Update to the Report on the IOSCO Automated Advice Tools Survey

Final Report

The Board

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1. Introduction

In July 2014, the IOSCO published its *Report on the IOSCO Social Media and Automation of Advice Tools Surveys*, identifying how market intermediaries[1] are using these technologies and how intermediaries and regulators are overseeing their use. The July 2014 Report found that the adoption of these technologies by intermediaries was still in the early stages. Accordingly, the July 2014 Report recommended that IOSCO Committee 3 on Regulation of Market Intermediaries (C3) continue to monitor these areas and determine if further work is needed.

C3 discussed whether there were trends that would merit updating the July 2014 Report and determined that there were no significant developments in the social media area to merit further work at that time, but observed that there had been some significant developments in the use and regulation of automated advice tools. As a result, the IOSCO Board approved to update the July 2014 Report with respect to automated advice and it did so by soliciting input from all C3 members.

Market intermediaries have been using various forms of automated tools in the provision of advice for more than a decade. Use of both intermediary and customer facing tools is expanding as intermediaries seek to provide advice in a more efficient and cost-effective manner. In addition, consumers, whether by preference or because they deem the traditional (face-to-face) services of an intermediary too expensive or extensive for their needs, at times choose to manage their own portfolios directly using online tools.

Since the July 2014 Report, the use of internet-based technology has increased along with the sophistication and range of functionalities and analytics provided by automated advice tools. In addition, regulation of internet-based technology has also evolved and advanced. Accordingly, IOSCO sought to update its 2014 findings.

The July 2014 Report was based on a members' survey of intermediaries and that survey produced the following key findings:

- The use of automated advice tools was growing around the world. Intermediaries were using these tools to assist with their suitability and Know Your Customer (KYC) obligations.

[1] The term intermediaries should generally be understood as defined in the IOSCO core principles. As stated in the IOSCO Methodology for Assessing Implementation of the IOSCO Objectives and Principles of Securities Regulation (Oct. 2011), "*Market intermediaries generally include those who are in the business of managing individual portfolios, executing orders and dealing in, or distributing, securities.*" According to the methodology, a jurisdiction may also choose to regulate as a market intermediary an entity that simply provides advice regarding the value of securities or the advisability of investing in, purchasing or selling securities as well as an entity that engages in proprietary trading, securities underwriting or the placing of financial instruments without a firm commitment basis.

- The vast majority of firms limited their recommendations to asset allocations and products such as collective investment schemes, mutual funds, and Exchange Traded Funds (ETFs).
- No regulator that responded to the survey indicated that it prohibited the use of automated advice tools, but very few had specific rules or guidance related to their use. Rather, most regulators relied on, among others, their general suitability, disclosure, supervision and record keeping rules.

2. Methodology for the 2016 Update

IOSCO pursued its mandate by asking each member to submit updates on the use and oversight of automated advice tools in their respective jurisdictions and to submit these updates to the drafting team.[2] A list of ten questions was provided to frame the update (See Appendix I for this list of questions). Respondents were asked to identify how automated advice tools have developed in their jurisdictions, whether they have any additional regulatory concerns, and whether there have been any regulatory initiatives undertaken or envisaged at a national level since the publication of the July 2014 Report.

Of the 32 C3 members at the time, IOSCO received responses from 17 jurisdictions and 18 authorities (See Appendix II for list of respondents). The Canadian response is a joint response from two authorities — the Quebec Autorité des Marchés Financiers (AMF) and Ontario Securities Commission (OSC) — and the responses from the United States' include a joint response from the Securities and Exchange Commission (SEC) staff and the Financial Industry Regulatory Authority (FINRA) and a separate response from the Commodity Futures Trading Commission (CFTC).[3] (For counting purposes, a joint response is counted as a single regulator).

Responses to the 2016 request for an update were received against the backdrop of increased business and regulatory interest in financial technology (FinTech) in a number of jurisdictions, not only in the securities industry but across the financial sector. Growth in the use of automated advice tools is one manifestation of this broader trend.

The remainder of this report will provide a summary of the 2016 update responses to each question followed by conclusions.

[2] The 2014 report defined *automated advice tools* to mean interactive tools that either broadly or specifically produced recommendations for asset allocation, an investment strategy, or specific financial instruments.

[3] References in this report to AMF/Quebec refer to input attributable solely to the Autorité des Marches Financiers of Quebec; references to AMF refer to input attributable solely to the Autorité des Marches Financiers of France; and references to AMF/OSC refer to input attributable to both Canadian regulators.

3. Summary of 2016 Update Responses

Question 1: Part 1: Has your jurisdiction experienced an increase in the use of automated advice tools by firms/platforms in your market since it responded to the survey (November 2013)?

The use of automated investment advice tools has continued to expand since the 2014 survey; 14 of 17 jurisdictions reported growth in the use of such tools, and 11 jurisdictions reported the operation of at least one firm delivering solely online advice (AFM, AMF, ASIC, BaFin, CNBV, CNMV, CVM, FCA, FINRA/SEC, HKSFC, JFSA). Some regulators from jurisdictions that do not currently have operational automated advice tools (e.g. RFSA) nonetheless reported increasing interest in such tools.

It is important to note several caveats on the interpretation of the responses. First, not all jurisdictions that reported growth have online firms operating under a fully automated advice model, e.g., Canadian online advisors are operating under a hybrid model that utilizes an online platform for efficiency, but a human advisor remains involved in, and responsible for, making investment decisions for the client. Second, several jurisdictions reported the introduction of tools that bring elements of automation to the market that do not rise to the level of fully automated, personalized advice, i.e., what might be considered a "robo advisor." For example, some regulators have seen growth in automated fund distribution platforms (HKSFC) or mirror trading functionality (AMF, CMB). Definitional questions around the functionality that constitutes "automated investment advice" make precise cross-country comparisons difficult.

Question 1, Part 2: Has the growth been in the use of automated advice tools by intermediaries, by fully automated advice platforms, or both?

To the degree respondents addressed this question, they noted a range of business models and types of automated advice. These ranged from tools that provide filtering to asset allocation models to tools that provide portfolio construction advice, as well as advice around retirement planning. Regarding competition among different types of intermediaries, BaFin reported that bank and non-bank intermediaries were offering advice services that were solely online. And two regulators (FCA, FINRA/SEC) reported growth among third-party vendors of automated advice services.

Question 1, Part 3: To what, if anything, do you attribute this growth? Conversely, if there has not been an increase in the use of automated tools, do you attribute this to any particular factors?

Respondents attributed the growth in use of automated tools to several factors: primarily low cost/fees, convenience, the low asset minimums for these accounts, and changes in consumer behavior. Implicit in several of the responses to this question, other parts of the update and other work regulators have done, is that millennials, in particular, are amenable to the automated investment advice delivery model, and are reaching the age where investments become a larger consideration in their financial planning. The demographics of users are further discussed under Question 7.

The FCA noted that factors that may inhibit growth include the cost of client acquisition for new market entrants and a desire for greater regulatory clarity about the boundary between regulated advice and guidance, as well as with respect to suitability of advice in a narrow context. Separately, one regulator (BaFin) noted that while the number of automated advice platforms had increased, customer demand had not increased significantly. AMF/OSC have also seen online advisors entering into referral arrangements with financial planners or other advisors so as to attract more clients to their online services. In addition, some online advisors have started offering their digital platform software to other traditional advisors who are interested in developing their online platforms or improving efficiencies in their operations.

Question 2: Is your jurisdiction able to monitor the number of firms providing automated advice and/or track the growth in the level of assets under management by those firms (i.e., do firms that are already authorized have to file with the regulator to provide automated advice?)

The update results shows that while regulators are assessing the development and spread of automated investment advice tools in their jurisdictions, they are doing so with limited information regarding the number of firms that are engaged in this activity and the assets under management at such firms. Most regulators' authorization/registration schemes (except for AMF/OSC) do not require firms already authorized to provide investment advice to update the regulator if the firm commences providing that advice through automated means, i.e., they are technology neutral and do not differentiate between advice or portfolio management delivered by a human and that delivered by a software package, possibly with a human interface overlay. AMF/OSC require that a firm already authorized/registered to provide investment advice notify and submit appropriate filings to the regulator when amending its business model. As part of the review process by the Canadian Securities Administrators (CSA)[4] staff, the firm will be asked to provide adequate documentation to support how the proposed online business model can meet its regulatory obligations prior to launching the online advisory services to its clients.

Several regulators noted that their oversight programs could make them aware of authorized firms that commence providing digital investment advice. ASIC has launched a *Robo-advice Task Force*, which is informally identifying firms offering automated advisory services through interactions during the Australian Financial Services licensing process, firms

4 The CSA is an umbrella organization of Canada's provincial and territorial securities regulators whose objective is to improve, coordinate and harmonize regulation of the Canadian capital markets.

reaching out to ASIC, media reports, and reports from competing firms. AMF/OSC (as well as other Canadian securities regulators) has dedicated resources to monitor online business models and to discuss issues raised by these new business models in order to ensure consistency in decision-making and to establish a consensus across Canada on the way to interpret the present regulation.

