or even tend towards eliminating the human component from the equation by using automated and artificial patterns for generating ‘dehumanized’ content or even non-human decision-making standards. This model is constantly exploring direct causal and relational archetypes for neutral, unbiased and objective predictabilities beyond human irrationality.

One fundamental element behind the emergence of robo-advisors is the ‘technological neutrality’ principle. This level refers to the following questions: ‘who is responsible for what’? and ‘who has reputational incentives for what?’. This element has created numerous discussions around the need for revisiting and revising investment advice regulations. Singapore³, Hong Kong⁴, United States⁵ and United Kingdom⁶ have recently issued a number of consultation papers towards that direction.

**Balancing human and machine**

The emergence of robo-advisors leads to a crucial question revolving around the balance between the human and the machine components in the advisory and the decision-making process in wealth management. The authors believe that there is a need for wealth managers to

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³ Monetary of Authority, Provision of Digital Advisory Services Consultation Paper (June, 2017).
choose the right mix of automated analysis and human intervention in order to get better decisions within the investment decision-making chain. Moreover, the authors argue that the computer-led investment advisory model despite the fact that it growing\textsuperscript{7}, will always embed the human component.

The evolution of this model will be a hybrid co-existence between the human and the machine spheres. The ‘robo’ element will help augmenting the existing wealth management value chain by complementing rather than displacing the human advisory function. Wealth management is all about building a personal advisory relationship providing personalized investment guidance to individual investors. Artificial intelligence is not able to provide ‘advisory’ services because advisory means ability to connect, ability to interpret data and ability to adopt abductive reasoning to help the investor reach out to a decision. The semi-automated digital guiders can bring innovation to the service provision but are not able to advice and connect to the investor in an emotional intelligence manner, taking also into account the social, cultural and psychological and political contexts.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig1.png}
\caption{Hybrid co-existence (developed by the authors)}
\end{figure}

The authors do not fully agree with Bussmann (2017) who believes that the emphasis is shifting towards relationship management while leaving the machine to provide the advice by implementing sophisticated investment strategies. Machines will be able to execute numerous sophisticated calculations by synthesizing enormous amount of data and parameters but the human advisor will still be holding the key of unlocking the decision-making process by helping the investor reach the final decision. Therefore, robo-advisors cannot generate decisions for the

\textsuperscript{7} There are many reasons behind this growth incl. social and political factors, along with, an increased regulatory focus on incumbent wealth management institutions, however, the exploration of these reasons go beyond the scope of this paper.
investor; rather assist the human financial investor towards guiding the investor in order reach the decision.

**What is next for this hybrid co-existence?**

The technological developments within the wealth management industry are undoubtedly bringing anticipated changes in investing behavior. Moreover, immense boost of productivity within the sector is expected from the introduction of robo-advisers.

The traditional discretionary mandate is based on an individual profile and implements the chosen asset allocation with a constructed portfolio. Changes in markets lead to re-assessment and re-balancing. This category is already quite automated in todays banks. Nonetheless, better tools in the robo-advice space will support better and swifter implementation of a more customised investment profile. These mandates are traditionally for clients with bankable assets greater that USD 1m. Robo-advice is expected to significantly drop this level. Robo-Advisors will help to push these limits significantly, upwards furthermore smaller customers (from the affluent segment, around USD500k) will benefit from the increased productivity. Theoretically, if fully equipped with the right robo-advice tools, relationship managers are equipped with the technology of a small bank, i.e. semi-actively managed asset pools of USD 2bn per relationship manager could become realistic. The combination of collaborative approaches, where the financial intermediary has access to customer driven inputs (from robo-advice usage) and behavioural data could help to further increase the quality of a current, accurate investment and risk appetite profile of a customer.

The combinative forces of human and machine principles create numerous opportunities, while at the same time raise many challenges. The hybrid model of advisory in managing wealth will lead towards a redefinition of what the true value means both for the advisor and the investor, along with, the fact that it will enhance and extend human performance. In particular, the authors see two major changes in this emerging landscape:

1. **Redefinition of wealth management**

The authors believe that the traditional ‘business as usual’ practices in wealth management will experience a transformational shift since there will be open to a diversity set of investment opportunities. The principles of desirability, feasibility and viability of the provided advisory services are crafted within the sphere of ‘acceptance’. The investment decision-making process will now be reflected within a spectrum of algorithms, rationality, irrationality, ethical decision-
making and behavioral management elements. In principle, the wealth management culture is bound to become more inclusive and more democratized providing a wider range of advises to different customers at different fees. The main challenge hereby is the quality of the advice provided, the trustworthiness of the institution and how the generated advice captures all the necessary elements of human and machine intelligence in order to foster approval, popularity and status. The introduction of ‘robo’ in the advisory process creates different levels of human and computational capabilities that need to be properly orchestrated in order to support and influence the decision of the investor based on the individual distinctive peculiarities, characteristics and circumstances.

2. Changes in the profile of the advisor and investor

This transformational shift will be creating a new cohort of advisors and investors. There is a need for focusing on cultivating soft skills in order to facilitate client relationships and communications, along with, putting together the right training and talent acquisition and retention mechanisms to support human advisors in the integration process with the artificial intelligence elements. Moreover, the investors are expected to become more educated by demonstrating the right skills, expertise and ethical focus in order to build a sustainable investing ecosystem supported by the combinative co-existence of human and artificial intelligence principles that will have a dynamic effect on the investor’s decision-making process.

Concluding Remarks

The complexity in financial advice is becoming more and more sophisticated, leading to groundbreaking changes in traditional finance. Investor decision-making can be affected by human emotions, cognitive or idiosyncratic biases; elements that are going to be limited by the use of robo-advisors. However, complexity can be both intensive and extensive, therefore the combinative forces of robo and human advisory need to be mobilized in order to provide desirable, feasible and viable advice on these complex investment portfolios. Lots of questions still remain unanswered, however the age of discovery within the hybrid wealth management advisory has already begun.
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Author’s short bios

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