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ROBO-ADVICE

Do you get what you pay for?

Jeroen van Oerle and Patrick Lemmens

Introduction

Robo-advice is a hotly debated topic in the fintech space. On the one hand it has opened up the low-wealth market, that was previously unservable, to finally be consulted on their finances, at lower costs and increased transparency. On the other hand, the models used by robo-advisers are often a dressed down version of full advice, only consider a limited number of asset classes and, potentially, fail in risk categorization. This raises the question: do you get what you pay for?

Executive summary

Robo-advice has become a catch-all term for digital progress in wealth management. Although the current offering is far from a sophisticated platform, it has opened up possibilities, which should evolve into robo-advice 10.1. This is not the time for complacency and serious investments by incumbents are required for them to remain relevant.

Infancy does not justify complacency

Current robo-advice platforms are not very sophisticated and have difficulties to be economically viable on a stand-alone basis. However, it would not be wise to consider robo-advice a hype that will have no impact on wealth management. We believe current robo-advice solutions will evolve into robo-advice 10.1, which will be much more complete in terms of customer profiling and asset allocation.

Important drivers of robo-advice demand are the shift in social-security schemes, especially the change from defined benefit to defined contribution pensions, the availability of technology that makes the advice process cheaper, and also a more general regulatory push. In many countries there is an advice gap, which implies that people who should be advised on their finances in order to pre-

pare for the future are currently being left out because their wealth level is insufficient. The introduction of technology allows a larger part of the un-served to be reached and this is actively stimulated by several regulators. However, reaching many people with cheap solutions might come at a price. We argue that in current offerings, people are not receiving the level of advice that they should be receiving. Besides that, there is too much focus on pricing. This is too one-dimensional we argue, as it is more important to present customers with a complete view and proper advice, taking into account many different aspects of the financial planning value-chain, than to be the cheapest.

Potential market size is large

We argue that the potential market size for robo 10.1 is around USD 30 trillion in assets under management (AUM) by 2025. This compares with estimates by the market of between USD 5 and 10 trillion today versus current AUM of USD 100 billion. We argue two important considerations are lacking from current estimates. The first one is that robo-advice offerings as we see them today add little value to the top of the wealth pyramid and are, therefore, not used by this customer group. We think that robo 10.1 will be able to add value to a much larger part of the wealth-pyramid, which adds considerably in terms of total addressable market.

Besides our view that robo-advice will become more sophisticated and attract a larger customer group, we also believe the robo-solutions will be used more often in a B2B setting. We see potential for automated advice to be used as an input source for traditional advice. The combination of man and machine was dubbed cyborg-advice in our previous whitepaper. Once the proliferation of technology progresses from a B2C setting into a B2B offering, the addressable market will grow with it.

Stand-alone advisers will have a hard time

There are several scenarios for the maturity of robo-advice. We believe the scenario of stand-alone growth is least likely. We think a lot of platforms will merge with financial institutions that own the customer database, given acquisition costs are a make-or-break input in many models. We see several existing companies such as Schwab, Vanguard and Fidelity integrating robo-solutions into their current offering. We expect technology providers and the tech-savvy asset and wealth managers to come out as long-term winners, whereas those that are still complacent about all technological changes in their industry are challenged.

Robo-advice introduced

Key elements of the robo-advice definition are the high level of automation, low operating costs which allows the mass market to be served and a transparent, customer-centric, omni-channel communication strategy.

In our whitepaper about the future of asset management, we discussed the introduction of technology in asset management. A key

conclusion in that paper was our observation that incumbents need to develop a clear technology strategy and invest accordingly in order to remain relevant in tomorrow's investment landscape. Building upon those insights, we will discuss how we foresee the future of wealth management playing out. Robo-advice as we currently know it, is but the tip of an iceberg in terms of automation and data-usage. We will walk through the financial advice value chain of future robo-advice (version 10.1) and discuss the changes we expect per node. Robo-advice has opened Pandora's Box, but is far from having reached its final form.

Robo 1.0 only scratches the surface of the advice value chain

Current robo-advice solutions are not operating in all parts of the advice value chain, neither are they offering an in-depth solution in those activities they do engage in. Tax-loss harvesting and analysis with a regular review of the customer profile is a rarity amongst robo-advisers. Well architected governance and supervision structures are also often lacking. On-boarding, customer profiling and asset allocation are in many cases too simplistic, which raises questions on suitability, the risk return trade-off and opportunity costs. This led us to question whether you get what you pay for? (in terms of the value of the advice) or you get what you pay for! (i.e. cheap advice for a cheap price).