In addition, several regulators noted that they would be aware of firms seeking an initial authorization to provide investment advice, regardless of how that advice was to be provided, i.e., through a traditional human-intermediated channel or with a digital tool.

No regulator was able to provide data on the assets under management (AUM) or the total amount of client assets attributable to firms offering automated advice tools.[5] However, a number of consultancies have produced reports on automated advice services and according to one such entity, Cerulli Associates, the total AUM at the top digital advice providers in the United States was roughly $18.7 billion as of the second quarter of 2015.[6] Cerulli projects that digitally advised assets in the United States will grow to $489 billion by the end of 2020 with an upper limit of $639 billion and a lower limit of $339 billion.[7]

Question 3: Has any firm (s) in your jurisdiction begun offering advice solely online? Has any firm (s) begun offering a hybrid advice product on-line (i.e. automated advice supplemented by human interventions at key junctures)? If so, what kind of human intervention is being provided? Are these individuals registered with/authorized by an appropriate regulatory body and, if so, in what capacity? Approximately how many firms of each kind are operating in your market today?

The responses to this question show that there is a range of human involvement in connection with automated advice tools. A total of eleven regulators reported having one or more firms offering automated advice online or with little or no human intervention, i.e., customer support only (AFM, AMF, ASIC, BaFin, CNBV, CNMV, CVM, FCA, FINRA/SEC, HKSFC, JFSA). A twelfth (KFSS) recently amended its regulatory regime to allow fully automated advice, but it is not clear if any firms have commenced offering such advice.

The provision of advice through automated tools typically begins with a series of questions posed to the investor, which the tool then uses to produce an investor profile and match that investor to a portfolio. Some responses raise definitional issues regarding the functionality- e.g., product filtering and copy or mirror trading- that rises to the level of “advice”.

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5 The OSC advised, however, that it monitors and tracks the level of AUM of its registrants, including online advisers, through their completion of a risk assessment questionnaire on a periodic basis.

6 Retail Direct Firms and Digital Advice Providers 2015: Addressing Millennials, the Mass Market and Robo Advice, Cerulli Associates, pg. 90.

7 Ibid. pg. 94.

Among the eleven jurisdictions that have fully automated platforms, the regulators from at least three (ASIC, BaFin, FCA) reported that these platforms have features that could be characterized as safeguards to prevent the delivery of inappropriate advice to a customer. With respect to Australia and the UK, "solely online" advisors generally provide advice that is quite limited in scope, and have procedures to "triage out" clients for whom the advice provided would be inappropriate. Moreover, in the UK, some firms offer clients the choice of either purely online or hybrid advice to match the service with the client's preference. BaFin reported that the customers using online advisors always have the option to request intervention by a human advisor.

A total of 11 regulators reported having firms that offer automated advice services with some human intervention at key points in the process. These jurisdictions include some that have both pure and hybrid automated advice as well as three that currently have only the hybrid model (Canada, Indonesia, Korea). In the case of Canada, the use of a hybrid approach is a result of decisions made by regulators during the authorization of the first firms that applied to offer online portfolio management services and subsequent guidance. In Korea, the hybrid approach is driven by regulatory requirements (although as noted elsewhere in this update, Korea's regulatory restrictions on fully automated advice are changing). In Indonesia, the use of hybrid platforms appears to be a business decision of the firms.

Online advisors in Canada are generally allowed to operate two different client onboarding models: the "call model" and the "no call model". Under the former, a registered advising representative (AR) will contact the client by phone, e-mail, video link or internet chat to ensure adequate KYC information is collected through the online questionnaire. Under the "no call model," an AR makes contact only if there are questions or concerns about the responses to the online questionnaire provided by the client. Firms operating under the "no call model" must demonstrate that they have an effective system in place to identify circumstances when client contact is warranted, and advisors under this model are presently limited to providing advice on simple investment products such as unleveraged ETFs or low-cost mutual funds. Regardless of which onboarding model the advisor chooses to operate, a client always has the option of initiating contact with an AR. In addition to the review performed by the AR to ensure that sufficient KYC information has been gathered from the client, an AR remains actively involved and is responsible for reviewing and approving the suitability of a portfolio proposed by the software.

In the United States, there are a number of hybrid advice models with varying degrees of human intervention. The degree of that intervention is a business decision and can range from technical support to an opportunity to discuss the automated advice with a firm representative. At least one firm has designed its automated advice procedure to automatically set up a discussion with a human advisor.

In the United Kingdom, human intervention may take different forms such as an individual delivering the process telephonically supported by advice software, to an advice-delivery process that is online with the final product being scrutinized by a human advisor. In the Netherlands and France, human involvement may take place at the end of a fully automated process in the form of a wrap-up session that may occur telephonically or via social networks.

Given that eleven jurisdictions have reported firms delivering automated advice solely online, the trend toward greater automation of advice delivery appears likely to continue, potentially with the introduction of more sophisticated tools capable of delivering tailored advice involving complex or leveraged products.

Six regulators (AMF/OSC, BaFIN, CNBV, FCA, FINRA/SEC, IFSA) responded that individual registration or authorization is required for individuals involved in providing advice to customers through the use of an automated advice tool. In Germany, an individual registration for investment advisors is required in the so-called Employees and Complaints register. Additionally, Germany requires every firm that offers automated advice to register at least one person who is responsible for the firm's automated advice tool. In four additional cases (AMF/OSC, ASIC, KFSS, and BaFIN), the regulator requires that individuals be appropriately *qualified* to provide advice, i.e., meeting certain competency requirements.[8] In all cases, firms providing advice must be registered/authorized.

Several regulators observed that customer interactions are most likely to occur at the end of the process when the personal advice is actually delivered to the customer for action, and in such circumstances individuals involved must be registered/authorized. The FCA noted in its response that the question of whether individual registration is required depends on the circumstances. If the human interaction consists solely of walking the customer through the online input process or answering questions of a factual nature -but not giving advice- no registration is required. If the individual provides actual advice, then registration/authorization is required. The Canadian response states that an AR is always involved in the advice process, and these individuals must be registered to provide advice to clients.

<u>Question 4: Are automated advice platforms providing advice or portfolio management services, or both? If advice, what type of advice are they providing (e.g., holistic or full advice or a more limited form of advice)? Please describe what these or equivalent terms for the various types of advice mean in your jurisdiction</u>.

Fifteen regulators reported that their jurisdictions have automated platforms providing advice or portfolio management services, or both.[9] Of this number, 12 reported that firms in their

8 E.g., ESMA Guidelines for the Assessment of Knowledge and Competence (22/03/2016; ESMA/2015/1886 EN), p. 7.

9 Jurisdictions differ as to how they define advice and portfolio management. For example, in Europe, portfolio managers have discretion. In the United States and Canada, portfolio managers may or may not have discretion over client accounts. However, as of now, online advisers in Canada have all chosen to provide discretionary, managed account services to their clients.

jurisdiction provide both services (AFM, AMF, ASIC, BaFIN, CMB, CNBV, CNMV, CVM, FCA, FINRA/SEC, JSFA, KFSS). AMF/OSC reported discretionary portfolio management as the only service provided by their online advice platforms. The final two (HKSFC, IFSA) reported having firms that provide automated advice platforms limited to the distribution of certain investment funds. Depending on the firm, these platforms may or may not offer advice. To extent they offer advice in Indonesia, the advice is limited to asset allocation.

The definition of the different types or categories of automated advice services being delivered varies across jurisdictions. Despite these differences, most regulators responded that the advice was limited by the particular circumstances of the investor (i.e., the definition of advice) or particular need (e.g., at retirement) of the person seeking the advice. While most jurisdictions did not see automated advice platforms that provide holistic advice or comprehensive financial planning for investors, the AMF/OSC responded that a few online advisors in Canada are providing financial planning and tax-loss harvesting services to their clients.[10] In addition, ASIC indicated that there were firms in the process of developing these capabilities. Anecdotally, one hybrid automated advice platform in the United States also mentioned in its discussions with FINRA that its goal was to develop an integrated and comprehensive financial planning platform.

In sum, all 15 respondents reported that automated advice firms in their jurisdictions were delivering some form of advice or portfolio management linked to specific investment products, and that other services like financial planning and tax-loss harvesting are offered by certain online advisors in Canada.

<u>Question 5: Are automated advice platforms providing trade execution functions? If so, has your jurisdiction experienced an increase in the use of automated advice tools that also provide automated trade execution in your market since November 2013?</u>

Ten regulators (AMF, AMF/OSC, ASIC, CMB, CNBV, CNMV, CVM, FINRA/SEC, HKSFC, JFSA) responded to this question. Six (AMF/OSC, ASIC, CNBV, CNMV, HKSFC, JFSA) currently had one or more advisory firms providing execution services along with advice. In Brazil, France and Turkey, firms typically contracted with outside firms to provide trade execution, while in Canada the portfolio managers predominantly used an affiliated or third-party broker-dealer. In the United States, FINRA/SEC responded that although it is possible for a firm registered as an investment advisor to provide execution services by also becoming registered as a broker-dealer — i.e., to be dually-registered — those firms that provide automated investment advice typically provide execution through a separate legal entity, either an affiliated or unaffiliated broker-dealer. It is important to note, however, that this distinction is not directly visible to the customer, i.e., the customer can initiate execution through the automated investment advice platform. Other regulators also reported that firms

10 Tax-loss harvesting is a method to reduce capital gains tax exposure by selling one or more securities that can generate tax losses to offset capital gains. Typically, securities that are sold are replaced with securities that provide similar market exposure.

that mainly offer automated portfolio management services typically relied on arrangements with a third-party or an affiliate broker-dealer for execution services.