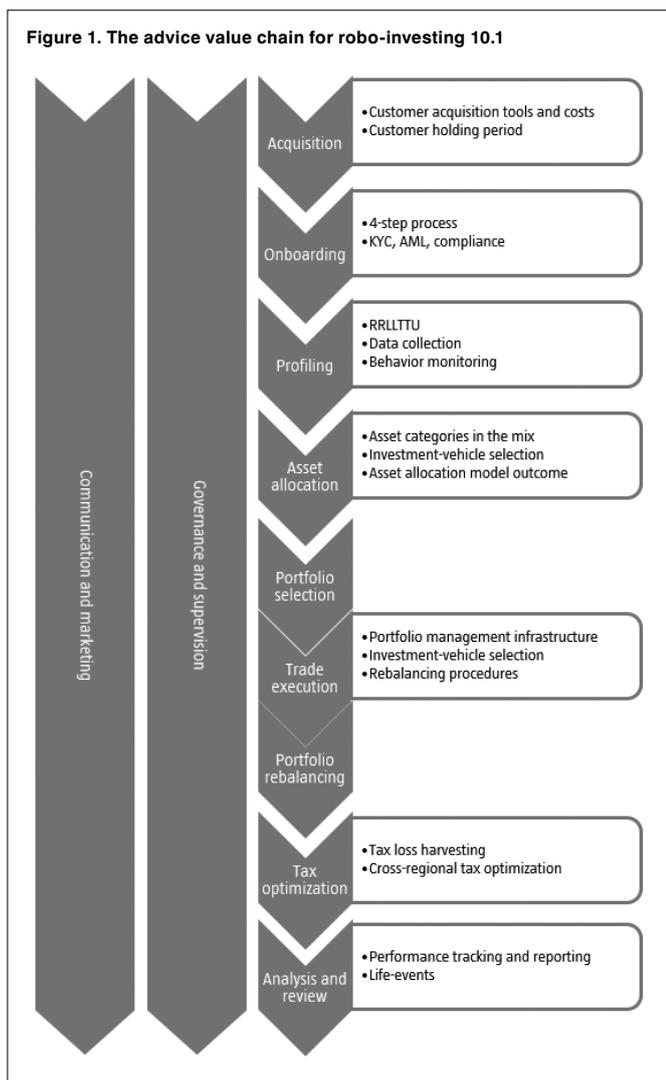
Although there is a lot of room for improvement, the introduction of robo-advice has opened the eyes of the asset/wealth management industry. Closing the financial advice gap is essential for a healthy financial climate in a society where the government is taking a less active role. People have to take care of their own financial well-being and decisions, which entail a wider variety of assets and consequently are becoming more complex. By deepening the offering and integrating the full spectrum of advice as we lay out in figure 1, we believe the insights of robo 1.0 have the potential to lead to the required and desired 10.1 version. Besides the technical tools for the actual execution of financial decision making, education also plays an important role. Better financial education is a necessity, given current knowledge levels.

Acquisition

The starting point of the investment advice value chain is customer acquisition. There are about 125 robo-advisers domiciled in the US, 100 in Europe and 10 in Asia at the time of writing. The number of robo-solutions keeps on growing. Next to the robo-offering, traditional financial advisers and wealth managers are also active in the market. In order to attract customers in this competitive environment, it is important to have a good customer acquisition strategy, but that comes at a price. Morningstar estimates the acquisition costs range between USD 500 and USD 1,000, depending on the region (US acquisition costs tend to be higher than those in the UK and Europe).

Given the low fees charged by robo-advisers (averaging 60bp of AUM) and the short average holding period of customers, it is very hard to break even on this cost basis. It is estimated that the average break-even period per customer is between five and ten years, while the average holding period is between 2.5 (UK) and 3.3 (US) years. Given these high costs for customer acquisition, it is not likely that many of the new entrants will break even on a stand-alone basis. Customer acquisition costs are a crucial element in the calculations. On

Figure 1. The advice value chain for robo-investing 10.1



average, the spread between fee and operating costs is about 25bp. Given the average UK pension pot of 30,000 pounds (USD 75,000 in the US), the gross profit per account would currently amount to approximately 75 pounds (USD 187.5). Acquisition costs determine whether or not an account will be profitable, but there is not much room to maneuver. This is the most prominent reason why most robo-advisers are seeking cooperation with large incumbents; bringing down customer acquisition costs by using an existing customer base.

We expect the usage of artificial intelligence, combined with big data sources, to increase the success rate of engagement. Instead of cold-calling, robo-advice 10.1 will contact customers when the need is highest, based on an analysis of their activities. This will, however, predominantly be done in cooperation with large wealth managers which migrate their own customer base to robo 10.1, in our view.