Question 6: What kinds of investment products are offered on automated advice platforms (both pure and hybrid automated advice platforms) and which are most commonly offered?

Fifteen regulators (AFM, AMF, AMF/OSC, ASIC, BaFIN, CMB, CNBV, CNMV, CVM, FCA, FINRA/SEC, HKSFC, IFSA, JFSA, KFSS) responded with information on the range of investment products being recommended via automated advice platforms. The overwhelming majority of respondents listed investment funds, mutual funds, and ETFs as the most common products being recommended at this time. In Brazil, fixed income products (e.g., treasury bonds and bank notes) are also being offered.

While these products are the most common, BaFin has seen automated advice platforms that also recommend shares and bonds, and ASIC has seen shares included as part of recommended portfolios.

Finally, three other regulators (AMF, CMB, FINRA/SEC) observed that some automated advice platforms provide access to higher risk products. In the case of the United States, the regulators referred to a FINRA report that identified instances of recommendations expanding to encompass the purchase of alternative investments, commodity ETFs, and even bitcoin. In France and Turkey, the AMF and CMB respectively reported that some automated advice firms are recommending model portfolios comprised of OTC products[11] such as contracts for differences (CFDs), foreign exchange, binary options, and other leveraged products.

Question 7: If known, what is the typical profile of investors using these platforms? Younger people beginning to invest? Older people or retirees or others that cannot afford or do not want to pay the cost of traditional advice? A mix? To what do you attribute any demographic shift that you have identified as users of these platforms?

Regulators were able to provide more information about the type of investors targeted by automated investment advice platforms (in the first instance typically younger, tech savvy, with limited capital, but others as well), but were less clear on who was actually investing on the platforms. Although no regulator had proprietary data, some regulators (AFM, AMF/OSC, ASIC, CNBV, FINRA/SEC) had communicated with operators of automated advice platforms and based on these interactions responded that that the primary market for automated advice is millennials (born between 1980 and 2000), but that other age groups such as Generation X (born between 1965 and 1980), as well as subsequent generations are making use of these tools. Some other regulators held similar views based on commentators or other information sources.

11 In Turkey, the national exchange does not sanction automated advice programs covering exchange-listed products.

Both ASIC and the FCA reported that, from a business model perspective, some automated advice firms were targeting scaled advice around retirement planning. According to the FCA, one area of particular focus has been “the ‘at retirement market’ with firms looking to help consumers with their choices at this later stage of life”. The AMF, too, reported that automated advice platforms were targeting “active young seniors.”

Where regulators had a view on the drivers for investors to use digital advice tools, one driver was economic -automated advice platforms appear attractive to younger investors who may be less financially well-off and who are attracted by the online advisor’s lower fee structure (Canada) - and another was the user experience, i.e., investors who prefer the online interface (France).

A number of other regulators had no data on the investor profile for automated advice platforms (BaFin, CNMV, CVM, HKSFC, IFSA, KFSS, RFSA).

<u>Question 8: Does your jurisdiction have any regulatory concerns unique to the use of automated advice tools? If so, what are they?</u>

Respondents generally agreed with the concerns outlined in Attachment 1 to the mandate document (found in Appendix I to this report), although one regulator (FINRA/SEC) noted that many of these concerns also apply in the context of more traditional advisors and are unique only to the extent that robo advisors place greater emphasis on technology. In addition, the responses highlighted various other concerns, including those outlined below, which may, in some cases, overlap with those in Appendix I.

Suitability of Advice

Eight respondents (AFM, AMF, AMF/OSC, CNBV, FINRA, HK SFC, KFSS, MAS) expressed concerns about the suitability of investment advice delivered to customers of automated advice services. Generally, these concerns revolved around the range and detail of questions asked to develop a customer profile and the generation of a suitable recommendation for customers meeting that profile. These jurisdictions believe that the KYC questions could either be too generic or narrow in scope, or that the absence of certain questions, e.g., about the investor’s financial circumstances or investment knowledge/experience, would affect the advisor’s ability to perform an adequate suitability assessment. Hong Kong SFC, for example, was concerned that the “mechanical matching of client risk tolerance and product ratings in its jurisdiction might not be sufficient to meet the suitability requirement.”

AMF/OSC also indicated that some online advisors may not factor in all KYC information (e.g., annual income or net worth) into the firm’s algorithm when recommending a model portfolio for the client. Also, some online advisors rely on the clients to update their KYC information via the online system and do not have sufficient follow up procedures to ensure that clients' information is updated in a timely manner. Moreover, AMF/OSC observed that some firms have a relatively high ratio of clients to ARs, raising doubt about the ARs ability to discharge their regulatory obligations, provide clients with adequate levels of service, and perform the monitoring of clients' accounts required under a discretionary portfolio management arrangement.

One regulator (AMF) suggested that the high cost of developing appropriate questions and profiles for a wide range of potential clients could prompt firms to offer relatively few profiles based on more generalized questions. This approach would lower costs and complexities of the models being offered to potential clients, but at the expense of truly individualized advice.

The AMF and the CMB also raised concerns about the operation of online services that recommend strategies linked to complex, high-risk products that, by definition, have a narrow universe of investors for which the products are suitable. These online platforms increase the risk of these products being sold to clients for whom the products are not suitable, particularly in light of the aggressive marketing tactics that some firms use.

Suitability of Clients for Automated Advice

ASIC and the FCA, among others, raised the concern that some individuals might not be appropriate clients for automated advice services. For example, a fully automated advice process may not be suitable for those with more complex needs, or that are heavily indebted, as many of these processes often do not take into account all of the clients financial needs or holdings. In the UK and Australia, the regulators expect that automated advice tools will triage out clients for whom the process is not suitable. However, as several regulators have pointed out, the questions posed to a client may not be sufficiently detailed to determine whether the client is suitable for online advice.

Limitations of Automated Advice

Seven regulators (AMF, AMF/OSC, ASIC, BaFin, FCA, FINRA/SEC, HKSFC) expressed concerns about customers lacking awareness of, or not understanding, the limitations of automated advice tools. Clients may not understand the service offered; for example that the automated advice tool may not consider their full financial and personal circumstances. Some regulators are also concerned that potential customers may not understand the difference between execution-only platforms and those that offer advice/recommendations. There may also be biases in the tool, for example the favoring of proprietary products, about which a potential client may not be aware. Moreover, a number of jurisdictions, including Canada and Hong Kong, are concerned that some execution-only platforms may have crossed over into providing advice by offering a range of tools and services to their clients in making investment decisions.

To address this, a number of regulators are making efforts to better clarify: (1) what tools would be considered to be providing a recommendation or advice that will trigger the applicable suitability obligation; (2) the difference between general information, generic advice and personal advice/recommendations; and (3) the requirement that firms clearly disclose the type of service they are providing, the corresponding standard of care, and the limitations of that service, including any inherent biases or conflicts. Additionally, regulators are conducting reviews to ensure compliance by firms operating execution-only platforms with the regulatory requirements that allow for their exemption from suitability.

Adaptation of Supervisory Techniques

Some regulators referenced in the previous section also specifically suggest that their supervisory techniques must evolve to keep pace with advancing technology in the delivery of financial advice. These regulators acknowledge, however, that the firms are the first line of defense. As such, firms must closely monitor and test their automated advice algorithms, risk management and internal controls. However, the regulators also understand that they need to develop supervisory techniques that keep pace with technology and business model developments.

For example, the AFM and AMF specifically acknowledged that regulators must have the regulatory capacity to examine both the data inputs (customer information captured) and the outputs (customer profiles and customized advice to a potentially wide range of customers) to ensure that customers are treated fairly according to the applicable standard of care. The AMF suggested, however, that regulators may also have to acquire the technical capacity to review algorithms as part of the vetting process at authorization. The AFM raised the possibility that regulators may also have to eventually review algorithms as part of the ongoing supervisory process, while ASIC acknowledged the difficulty of examining the strategies used by firms due to the complexity of the algorithms and the website architecture.

In sum, these regulators recognize that supervisory techniques must continue to develop over time as the automated advisors' business models and algorithms change to accommodate more diverse products and broader subsets of potential clients.

Cybersecurity

Three regulators (ASIC, FINRA/SEC, HKSFC) specifically raised the issue of cybersecurity and/or the protection of sensitive customer information as a discrete concern related to the supervision of automated advice providers. Several others (including the AMF/OSC) raised the issue implicitly with reference to concerns regarding adequate internal controls or operational integrity, or by general agreement with the list of regulatory concerns that accompanied the request for updated information.

In April 2016, IOSCO published a report on cybersecurity risks and the need for international coordination of efforts among financial regulators.[12] Although the Report was not specific to automated advice tools, Chapter 5 discusses cybersecurity risks from the perspective of asset managers. Among other things, it describes a 2014 SEC Office of Compliance Inspections and Examinations staff examination sweep summary that showed an average of 74% of the 49 advisors examined reporting that they had experienced cyberattacks directly or through a vendor.[13] The target areas for such attacks—ranked as either high or medium risks—included client data, proprietary algorithms, trade execution capability, and public website/client log-in functionality. The Report also highlighted some prudent practices to mitigate these threats.[14]

<u>Question 9: Do your jurisdiction's existing rules governing advice adequately address concerns related to automated advice tools? Has your jurisdiction put in place or is it contemplating putting in place any additional or tailored regulatory measures (i.e., over and above those stated in the July 2014 report), specifically aimed at addressing concerns related to automated advice?</u>

Eight regulators (AMF/OSC, ASIC, BaFin, CNBV, FCA, FINRA/SEC, HKSFC, JFSA) reported that their existing rules appear to be sufficient at the present time to cover automated advice tools, while three others (AFM, AMF, MAS) reported they are still assessing whether additional rules or safeguards are needed regarding automated advice tools. The AMF is considering a rule to regulate the use of simulations (such as those used as a sales tool on platforms offering highly leveraged products), and the AFM is considering whether its regulatory framework will be adequate going forward given the trend toward fragmentation of advice. Korea recently approved new regulations that would allow fully automated advice. In Turkey, the CMB issued a rule on what constitutes advice and what constitutes portfolio management with respect to automated platforms promoting leveraged products.

Two regulators (AMF/OSC, ASIC) have issued guidance based on their existing rules framework. The Canadian regulators issued guidance on how portfolio managers providing advice via an online platform are expected to meet the registration and conduct requirements set out in National Instrument 31-103 *Registration Requirements, Exemptions, and Ongoing Registrant Obligations* (NI 31-103). ASIC has issued guidance that addresses, among other things, training and competency standards as well as monitoring and testing of algorithms. The guidance is set out in ASIC Regulatory Guide 255 *Providing digital financial product advice to retail clients* (RG 225).

12 Cyber Security in Securities Markets - An International Perspective; Report on IOSCO's cyber risk coordination efforts; the Board of the International Organization of Securities Commissions; FR02/2016, April 2016.

13 Ibid., pg. 45.

14 Ibid., pp. 48-49.

Some of the key points in the Canadian guidance and the Australian guidance are summarized below and in greater detail in Appendix III.

Guidance Issued by the Canadian Securities Administrators

The response of the Canadian regulators referred to CSA Staff Notice 31-342—*Guidance for Portfolio Managers Regarding Online Advice* (the Guidance), which was issued by the CSA on September 24, 2015. The Guidance provides an overview of the operations of online advisors in Canada and focuses on the regulatory obligations of registered portfolio managers (PMs) and advising representatives (ARs) that seek to provide discretionary investment management services through an interactive website. Canadian online advisors are not "robo advisors", rather they provide hybrid services to their client by utilizing an online platform for efficiency, while the ARs remain actively involved in, and responsible for, the onboarding of new clients and the investment decision-making process. Clients' managed accounts are invested in relatively simple products such as ETFs and low-cost mutual funds.

The registration and ongoing conduct requirements (including KYC and suitability obligations) as set out in NI 31-103 are technology neutral, and the rules are the same for PMs operating via an online advice platform.[15] The Guidance also emphasizes that an AR is responsible for: 1) ensuing that adequate KYC information has been gathered to support the suitability determination, and 2) reviewing and assessing whether the recommended portfolio is in fact suitable for the particular client. In addition, the Guidance highlights that the KYC process of an online advisor must amount to a meaningful discussion with the client (or prospective client) and that a well-designed online questionnaire and system should include, among other things, a series of behavioral questions to establish risk tolerance and a test for inconsistencies in answers that will not allow the questionnaire's completion until they are resolved. The Guidance also recommends that the website contain useful explanations and relevant information to assist the client during the onboarding process.

Finally, the Guidance reminds firms that are planning to change their business model to provide online advice that they must notify CSA staff at an early stage and submit the appropriate filings for a due diligence review. CSA staff will also consider whether terms and conditions will be appropriate for different online models as they evolve over time.

Guidance Issued by ASIC

In March 2016, ASIC published for comment a consultation paper and a draft regulatory guide for firms providing (or seeking to provide) digital financial product advice to retail

15 The Guidance also cross-references CSA Staff Notice 31-336, Guidance for Portfolio Managers, Exempt Market Dealers, and Other Registrants on the Know-Your-Client, Know-Your-Product, and Suitability Obligations. The latter reiterates that these requirements are the same regardless of whether a PM uses a traditional business model or an online platform.

customers.[16] On August 30, 2016 ASIC published RG 255 based on feedback to the consultation.

This initiative was characterized as part of ASIC's commitment to encourage innovation that may benefit consumers. While Australia's regulatory framework governing advice delivery is technology neutral, ASIC believes that certain elements of digital advice require interpretive guidance for firms to comply with existing requirements on organizational competence and delivering advice that meets the best-interests-of-the-customer standard for personalized product advice to a retail customer.

When the delivery of digital financial product advice is based entirely on the use of technology, ASIC requires each firm that is licensed to deliver digital advice to have at least one Responsible Manager[17] that meets the minimum training and competence standards for advisors. This individual is responsible for the firm's day-to-day decisions and ongoing activities for delivering financial product advice through automated means. The guidance also envisions a robust program of monitoring and testing the digital financial product advice being delivered by licensees. ASIC listed several specific expectations regarding quality control measures for advice being delivered, including: collecting and reviewing a sample of digital advice by a human advisor for compliance with legal requirements; and assessing information in the client files in conjunction with any other information needed by a human advisor to form an objective view of the quality of the advice delivered.

<u>Question 10: Since the publication of the July 2014 Report, has your agency conducted, or is it currently planning to conduct, any thematic work on automated-advice providers? If yes, please describe the regulatory initiative(s) and, as applicable, provide a brief summary of your findings and observations.</u>

Regulators in a number of jurisdictions responded that they have conducted, are currently conducting or may conduct thematic reviews related to automated investment advice. Most regulators, however, had no specific plans for such reviews.

The scope and focus of the thematic reviews varied widely, and many are still ongoing. The AFM is participating in part of a broader, pan-European effort to assess the impact of automated advice across the securities, banking and insurance sectors through the Joint Committee of the European Supervisory Authorities. FINRA's review was aimed at addressing effective practices related to both client- and advisor-facing automated investment advice tools. AMF/OSC started its review of online advisors to assess their compliance with regulatory requirements and, where appropriate, may consider issuing further guidance which sets out the regulator's expectations and best practices for firms operating the online business

[16] Consultation Paper 254, *Regulating digital financial product advice* and draft Regulatory Guide 255 *Providing digital financial product advice to retail clients*, March 21, 2016.

[17] A Responsible Manager is a person that is directly responsible for significant day-to-day decisions regarding the delivery of the firm's financial products and services.

model. Finally, the FCA and HM Treasury conducted an analysis of the costs and availability of financial advice services with implications for automated advice tools. Some of the key points of these reviews are summarized below and in greater detail in Appendix IV.

In addition to these thematic reviews, several regulators noted their efforts to develop FinTech-focused units, in part to facilitate automated advice.

Thematic Review by the European Supervisory Authorities

In December 2015, the joint committee of the European Supervisory Authorities (ESAs)[18] (Joint Committee or Committee) published for comment a wide-ranging discussion paper, *Joint Committee Discussion Paper on Automation in Financial Advice*, based on the observed increase in digitalization of financial services across the banking, insurance/pensions and securities sectors.[19] The discussion points and questions posed are organized around four elements with implications for regulatory policy-making:

- the principal characteristics and outputs of automated advice tools currently found in the respective financial sectors the ESAs regulate;
- the range of business models among firms that offer such tools;
- the potential benefits and risks to consumers and financial institutions from such tools; and
- the evolutionary path(s) that increased digitalization of financial advice is likely to take across the EU's banking, insurance/pensions, and securities sectors.

The Committee identified both potential risks and benefits from automated tools for both consumers and financial institutions. Some examples of the potential risks to consumers the Committee highlighted include: 1) consumers may make unsuitable decisions as a result of lack of information, and reduced opportunity to fill knowledge gaps or seek clarifications; 2) consumers may receive unsuitable advice as a result of not being made aware how information they input is processed by the automated tool; and 3) consumers may receive unsuitable advice as a result of biases in the tool of which they are not aware.

Examples of potential benefits to consumers cited include the following: 1) consumers may pay less when they receive advice through automated tools; 2) a wider range of consumers may have access to advice through automated tools; and 3) consumers may receive more consistent advice when they use automated tools.

18 The ESAs are: the European Banking Authority (EBA), European Insurance and Occupational Pensions Authority (EIOPA), and the European Securities and Markets Authority (ESMA).