On-boarding process

After the customer has been acquired, he or she needs to be on-boarded. In the current robo-offering this entails the mandatory 'know-your-customer' (KYC) and 'anti-money-laundering' (AML) tests as well as checking internal compliance boxes. This is a costly approach and it can take a substantial period of time before certain customers are allowed on the platform. Especially international robo-advisers will come across high costs, as cross-border validation of customers is more expensive.

We expect on-boarding costs for start-ups to come down substantially over the coming years thanks to changes in regulation (PSD2 in Europe, Open Banking Standard in the UK) and technology (distributed ledger technology). Specialized KYC/AML services are also appearing. On the other hand, increased regulation will add costs to those with prime customer relations because the costs made do not necessarily result in increased sales. This holds especially for mid-sized institutions. We believe the current on-boarding processes at many robo-advisers is too simplistic, or non-existent at all. We think robo 10.1 will include a 4-step process for customer on-boarding, as shown in figure 2. We will explain these four steps below.

Four steps to complete the on-boarding process

Although a couple of business models may seem to be crossing each other in figure 2 and the choices may seem mutually exclusive, we believe they are not. It is possible to address the four steps (and perhaps even more) in order to fully customize customer desires and still integrate everything into one solution:

- 1 The choice of asset advice is linked to the data that is offered to the platform. If the customer offers all data on all assets and seeks advice on all, it should be combined and fully integrated instead of only looking at a stand-alone asset advice as is currently the case. Most platforms focus on pensions and some offer savings advice. However, financial planning is about the interconnectedness of all parts of the financial picture for the customer, not stand-alone choices. Changes in regulation will make it easier to aggregate data, as will new technologies such as big data analytics, artificial intelligence overlays and distributed ledger technology infrastructure. We think it will become easier to provide an overview of all assets, and develop advice on the basis of this.
- 2 Besides choosing what assets to advise on, it must also be decided how the advice will lead to the management of those assets later on in the value chain. Does the customer seek advice only, or also

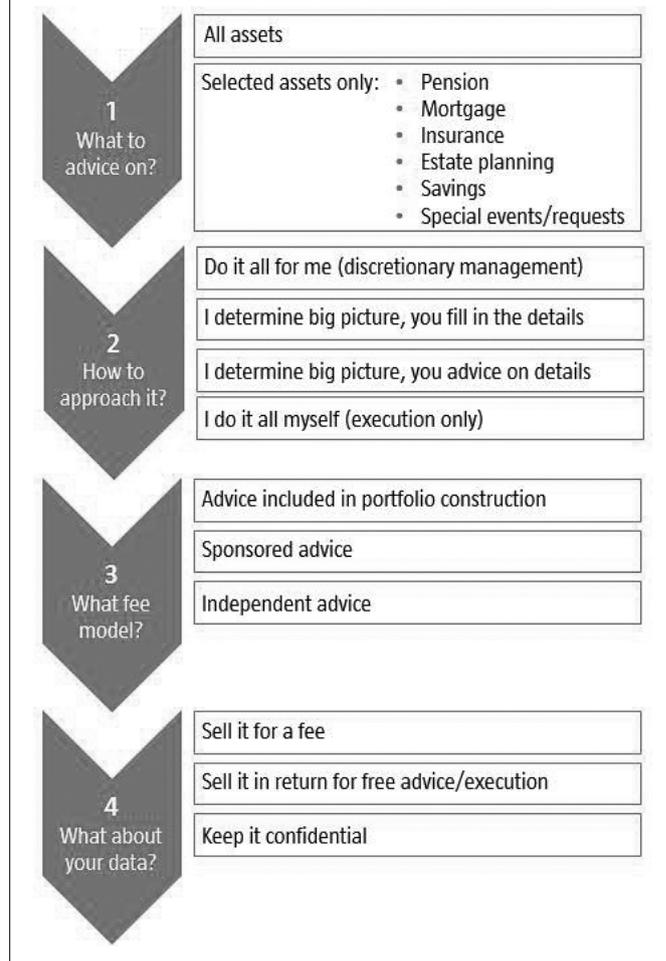
portfolio management? In many cases, the profit model depends on asset management. Many stand-alone advice models are disappearing as a result of changes in regulation that have inflated advice costs by separating advice from products. We expect discretionary management to become the default in robo-advice 10.1.

- 3 Another important consideration is the fee model. The customer can either pay a flat fee and receive independent advice in return, or he/she can decide not to pay for advice and accept the fact that the advice fee is captured in a different way (such as under portfolio management fees like Schwab and Vanguard are doing) or that he or she is only advised on products that have a sponsor relationship with the platform.

- 4 Finally, it is important to decide on the data usage. Some customers do not mind their data being used in order to receive better advice, others even want to go as far as selling their data for a fee, while certain clients do not want any of their data to be shared.

Again, although it seems this requires multiple business models, we believe it can be integrated into one offering. We believe platforms will emerge that combine these steps and offerings and work like an app-store. They offer the main products and services, but enhance their offering with specialist products and services that can be lev-

Figure 2. Relevant questions for robo-advice 10.1





The quote

The potential market size for robo 10.1 is around USD 30 trillion in assets under management (AUM) by 2025.

eraged from external suppliers. Depending on customer demand those services and products are then combined in the fully tailored, custom-made advice.

Profiling

Customer profiling is crucial. If a customer gets the wrong investment profile, there are not only financial consequences but also legal consequences. The current customer profiling methodology of many robo-advisers is questionable. By asking clients to fill out an eight- to twenty-item questionnaire, a risk profile is created. This is then used in the asset allocation step. However, a good customer profile consists not only of risk. Key items are Risk, Return, Liquidity, Legal, Tax, Timing and Unique circumstances (RRLTTU). Not only the objective must be formalized (risk/return), also the list of constraints needs to be taken into account in order to have a good customer profile and give sound advice. And that can be deepened even further as risk does not only consist of the ability to take risk, but also the willingness to take it.

Depending on the complete financial picture, an adviser chooses to educate or mitigate. MIFID II requires answers to these questions per client, as they need to prove that the advice they provide is tailored to the needs of this particular customer. We think questionnaires are not enough to determine risk profiles, nor do they provide insights into the constraints. Data on behavior (income versus costs, mortgage, buying behavior, sports and activities etc.) can be much more insightful than a list of questions. The issue with questions is that people do not have the patience to fill out the complete list (even when

it concerns their financial future) and that it is a well-known fact that many people manipulate the answers in the questionnaire to get to their desired outcome.

In many cases, the true test for risk appetite comes when markets show a big correction. That has not been the case since the growth in popularity of many current platforms. Automated advice, however, is the only way to keep advice, and the administration of it, a profitable business. We expect robo 10.1 to use a wide range of tools to continuously monitor behavior and classify customers accordingly, thereby offering a solution to costly new regulatory requirements.

Asset allocation

After completing the full customer profile, covering objectives as well as constraints, the next step is to advise an asset allocation that fits the profile. Current robo-advice includes the following asset classes: equities, fixed income, cash and, to a certain extent, commodities. Most of the asset class exposure is gathered via passive investment vehicles (ETFs). The most important reasons for choosing ETFs versus other forms of exposure (mutual funds or direct investments) are the low costs levels and the transparency. Although we do not want to go too deep into the ETF discussion, we think it is questionable to claim ETFs are cheaper and thus a better fit for asset allocation versus alternatives. The argument of transparency is not completely justified either as a lot of ETFs are not transparent at all about costs and true exposure to the underlying assets. We do not claim that ETFs do not have a place in an asset allocation, rather that it should be combined with alpha generating active funds.

Figure 3. Comparison of asset allocation model outcomes for one customer profile

Asset Class	Digital Adviser A	Digital Adviser B	Digital Adviser C	Digital Adviser A	Digital Adviser D	Digital Adviser E	Digital Adviser F
Equity	90.1%	72.0%	51.0%	84.0%	60.0%	69.0%	72.2%
Domestic	42.1%	37.0%	26.0%	34.0%	30.0%	47.0%	28.9%
U.S. total stocks	16.2%	22.0%		34.0%		47.0%	13.0%
U.S. large-cap	16.2%		8.0%		19.0%		13.0%
U.S. mid-cap	5.2%						
U.S. small-cap	4.5%		18.0%		11.0%		2.9%
Dividend stocks		15.0%					
Foreign	48.0%	35.0%	25.0%	50.0%	30.0%	22.0%	43.3%
Emerging markets	10.5%	16.0%	13.0%	25.0%	9.0%	9.0%	17.0%
Developed markets	37.5%	19.0%	12.0%	25.0%	21.0%	13.0%	26.3%
Fixed income	10.1%	13.0%	40.0%	10.0%	21.5%	11.0%	15.0%
Developed markets bonds			15.0%		2.5%		4.1%
U.S. bonds	4.9%	6.0%	25.0%	10.0%	12.0%		10.9%
International bonds	3.6%						
Emerging markets bonds	1.6%	7.0%			7.0%		
Other	0.0%	15.0%	9.0%	6.0%	10.0%	16.0%	12.8%
Real estate		15.0%	9.0%	6.0%	5.0%		12.8%
Currencies						2.0%	
Gold & precious metals					5.0%		
Commodities						14.0%	
Cash					8.5%	4.0%	