19 Joint Committee Discussion Paper on Automation in Financial Advice, JC 2015 080, December 4, 2015.

Thematic Review by FINRA of Digital Advice

In 2015, FINRA initiated a thematic review of digital investment advice tools and in March, 2016, it published the results of this review in its *Report on Digital Investment Advice*. This report presented effective practices related to digital investment advice, defined to include both client - and advisor - facing tools. Topics covered include technology management, portfolio development and conflicts of interest mitigation as well as portfolio rebalancing.

The report notes the central role that algorithms play in automated advice tools and identified principles and effective practices, including testing the output of the algorithms to assess whether it conforms to a firm's expectations and testing the output of the tool on a regular basis to ensure that it is performing as expected.

The report also underscores the importance of customer profiling functionality in automated tools and identified a variety of effective practices in this regard, including identifying the key elements of information necessary to profile a customer accurately and assessing both a customers' risk capacity and risk willingness.

The construction of portfolios, FINRA noted, is another key function of automated advice tools, but one that can also raise conflict of interest concerns. FINRA identified effective practices with respect to portfolio construction, including: monitoring pre-packaged portfolios to assess whether their performance and risk characteristics, such as volatility, are appropriate for the type of investors to which they are offered; and identifying and mitigating conflicts of interest that may result from including particular securities in a portfolio.

Finally, the majority of the client-facing automated advice tools FINRA explored offered customers automatic account rebalancing (either for a fee or, for accounts above a certain size, no additional charge). FINRA identified effective practices relative to rebalancing, including explicitly establishing customer intent that automatic rebalancing should occur and disclosing to customers how the rebalancing works, including the triggers for rebalancing (e.g., drift from target allocation).

Review of the UK Financial Advice Market

In March 2016, the FCA and HM Treasury (HMT or Treasury) published a report, the *Financial Advice Market Review: Final Report* (FAMR), on their review of the accessibility and affordability of financial advice and guidance to everyone at all stages of his/her life.[20]

[20] As used in the FAMR, "advice" refers to *regulated financial advice* defined as advice relating to a specific investment given to a person as an investor (or potential investor), on the merits of his/her buying, selling, subscribing for, or underwriting the specific investment. In contrast, "guidance" refers to providing information, generic advice, and/or a general recommendation supporting a customer's making his/her own investment decisions but does not involve a personal recommendation.

Several elements of the FAMR are directly relevant to discussions regarding automated advice.

Broadly speaking, the FAMR concluded that a significant lowering of the cost and accessibility barriers to both advice and guidance, could be achieved, in part, by: promoting development of mass-market automated advice business models; making it easier for individuals to aggregate and share financial information with professional advisors; and encouraging employers to support their employees' efforts to take charge of their finances.

The report recommended, among other things, clarifications as to what constitutes general information and what constitutes advice in an automated context and further developing the concept of streamlined advice. In addition, the report recommended the establishment of a specialized Advice Unit within the FCA to work proactively with interested firms on compliance issues and best practices to ensure adequate consumer safeguards without stifling greater use of technology in advice development or delivery.

Creation of FinTech Team/Units and Automated Advice

Twelve regulators (AFM, AMF, AMF/Quebec, ASIC, BaFin, CVM, FCA, FINRA, HKSFC, JFSA, MAS, OSC) have established an organizational unit or team to focus specifically on monitoring and facilitating the development of FinTech companies, which includes those offering automated advice. These units generally have as an objective facilitating financial innovation by assisting FinTech start-ups — which are typically unfamiliar with financial regulation — in understanding the regulatory framework and authorization process. ASIC's and the FCA's Innovation Hubs have already assisted a number of automated advice startups requesting assistance. The dedicated group established by HKSFC in 2016 is planning, among other things, to "facilitate the FinTech community's understanding of the current regulatory regime". The AFM's newly established Innovation and FinTech Program will "accommodate innovative players by addressing problems and reducing unnecessary barriers." MAS, which has had a FinTech and Innovations Group since August 2015, in cooperation with the National Research Foundation, established a FinTech office in May 2016, which will be a "one-stop virtual entity for all FinTech matters that will promote Singapore as a FinTech Hub". In October 2016, the OSC initiated "OSC Launch Pad" which is a dedicated team that engages with the FinTech businesses such as online advisors, peer-to-peer lending platforms and crowdfunding portals and helps them navigate securities law requirements and accelerate time-to-market.

FINRA has formed a cross-departmental FinTech Advisory Committee and AMF Quebec a FinTech working group to pro-actively identify and prioritize regulatory issues and concerns related to FinTech. These groups will also analyze the current regulatory framework in their respective jurisdictions to determine whether it is sufficient to address these concerns and develop regulatory responses when it is not.

The FCA's Innovation Hub will go a step further with respect to automated advice by establishing an Advice Unit that will provide support tools and enable firms to evaluate their models as a way to contribute to addressing the advice gap.

4. Conclusions

According to analysis by the Aite Group, global spending on digital wealth management initiatives will triple, rising from $4 billion in 2015 to $12 billion by 2019.[21] Consequently, the continued development of automated investment advice tools merits ongoing monitoring to understand its impact on the provision of investment advice to retail clients. It seems likely that technology tools will affect most if not all elements of the advice value chain, including customer profiling, asset allocation, portfolio selection, trade execution, portfolio rebalancing, tax-loss harvesting and portfolio analysis.

Key results and considerations from the 2016 update related to automated advice include:

- *Continued Growth*: The market for automated investment advice has continued to grow since the 2014 survey. Growth is global with intermediaries using tools to attract and retain a broader client base. This increase is due primarily to expanding activity (deepening) in jurisdictions where automated advice was already being provided in 2014. There has also been, however, some broadening of automated advice activity into jurisdictions where it had not previously been present (Brazil, Mexico) or allowed (Korea).
- *Relevant Metrics*: With that said, regulators generally have very limited direct data on or knowledge about the users of automated advice tools, the number of tool providers and assets managed through such tools. This is primarily due to the fact that with the exception of Canada, firms that are already registered/authorized to provide advice do not have to file a notification of change to their business activities with the regulator before beginning to provide automated advice.
- *Products Recommended*: As of Q1 2016, ETFs and investment funds remained the most common investment products covered by providers of automated advice although some regulators note the emergence of new and potentially higher-risk products and/or investment strategies. Regulators' responses show that regulatory policy, as well as business considerations, can widen or narrow the scope of products recommended by automated advice platforms. If automated advice tools begin to offer more complex and/or speculative products, regulators and/or firms may need to take additional regulatory measures to protect investors.
- *Definitional Concerns*: Ambiguity persists about when the output of an automated tool crosses the threshold of general investment-related information to more customer-specific advice/recommendations. It would be helpful important to clarify

[21] Aite Group, *Wealth Management Incumbents' Digital Strategies*, Sophie Louvel Schmitt; November 2015; p. 4.

and communicate this threshold to avoid consumer misunderstandings, although defining when the advice threshold is crossed may involve analysis of complex sets of facts and circumstances. Firms should have a clear understanding and assess whether the provision of such tools or products to the client constitutes advice or a specific recommendation. Differences in defining when advice/recommendations are made could also lead to differing regulation of some competing firms offering automated advice in multiple jurisdictions. For example, some firms may gain a competitive advantage by limiting their offering of automated advice tools to jurisdictions having less stringent regulatory requirements in this area.

- *Range of Advice/Type of Advice*: To date, most automated advice tools provide focused investment advice and portfolio management as opposed to overall financial planning. These tools may evolve to provide holistic financial planning, as they have begun to in several jurisdictions. In some jurisdictions, this will likely raise questions regarding the standard of care required for such advice.
- *Inappropriate Advice in Mirror Trading/Guru Trading Scenarios*: Two regulators in particular are very concerned about the operation of OTC derivatives (forex, CFDs, binary options) trading platforms where the sponsor (a licensed or authorized intermediary) encourages clients to mirror the trades of a so-called expert or guru trader. The products sold on these platforms are complex and highly speculative, which would make them suitable for only a small number of very sophisticated clients. In many cases however, they are marketed to unsophisticated retail investors using aggressive marketing tactics. In some cases the so-called "experts," who may or may not have any bona fide expertise, are often clients of the firm who actively trade derivative products for their own account and receive a split of the firm's commissions generated by the clients that mirror their trades. Assigning liability for inappropriate advice under this scenario is also a concern.
- *Supervisory Updates*: Regulators are keeping pace and evolving their supervisory techniques as new technology changes/expands the possibilities for advice delivery, including expansion to complex products. A number of regulators are assessing, for example, the degree of review they should apply to automated investment advice tools' algorithms.
- *Cybersecurity*: As cybersecurity threats continue to proliferate, online automated investment advice tools may be the target of attacks, which could lead to a loss of private information, assets, or funds.
- *Third-Party Tools*: As firms acquire or use third-party automated advice tools, questions arise as to what sort of initial and ongoing reviews firms should conduct on those tools, which may be impacted by whether the tool is provided by a regulated or non-regulated entity. There may be ambiguity as to which entity(ies) liability attaches if the tool produces bad consumer outcomes. Regulators are dealing with these issues while keeping in mind that this trend may offer new entrants a cost-effective means to launch online advisory services in competition with more established firms.
- *Link to FinTech*: In a number of jurisdictions where automated advice is most prevalent, regulators are considering or have established dedicated FinTech units or

have put in specific structures such as “regulatory sandboxes” to engage with firms that deliver automated services. In a number of jurisdictions, these units provide guidance on regulatory compliance and testing. In addition to facilitating the development of financial technology, FinTech units may be critical to developing regulators’ capacity to determine policy and monitor and regulate firms bringing advanced technology to advice delivery and other facets of investor services.

Appendix I

Questions for the Automated Advice Update[22]

1. Has your jurisdiction experienced an increase in the use of automated advice tools[23] by firms/platforms in your market since it responded to the survey (November 2013)? Has the growth been in the use of automated advice tools by intermediaries, by fully automated advice platforms, or both? To what, if anything, do you attribute this growth? Conversely, if there has not been an increase in the use of automated tools, do you attribute this to any particular factors?
2. Is your jurisdiction able to monitor the number of firms providing automated advice and/or track the growth in the level of assets under management by those firms (i.e., do firms that are already authorized have to file with the regulator to provide automated advice)?
3. Has any firm (s) in your jurisdiction begun offering advice solely online? Has any firm (s) begun offering a hybrid advice product-online (i.e. automated advice supplemented by human interventions at key junctures)? If so, what kind of human intervention is being provided? Are these individuals registered with/authorized by an appropriate regulatory body and, if so, in what capacity? Approximately how many firms of each kind are operating in your market today?
4. Are automated advice platforms providing advice or portfolio management services, or both? If advice, what type of advice are they providing (e.g., holistic or full advice or a more limited form of advice)? Please describe what these or equivalent terms for the various types of advice mean in your jurisdiction.
5. Are automated advice platforms providing trade execution functions? If so, has your jurisdiction experienced an increase in the use of automated advice tools that also provide automated trade execution in your market since November 2013?
6. What kinds of investment products are offered on automated advice platforms (both pure and hybrid automated advice platforms) and which are most commonly offered?
7. If known, what is the typical profile of investors using these platforms? Younger people beginning to invest? Older people or retirees or others that cannot afford or do not want to pay the cost of traditional advice? A mix? To what do you attribute any demographic shift that you have identified as users of these platforms?
8. Does your jurisdiction have any regulatory concerns unique to the use of automated advice tools? If so, what are they? (See Attachment 1 for an illustrative list of concerns).
9. Do your jurisdiction's existing rules governing advice adequately address concerns related to automated advice tools? Has your jurisdiction put in place or is it

[22] Please answer questions 1-7 to the extent you have information in your jurisdiction, as we are not planning to reissue the firm surveys.

[23] Automated advice tools are interactive tools that either broadly or specifically produced recommendations for asset allocation, an investment strategy, or specific financial instruments.

contemplating putting in place any additional or tailored regulatory measures (i.e., over and above those stated in the July 2014 report), specifically aimed at addressing concerns related to automated advice?

10. Since the publication of the July 2014 Report, has your agency conducted, or is it currently planning to conduct, any thematic work on automated-advice providers? If yes, please describe the regulatory initiative(s) and, as applicable, provide a brief summary of your findings and observations.

Attachment 1: Illustrative List of Potential Regulatory Concerns[24]

1. Execution only platforms are beginning to cross over and provide advice, but are not adequately vetting their clients and taking into account the suitability of the automated advice;
2. Investors do not know or understand the limitations of automated advice (i.e., that automated advice may not consider the full financial and personal circumstances of the client, or that they may only provide advice on certain asset class e.g., exchange traded funds);
3. Investors do not always know whether they are receiving advice or not nor what standard of care is required;
4. Inadequate disclosure (including any advertising) to clients accessing automated advice;
5. Inadequate training and competency of the firm that develops the algorithm (in-house and external);
6. Inadequate training, competence and supervision of the staff that intervene at certain junctures of the process;
7. Inadequate supervision of the provision of automated advice when the algorithm provides the advice;
8. The algorithms embedded in the tools (e.g., online know your customer questionnaires, risk analysis tools) are not robust enough to generate suitable recommendations;
9. Lack of sufficient monitoring and testing of algorithms by firms (both initially and on an on-going basis);
10. Potential agreements or links between the automated advice firm and product providers or other third parties that pose conflicts of interest;
11. Heightened cybersecurity concerns related to automated advice, which may be exacerbated with the use of cloud computing (e.g., integrity of data/algorithms; theft of clients' personal information; theft of clients' assets);
12. Limited ability on the part of some regulators to become aware when firms that are already authorized/registered are moving into the automated advice space because firms are not required to file this change with the regulator;

[24] This list of concerns is illustrative. Please feel free to comment on these or any other concerns identified.

13. Other issues identified in your jurisdiction, e.g., by professional indemnity insurers in the financial services industry, external dispute resolution providers, or other third parties in your jurisdiction;
14. Concerns regarding the financial viability of such firms (e.g., a firm's level of capitalization) and how investors would be notified and protected in the event a firm ceases operations;
15. Difficulty that the regulator may have in examining the strategies used by these firms due to the potential complexity of an algorithm's mechanics and/or the website's infrastructure.

Appendix II

List of Respondents

	COUNTRY	REGULATOR	ACRONYM
1	Australia	Australian Securities and Investments Commission	ASIC
2	Brazil	Comissão de Valores Mobiliários	CVM
3	Canada	Autorité des marchés financiers (Québec) Ontario Securities Commission	AMF/OSC
4	France	Autorité des marchés financiers (France)	AMF
5	Germany	Bundesanstalt für Finanzdienstleistungsaufsicht	BaFin
6	Hong Kong	Securities and Futures Commission	HKSFC
7	Indonesia	Financial Services Authority	IFSA
8	Japan	Financial Services Agency	JFSA
9	Korea	Financial Supervisory Service	KFSS
10	Mexico	Comisión Nacional Bancaria y de Valores	CNBV
11	Netherlands	Autoriteit Financiële Markten	AFM
12	Romania	Financial Supervisory Authority	RFSA
13	Singapore	Monetary Authority of Singapore	MAS
14	Spain	Comisión Nacional del Mercado de Valores	CNMV
15	Turkey	Capital Markets Board	CMB
16	United Kingdom	Financial Conduct Authority	FCA
17	United States	Financial Industry Regulatory Authority Securities and Exchange Commission	FINRA/SEC
18	United States	Commodity Futures Trading Commission	CFTC

Appendix III

Regulatory Guidance

Australian Securities and Investments Commission, *Consultation Paper 254 Regulating digital financial advice* and *Draft Regulatory Guide 000 Providing digital financial product advice to retail clients*, March 21, 2016.

In March 2016, ASIC published for comment a consultation paper and draft regulatory guide for firms providing (or seeking to provide) digital financial product advice to retail customers. This initiative was characterized as part of ASIC's commitment to encourage innovation that may benefit consumers. While Australia's regulatory framework governing advice delivery is technology neutral, certain elements of digital advice require interpretive guidance for firms to comply with existing requirements on organizational competence and delivering advice that meets the best-interests-of-the-customer standard. For purposes of this consultation and draft guide, "digital advice" (which subsumes "robo-advice" and "automated advice") means the provision of automated financial product advice using algorithms and technology, and without the direct involvement of a human advisor. The advice given may be general or personal, and range from narrow to comprehensive product advice.

On August 30, 2016 ASIC published Regulatory Guide 255 Providing digital financial product advice to retail clients based on feedback to the consultation.

Regulatory Guide 255

The Guide is written as a primer that (1) explains the applicable legal requirements for the provision of digital financial product advice; and (2) offers several applied examples to assist firms in understanding and complying with their obligations. It also addresses pragmatic questions about a variety of issues such as the scope of general obligations applicable to digital licensees; the outsourcing of functions that relate to a firm's license; the meaning of "adequate resources;" cyber risks and information security; providing scaled advice (i.e., personal advice that is limited in scope) that satisfies the-best-interests-of-the-customer standard; and providing compensation arrangements to offset client losses due to a breach of the firm's legal obligations.

Applying the organizational competence standard to digital advice providers[25]

When the delivery of digital financial product advice is based entirely on the use of technology, ASIC requires each firm that is licensed to deliver digital advice to have at least

[25] *Digital Advice Provider* refers to the person that provides personal advice through a computer program, i.e., a corporate licensee or its authorized representative.

one responsible manager that meets the minimum training and competence standards for advisors. This individual is responsible for the firm - as an Australian Financial Services (AFS) licensee- satisfying its obligation to maintain its competence in an area covered by its license (delivery of digital financial product advice). The manager is also responsible for ensuring that the firm's representatives are adequately trained and competent to support the service and its consumers. In sum, this manager is responsible for the firm's day-to-day decisions and ongoing activities for delivering financial product advice through automated means.[26]

Monitoring and testing of algorithms used by digital advice providers

The guidance envisions a robust program of monitoring and testing the digital financial product advice being delivered by licensees. This is an important function for quality control and investor protection purposes. Clearly, if an error or problem exists within an algorithm, a large number of customers may receive poor quality and/or unsuitable financial advice. Therefore, to meet its general obligations as an AFS licensee, ASIC has stated that the digital firm must regularly monitor and test the algorithms underlying delivery of automated advice to consumers.