Asset Allocation Models for a 27-Year-Old Investing for Retirement, September 2015

Source: Cerulli Associates, 2015

In addition, we think future asset allocation should consider alternative asset classes such as private equity, lending, venture capital, direct real estate, art, small caps and frontier markets as examples of an enhanced portfolio that is better diversified and possibly better customizable to individual requirements than an ETF-only approach. Besides the choice for the investment vehicle, the actual asset allocation in current robo-advice vehicles differs widely. In a comparison report by Cerulli Associates (2015), the difference in asset allocation by the different digital advice platforms is substantial, as can be seen in figure 3. Equity allocation for a 27-year old customer (same profile used for all platforms) ranges from 51% to 90%, fixed income from 10% to 40% and, perhaps most striking, cash holdings of up to 8.5%. The suitability of such cash levels for a 27-year old is very questionable. The reason for these levels of cash is obvious though when you consider the profit model of the underlying providers...so far for best advice and transparency.

Selection, execution and rebalancing

After the asset allocation has been determined, the appropriate portfolios need to be selected, the trades executed and the resulting portfolio needs to be maintained by means of regular rebalancing. There are not many robo-advisers that currently do this appropriately. Portfolio selection is often tilted towards passive portfolios as discussed in the previous part. We believe that alpha funds will get a more prominent portfolio position in the future. This is mainly inspired by better data that comes available on fund level and allows for a better comparability amongst active funds as well as between active and passive funds. Compared with traditional/human advisers, the difference between active and passive becomes even clearer. Studies found traditional advisers arrived at an allocation to active funds of 50% or more versus a 90%-plus allocation to passive funds by robo-solutions.

Most platforms provide a choice between several standard mixes (often defensive, offensive or neutral). These are not tailored to the needs of individual customers, thereby turning the customer profiling step into a check box activity instead of a step in the value chain. Several platforms set up the selection once (during the on-boarding), but do not maintain the appropriate portfolio, which drifts as a consequence of market movements. Other platforms, however, do consider the importance of rebalancing and even have well-thought out procedures that take into account cash flow rebalancing (to reduce costs) as well. We believe robo-advice 10.1 must consider the full spectrum.

A clear quality of robo-advice is the mathematical optimization of portfolios. We believe robo-advice could be better capable of optimizing a client's portfolio, according to portfolio optimization approaches such as mean variance optimization, than traditional advice. A B2B solution where robo-advisers take care of portfolio optimization and human advisers take care of asset selection as well as client servicing is a likely outcome in our view.

Tax optimisation

Not many platforms use tax harvesting methodologies for the portfolios they manage. International tax optimization is non-existing to our knowledge. We believe this will change, as artificial intelligence is integrated into the process. As an example, IBM robot Watson is now able to advise Americans on their tax questions by means of scanning 6 million data points and continuously updating to the latest tax regulation available in order to optimize the user's tax filing. If it can be done in the US, it can also be done in other countries as well. The implications of combining multiple asset categories, life events and other changes to the portfolio for the purpose of tax optimization are very complex. The costs of human advice on this topic only pay off for large accounts, while robo 10.1 brings this service to the mass market. We expect robo 10.1 to be able to integrate tax loss harvesting and tax optimization as a standard offering on the platform.

Analysis and review

Most robo-offerings have good customer interfaces and are providing tools to analyze the client's portfolio. However, life events are not always incorporated appropriately. Job changes, family expansion or the death of family members are examples of events that can change the investment objectives or constraints. Often, once the on-boarding is completed, there is no regular review of profile-fit, nor is there a procedure to react to life events or large market moves. One could argue that the average holding period of 2.5 to 3 years already solves this issue, since the on-boarding will have to be done upon every change of manager, but as these platforms mature, we expect the customer relationship to be longer and deeper as well. Robo-advice 10.1 will likely provide analysis tools as well as a regular review of objectives and constraints. It will offer advice on life events and use those moments to deepen the customer relationship.

Governance, communication and marketing

Activities such as governance, communication and marketing touch every part of the value chain and are continuous processes. We expect social media and chatbots to be used to integrate advice into customers' daily routine in robo-10.1. Although many robo-advisers are well known for their marketing and communication efforts, governance and supervision models are often lacking. This is an important point for regulators as well. Who is responsible for the functioning of algorithms? Are there people within the advice platform that know how the algorithm is built up and how it comes to the selection of funds given the client's objectives and constraints? The robo-advice landscape is continuously evolving and we expect regulators to provide guidance. Many robo-advisers are currently dodging regulation by claiming not to advise, rather to make suggestions.



The quote

Closing the financial advice gap is essential for a healthy financial climate in a society where the government is taking a less active role.

It is not unlikely that customers will file a complaint when there is a big market correction and the risk profile seemed inappropriate with the benefit of hindsight. This is a reason why many traditional advisers are not willing to advise on single events, simply because the litigation risk doesn't outweigh the fee. Robo 10.1 will no longer be able to avoid regulation, rather it needs to have procedures in place to be able to withstand litigation and comply fully with local as well as international regulations. This might become a costly affair, requiring scale.

In sum

Summarizing what we have described above, we see that robo-advice 1.0, as we currently know it, has penetrated the investment advice value chain. It is still early days though and it has not yet been able to grasp the full list of requirements for robo 10.1. We believe the insights from robo 1.0 will be used in the development of robo 10.1. The success of some robo-platforms has been to reduce costs of the advice value chain considerably. This is interesting for incumbents as well and we believe it is not unlikely that we will see further integration of robo-tools with incumbents. The value chain we presented as well as the improvements in customer on-boarding, risk profiling and asset allocation provide a clear incentive for the industry to get involved.

Robo 1.0 as a stand-alone model is not likely to survive, as we believe the growth in AUM is not enough to compensate for the large costs in the current fee environment. Robo 10.1 might be a standalone offering, since it is more complete and hence attracts a larger group of customers and a higher fee, but we believe it is also likely that early adopters and fast followers can capture a large part of the potentially expanded addressable market.

Market potential

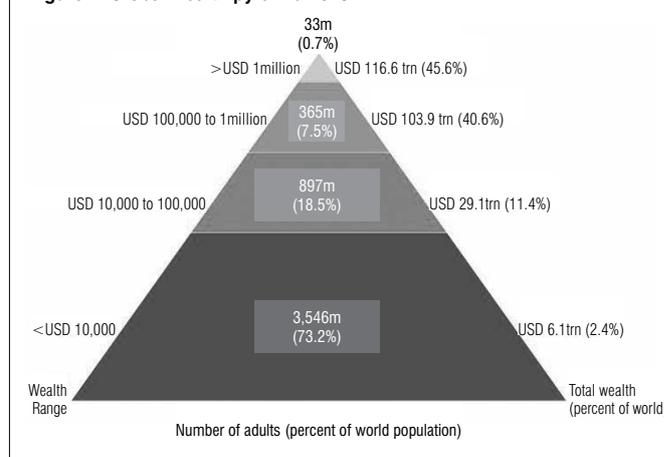
The potential market size for robo-advice offerings is large. However, the focus should shift from the current offering to robo-advice 10.1. We think robo 10.1 is likely to serve a much larger part of the wealth pyramid, and will be the base for a B2B solution. USD 30 trillion in AUM by 2025 should be achievable.

The wealth pyramid

The best starting point in order to determine the potential market size of robo-advisers is the distribution of wealth as captured by the wealth pyramid shown in figure 4. The statement that robo-advice will democratize advice and bridge the gap to low-wealth individuals might be stretching it a bit. 73% of the world population has less than USD 10,000 in wealth. Serving this group would really come down to a volume game and a very simple, low-cost advice solution. Total wealth in this group is also considerably lower at USD 6.1 trillion than the USD 250 trillion in the other categories.

A lot of attention currently goes to the USD 100,000-plus customer group. What robo-advice could do is to capture part of the USD 10,000-100,000 group as well, thereby opening up USD 29 trillion in currently unserved assets. As can be seen in Appendix A, the volume game is most likely to play out in Asia-Pacific, China and India, while the wealth game is more likely to be played in Europe and North America. This implies that robo 10.1 as we described it is most valuable to wealthier regions.

Figure 4. Global wealth pyramid 2016



The advice gap is real

Barclays has estimated there is a EUR 379 billion savings gap in the UK, where the savings gap is defined as the difference between the expected retirement and the funding of it. Germany and Russia have even larger savings gaps of EUR 469 billion and EUR 402 billion respectively. What is different for the UK though is that the shift of defined benefit pensions to defined contribution is already in full progress. People will have to close this gap and they will need to do so themselves. This requires advice. An issue in the UK is that the number of advisers is decreasing and the average age of advisers is high. Besides that, only individuals with an asset base above 150,000 pounds are considered within the scope of traditional advisers. For that reason, the Financial Conduct Authority (FCA) concluded in its Financial Advice Market Review (FAMR) that the threat of an advice gap is real and robo-advice should be considered as a solution. The FCA will make money available for doing so and there are more flexible regulations to help robo-advisers gain market share fast in order to close the advice gap.