In this regard, ASIC has listed a number of specific expectations including:

- Creating and maintaining system design documentation that sets out the purpose, scope, and design of the algorithms;
- Creating and maintaining information on test strategies, test results, and correction of deficiencies found;
- Having appropriate processes for managing changes to an algorithm, including procedures to prevent unauthorized access to the algorithms;
- Having controls and processes to suspend the provision of advice if an error or defect is detected with an algorithm; and
- Having adequate human and technological resources to monitor and supervise the performance of algorithms, including the capacity to review the advice being provided.

Similarly, ASIC has listed several specific expectations regarding quality control measures respecting the advice being delivered, including:

- Collecting and reviewing a sample of digital advice for review by a human advisor for compliance with legal requirements;
- Reviewers should assess information in the client files plus any other information needed to form an objective view of the quality of the advice delivered;

[26] It should be noted that the Australian Parliament is considering draft legislation that would set higher training, competence, and new ethical standards for persons who provide personal advice on financial products (excluding basic banking products, general and consumer credit insurance). If passed, this legislation would affect the requirements of managers responsible for a licensee's digital delivery of financial product advice.

- Algorithms should be regularly tested for quality purposes through periodic and random reviews;
- Where problems are detected with an algorithm, it should be corrected promptly; until it is corrected, the algorithm should not be used to generate any more advice; and
- Digital advice providers are responsible for any defective advice that is delivered, and therefore need procedures to identify and contact investors that received defective advice. They are also expected to remediate any losses incurred by any clients that received such advice.

Canadian Securities Administrators, *Staff Notice 31-342—Guidance for Portfolio Managers Regarding Online Advice*, September 24, 2015

The response of the Canadian regulators (jointly reported to IOSCO by the provincial securities commissions of Ontario and Quebec) referred to Staff Notice 31-342—*Guidance for Portfolio Managers Regarding Online Advice* (the Guidance), which was issued by the Canadian Securities Administrators (CSA) on September 24, 2015. The Guidance provides an overview of the operations of online advisors in Canada and focuses on the regulatory obligations of registered portfolio managers (PMs) and advising representatives (ARs) that want to provide retail investors with discretionary investment management services through an interactive website.

Canadian online advisors are not "robo advisors" providing fully automated advice, rather they provide hybrid services to their clients by utilizing an online platform for efficiency, while the ARs remain actively involved in and responsible for the "onboarding" of new clients and the investment decision making process, including KYC and suitability requirements. Clients' managed accounts are invested in relatively simple products such as ETFs and low cost mutual funds.

The registration and ongoing conduct requirements (including KYC and suitability obligations) as set out in NI 31-103 are *technology neutral*, and the rules are the same for PMs operating by using an online advice platform.[27] In a hybrid model, a firm uses an interactive website to collect KYC information through an online questionnaire. The Guidance specifies that an AR is responsible for: 1) ensuring that adequate KYC information has been gathered to support the suitability determination and 2) reviewing and assessing whether the recommended portfolio is in fact suitable for the client. In most cases, the AR will contact the client before completing the KYC process. In some cases, the AR will contact the client to clarify or correct information the client had submitted, e.g., inconsistency in responses. The client will always have the option to contact the AR if he/she needs clarification about the information being sought via the questionnaire. Contacts may be made by telephone, video link, e-mail or video chat.

The Guidance also highlights that the KYC process of an online advisor must amount to a meaningful discussion with the client or prospective client, and that a well-designed online questionnaire and system will include, among other things, the following:

- Use of behavioral questions to establish risk tolerance and obtain other KYC information;
- A function that prevents a client from progressing further until all questions have been answered;

[27] The Guidance also cross-references CSA Staff Notice 31-366, Guidance for Portfolio Managers, Exempt Market Dealers and Other Registrants on the Know-Your-Client, Know-Your-Product, and Suitability Obligations. The Notice reiterates that these requirements are the same regardless of whether a PM uses a traditional business model or an online platform.

- A test for inconsistencies in answers that will not allow the questionnaire's completion until they are resolved;
- A flag for inconsistencies or conflicts in a client's responses that would trigger a call from the AR to the client;
- Offer educational information about the terms and concepts involved;
- Provide a reminder that an AR is available to help throughout the process; and
- With respect to existing clients, prompt them to provide at least annual updates of any material change in their circumstances (e.g., marriage, retirement, or loss of employment).

After completing the KYC process, the PM's software will produce a preliminary determination of the client's profile and assign a model portfolio that is suitable for the client. The Guidance states that the AR remains responsible for reviewing both the client profile and the recommended portfolio to ensure that it is in fact suitable for the particular client. Once the proposed recommendation is reviewed and approved by the AR, the client's trades will be executed through an account opened for the client at an investment dealer that is a member of the Investment Industry Regulatory Organization of Canada (IIROC). Thereafter, the PM is required to monitor the client's investments to ensure that they remain consistent with the approved model portfolio; this includes rebalancing the portfolio periodically to align with the specified asset allocation mix.

To date, online advisors have recommended portfolios consisting of unleveraged ETFs, low cost mutual funds, or other redeemable investment funds or cash equivalents. Leveraged strategies and short selling have not been recommended.

The Guidance also reminds firms that are planning to change their business models to provide online advice that they should notify CSA staff at an early stage and submit the appropriate filings. CSA staff will ask for substantial documentation including the proposed online KYC questionnaire, investor profiles, model portfolios, and details of related processes for a due diligence review. CSA staff will also consider whether terms and conditions will be appropriate for different online models as they evolve over time.

Appendix IV

Thematic Reviews

European Supervisory Authorities, *Joint Committee Discussion Paper on Automation in Financial Advice, JC 2015 080*, December 4, 2015

In December 2015, the Joint Committee of the European Supervisory Authorities (ESAs)[28] (Joint Committee or Committee) published for comment a wide-ranging discussion paper based on the observed increase in digitalization of financial services across the banking, insurance/pensions and securities sectors. Conceptually, the discussion points and questions posed are organized around four elements with implications for regulatory policy making:

- The principal characteristics and outputs of automated advice tools currently found in the respective financial sectors the ESA's regulate;
- The range of business models among firms that offer such tools;
- The potential benefits and risks to consumers and financial institutions from such tools; and
- The evolutionary path(s) that increased digitalization of financial advice is likely to take across the EU's banking, insurance/pensions, and securities sectors.

The Joint Committee's discussion paper provides background information consisting of a high-level assessment of current circumstances across the financial sectors that the ESA's oversee, with the objective of inviting feedback on that assessment from a broad range of stakeholders. The Committee took care to underscore that "advice" should be understood in the word's common meaning rather than a narrowly-defined term or legal concept. In this regard, the Committee wants to understand the end-consumer's perception of what constitutes "advice" for purposes of potential policymaking. Therefore, the Committee emphasized that its primary focus is on the phenomenon of automation of financial advice, and not the provision of advice itself. Nonetheless, there is a clear emphasis on the facts/circumstances surrounding the use of automated tools to deliver advice.

Below are some examples of the potential risks to consumers highlighted for comment by the Committee:

- Consumers may make unsuitable decisions as a result of lack of information and have reduced opportunity to fill knowledge gaps or seek clarifications from help staff during the process of inputting information that will drive the delivery of automated advice;
- Consumers may not be aware of the how the information they input is processed by the intermediary's algorithm, e.g., whether the consumer specifies one or several financial objectives that will drive the nature of the advice that is ultimately provided;

[28] The ESAs are the European Banking Authority (EBA), European Insurance and Occupational Pensions Authority (EIOPA), and the European Securities and Markets Authority (ESMA).

- Consumers may be unaware of the assumptions/limitations embodied in the tool's algorithm, leading to the possibility of misinterpretation of the advice or unsuitable advice;
- Consumers may not understand that a tool that appears to offer no-cost, unbiased advice may conceal a cross-subsidization scenario between the advice given and the product/service ultimately chosen by the customer based on the advice;
- Consumers may perceive the final output received as "advice," when it is not in-fact tailored to their specific situation and needs; and
- Fragmentation of the advice-delivery process can occur when different tools produced by different parties are combined; for example, one tool may be used collect personal information while another is used to generate advice based on collected information. The fact that different parties created the tools may not be disclosed to the consumer up front; hence, this fragmentation may make it difficult for consumers to direct follow-up questions or complaints to the appropriate party for redress. Allocation of legal responsibility for delivery of unsuitable advice can also be more difficult to establish in these circumstances.

Additionally, the Committee cited the following as potential benefits:

- Consumers may pay less for advice provided by automated tools;
- A wider range of consumers may have access to advice through automated tools; and
- Consumers may receive more consistent advice by using automated tools;

The deadline for submitting comments on the Joint Committee's report was March 4, 2016. At present, the comments received are being analyzed for development of the concluding report.