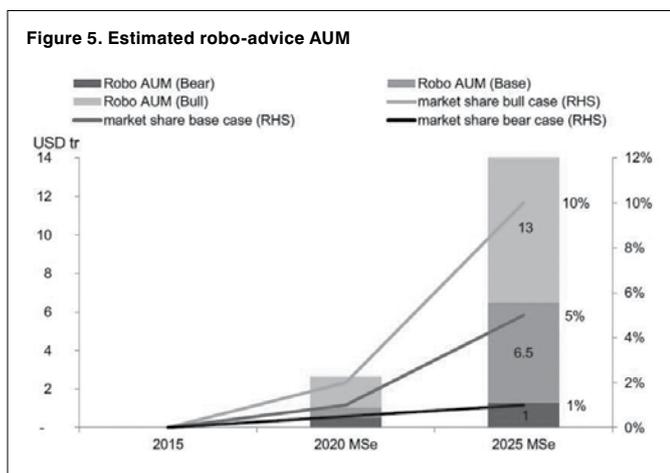
USD 30 trillion AUM market potential

The total wealth as described above includes real estate and other sources of wealth that cannot be directly invested. Robo-advice 10.1 will be able to service the USD 10,000-plus part of the pyramid in our view. Estimates by Morgan Stanley (2017) indicate that the expected wealth of the USD 10,000 – 1 million will reach USD 130 trillion by 2025. Morgan Stanley then assumes that the USD 1 million-plus group will not be served by robo-advice (since they prefer human advice to robo-solutions) and estimates the market potential between USD 1 and 13 trillion AUM by 2025, as shown in figure 5.

We believe this is too conservative because it does not take into account two very important developments in the process from robo-advice 1.0 to 10.1. We believe that robo 10.1 will be able to also serve the USD 1 million-plus market, because it is more complete. The interaction between traditional advice and robo-advice in the form of cyborg advice adds to this claim. Besides the potential to serve more layers of the wealth pyramid, we see robo 10.1 moving into the B2B market and serving as an input for human advice. We think certain parts of the advice value chain are better executed by algorithms

than humans (think of portfolio rebalancing or optimization of the risk/return trade-off). It is likely that certain consumer-phasing platforms will transform into a B2B solution to provide the required technological capabilities to traditional advisers.

All in all, we expect market penetration to be around USD 30 trillion by 2025, assuming that the move can be made towards robo 10.1. This represents 10% of investible wealth in 2025. With an average fee of ca. 50 basis points, this would boil down to a USD 150 billion revenue opportunity. Of course, the dispersion around this revenue opportunity is large and depends on the dominant fee structure in a more mature industry.



Will fees keep moving down?

An important element in the calculation of the potential market size for robo-advice is the assumption on fees. Consensus seems to be that fees will only go down further. We see limits to this view. First of all, many traditional advisers are not able to offer the full service on lower fees, mainly driven by increased regulatory requirements that add administrative costs. Current robo-advice offerings charge very low fees compared with traditional advice. We think it is already challenging to break even in current markets, and deem it near impossible to integrate robo 10.1 offerings at an even cheaper price.

A second argument for increased fees is the value of advice. Robo-advice 10.1 is potentially very complete and truly adds value to financial decision making. We expect people to be willing to pay for such services. Tax-loss harvesting, risk/return optimization and asset selection (opportunity costs) can easily make up for higher fees if implemented correctly.

However, if advice fees need to be paid upfront as suggested by several regulators, there is likely to be more resistance. For example: a 60-year old male who has saved EUR 250,000 in pension by means of saving from his EUR 25,000 salary over his active career will find a EUR 250 fee for advice relatively high, given it is 1% of his annual gross wage. However, this fee is only 10bp on his asset value, which is easily made up with proper advice on taxes or asset selection. As we showed in figure 2, we believe clients should be able to choose how to pay for advice. Either upfront or via the spread on their portfolio holdings. It must be noted that there are several regulators that do not agree with this view, however.

Winners versus losers

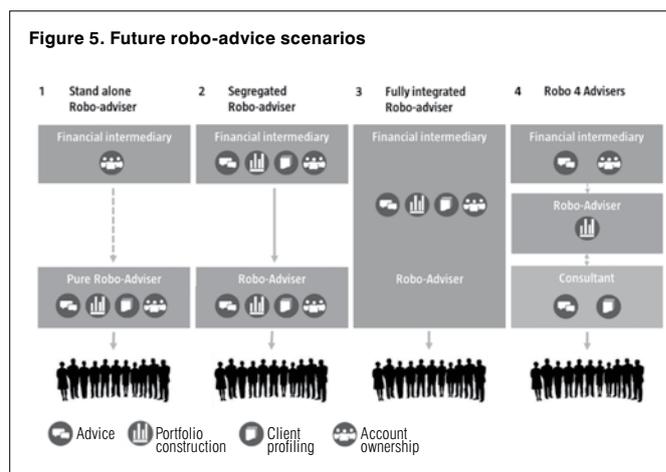
There are no clear winners yet. Robo-advisers are too small on a stand-alone basis, and winning major platforms are still in the making. Survival will depend on the integration of new technology tools. Even though current solutions are not yet optimal, now is the time to invest in order to secure the future.

Four types of automated advice

There are four possible scenarios for the proliferation of robo-advice models as shown in figure 6. Robo-advice can thrive as a standalone business model. In that case, scenario 1, the financial intermediary would not have a direct link to the robo-advice platform, other than potential referrals. The potential disruption in this scenario would be biggest, but we view this as the least likely outcome.

In scenarios 2 and 3, the robo-solution is integrated into the existing banking offering. Either as a separate solution or as a fully integrated solution. We would describe scenario 2 as the app store scenario. An intermediary (platform, wealth manager, insurer or bank) could offer several robo-advice solutions on its platform. Depending on the demand from the client, the intermediary would match the services to the client. The account ownership for the intermediary differs from the ownership of the robo-adviser, as the latter only works with customers that have signed up on the robo-advice platform. This is different from scenario 3, where robo-advice is fully integrated into the services of the financial intermediary, and the robo-adviser works with the full customer account as available from the financial intermediary. The solution will then also be branded by the service provider. The robo-solution has migrated towards a B2B service in that case. Examples of financial intermediaries that use a set-up as described under scenario 3 are Schwab, Vanguard and Van Lanschot Bankiers.

Scenario 4 is a full B2B offering, where the platform is used as tool by a financial adviser. There is no direct link in scenario 4 between the robo-adviser and the customer. An example of such a platform is wealth Wizards in the UK.



Cooperative models most likely long-term outcome

We think it will be very hard for stand-alone robo-advisers to survive. Especially the high costs of customer acquisition are problematic. In order for the current solutions to grow into robo-10.1,



The quote

What robo-advice could do is to capture part of the USD 10,000-100,000 group as well, thereby opening up USD 29 trillion in currently unserved assets.

we believe robo-advice is most likely to proliferate in cooperation with financial intermediaries and as part of a B2B solution. Financial incumbents, from banks to insurers and asset managers, that seek cooperation and integrate service are likely to come out as long-term winners. Given the current immaturity of robo-solutions, we believe there is enough time for incumbents to respond to the changing market conditions. Platforms that work as an aggregator (scenario 2) are likely to appear in the near term. Changes in regulation allow these platforms to aggregate financial data more easily and technology allows them to filter and direct customers towards full solutions, taking into account pensions, insurance, housing, estate planning, taxes and other required inputs in one holistic approach.

Although we argued that the price discussion is overdone, since we believe one should view the added value versus the costs rather than costs alone, it can be a trigger for investments. If incumbents are able to migrate customers to their more efficient robo-platforms, it might be that the operational spread can be maintained. An example would be the transition of Schwab's customer base towards their Intelligent Advisory platform. Although

about 80% of the hybrid robo-solution are internal customers, the operational margin per customer has grown as a result of the more efficient value chain.

Traditional advice challenged

Although robo-advice in its current form is not yet mature, we believe it is real enough to be a challenge to traditional advice. We believe the integration of algorithms with human advice is the most likely long-term outcome, but not all traditional advisers have the technical nor financial capabilities to keep up. The complete solution basically comes down to three large blocks; asset allocation, relationship management and technology. Asset allocation and relationship management are often not the problem. Dealing with the fast-changing world of technology is. Advice fees are likely to move lower, although at some point there will be a trade-off between value-add and costs. If robo-advice 10.1 becomes a reality, the traditional advice models are not likely to survive. Although we do not expect traditional advisers that do not invest in technology to disappear overnight, we do believe that the gap they need to close in a couple of years' time might prove very expensive or even unsurmountable. **FS**