Financial Conduct Authority and HM Treasury, *Financial Advice Market Review—Final Report*, March 14, 2016

In March 2016, the UK Financial Conduct Authority (FCA) and HM Treasury (HMT or Treasury) published a final report on a review, begun in August 2015, of the accessibility and affordability of financial advice and guidance to everyone at all stages of their life (Final Report or Report).[29] Titled the *Financial Advice Market Review* (FAMR), this effort was grounded on the recognition of an increasing need for individuals to take responsibility for their financial future for several reasons, in light of recent pension reforms and demographic changes in the UK.[30] The review also included an assessment of the supply and demand sides of the market for financial advice, identification of barriers to consumers seeking access to advice, and remedial measures to address those barriers.

Broadly speaking, the Final Report concluded that a significant lowering of the affordability and accessibility barriers to both advice and guidance, could be achieved by: supporting the development of mass-market automated advice business models; making it easier for individuals to aggregate their financial information and share it with professional advisors; and encouraging employers to support their employees' efforts to manage their own finances. Finally, the Report recommended various consultations to amend or clarify existing regulations surrounding the delivery of regulated advice and guidance.

Advancing the mass-market automated advice models

To achieve this objective, the FCA has committed to form a dedicated team -the Advice Unit- to assist firms wanting to launch automated advice models aimed at the mass market of end-users. Early engagement with interested firms is believed critical to enable them to launch compliant business models in the first place, thereby expanding advice outlets to more consumers quickly. It is envisioned that the Advice Unit would provide tailored support, on a case-by-case basis, with respect to the regulatory implications and consumer outcomes of their automated models.

In reference to the Advice Unit, the Report recommends that the FCA's facilitation of automated advice include the creation of a tool kit for interested firms that would provide:

- Best practices on methods for testing and evaluating automated advice models; it is expected that these practices would evolve over time as more models are launched (going forward, this material would be made available to any interested firms seeking to provide automated advice);

[29] As used in the Final Report, "advice" refers to *regulated financial advice* defined as advice relating to a specific investment given to a person as an investor (or potential investor), on the merits of his/her buying, selling, subscribing for, or underwriting the specific investment. In contrast, "guidance" refers to providing information, generic advice, and/or a general recommendation supporting a customer's making his/her own investment decisions but does not involve a personal recommendation.

[30] The Review generated 268 responses from a wide range of stakeholders including advisers, consumer groups, banks, insurers, and individuals.

- A customized guide for firms applying to provide automated advice to help prepare them for the authorization process;
- Standardized testing scenarios that firms could use to assess the effectiveness of their models; and additionally,
- The FCA's provision of individualized guidance and support to firms with propositions that could have a high potential impact on the advice gap, and such support might include:
    - giving firms access and ongoing feedback on the regulatory implications and customer outcomes as they develop and test their models;
    - identifying concerns and risks from a customer's perspective following standardized testing;
    - working with firms in developing specific tests for assessing and reducing these risks;
    - publishing anonymized reports on what has been learned from standardized tests and best practices; and
    - clarifying the firms' obligations are during the fact find process and how they may be able to rely on standardized information from third parties.

Clarifying the definitions of regulated advice vs. guidance

The Report recommends that the FCA initiate a consultation proposing new guidance that would encourage firms offering services that help consumers to make their own investment decisions without making a personal recommendation. This would take the form of a series of case studies that highlight the principal elements that firms must consider when developing basic services to assist consumers' decision making.

The Report also tasked the FCA with providing firms with new guidance, by means of case studies, on the delivery of streamlined advice through automated as well as conventional means.[31] This recommendation derives from the observation that consumers tend to seek advice at trigger points in their lives (e.g., approaching retirement), or when they have a specific need (e.g., supplemental income). Various stakeholders contended that existing guidance in this area needs to be simplified to encourage firms to address the specific needs that commonly arise over a customer's lifetime. The Report suggests that the proposed case studies focus on the following factors to encourage development of streamlined advice services:

- The core elements of a personal recommendation that a firm's streamlined services need to include;
- Clarifying a firm's ability to narrow its suitability process to exclude factors outside the immediate scope of the advice being sought; and

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31 *Streamlined advice* is a collective term referring to advisory services that provide a personal recommendation that is limited to one or more of a customer's specific needs. Consequently, streamlined advice does not entail an analysis of a customer's circumstances that are not directly relevant to those needs.

- Highlighting the implications for the fact-finding, suitability assessment and customer disclosure components underlying the streamlined advice process.

Concerns about certain liabilities and consumer protection

Several stakeholders observed that the workplace can play an important role in supporting sound financial-decision making by employees. Automatic enrollment in workplace pensions makes employers a logical point of contact for workers approaching retirement. While many considered this to be a positive opportunity to assist employees in gaining useful information to make their own decisions, several stakeholders suggested that some employers were reluctant to become more proactive because of concerns about potential liabilities. To address this concern, the Report recommended that the FCA and The Pensions Regulator (TPR) work together to issue a new factsheet outlining the sorts of help that employers and pension trustees can provide on financial matters without becoming subject to regulation. [32]

Another liability issue was raised by the advisory community which noted that the annual levies collected from firms to finance the UK's Financial Services Compensation Scheme (FSCS) could be a cost barrier to firms otherwise willing to provide affordable advice to a wide range of potential customers.[33] In response, the Report recommended that the FCA should consider, as part of its regular review of the FSCS funding, alternatives such as risk-based levies on financial firms, further use of the FSCS's credit facility, and other measures that might reduce annual costs to firms without undermining the FSCS's ability to pay valid consumer claims.

The advisory community also requested consideration of an absolute time period of 15 years after which consumers could not complain about advice received. Without such a period, firms delivering advice have an open-ended liability that could emerge if, for example, the advice given in good faith at one point in time is later claimed to be unsuitable (or not in the client's best interest). The 15-year limitation proposal was considered and rejected based on the reasoning that faulty advice to purchase long-term products can manifest losses years after the advice was given and acted upon. Instead, the Report suggested that the FCA and Treasury consider ongoing trends and the impact of the Financial Ombudsman Service's complaints data relating to advice on long-term products.

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32 A separate working group was tasked to work with employers to develop a guide on the top ten ways to support employees' financial health. Examples given include referring employees to publicly available guidance, directories of financial advisers, and providing tools to help employees understand their finances.

33 Funded by the financial services industry, FSCS is the last resort for customers of authorized financial services firms who have incurred losses due to a firm's breach of applicable laws or regulations. For example, it can compensate customers if they were given bad advice where the firm has become insolvent or unable to pay valid civil claims against it. Most authorized firms are obliged to pay an annual levy calculated to fund the FSCS operating costs and compensation payments.

Financial Industry Regulatory Authority, *Report on Digital Investment Advice*, March 15, 2016

In March, 2016, FINRA published its *Report on Digital Investment Advice*. Topics covered include technology management, portfolio development and conflicts of interest mitigation. The FINRA report addressed both advisor- and client-facing tools. With respect to the latter, FINRA defined a digital investment advice tool to be one that typically performs the following functions: customer profiling, asset allocation, portfolio selection, trade execution, portfolio rebalancing and tax loss harvesting. The report was developed based on discussions with financial services firms that provide or use client- and advisor-facing digital investment advice tools, vendors, foreign securities regulators, industry analysts and FINRA's own experience.

The report noted the central role that algorithms play in automated advice tools and identified the following principles and effective practices with respect to the governance and supervision of those algorithms. Firms should conduct initial reviews that:

- Assess whether the methodology a tool uses, including any related assumptions, is well-suited to the task;
- Understand the data inputs that will be used; and
- Test the output to assess whether it conforms with a firm's expectations.

On an ongoing basis, firms should:

- Assess whether the models a tool uses remain appropriate as market and other conditions evolve;
- Test the output of the tool on a regular basis to ensure that it is performing as intended; and
- Identify individuals who are responsible for supervising the tool.

FINRA noted that many automated investment tools profile a customer and then match that customer with a pre-packaged portfolio of securities assigned to investors fitting that profile. In this, as in a traditional human-advised relationship, a sound understanding of customer needs is paramount. FINRA identified the following effective practices with respect to customer profiling, and these were:

- Identifying the key elements of information necessary to profile a customer accurately;
- Assessing both a customers' risk capacity and risk willingness;
- Resolving contradictory or inconsistent responses in a customer profiling questionnaire;
- Assessing whether investing (as opposed to saving or paying off debt) is appropriate for an individual;
- Contacting customers periodically to determine if their profile has changed; and
- Establishing appropriate governance and supervisory mechanisms for the customer profiling tool.

The firms with which FINRA spoke typically used an investment policy committee to determine the characteristics of a portfolio that would be suitable for a given class of investor and who also passed judgment on the specific securities to include in that portfolio.

The construction of portfolios, FINRA noted, may raise concerns about conflicts of interest, for example through the sale of proprietary products or products from an affiliate. FINRA identified the following effective practices with respect to portfolio construction, firms should:

- Determine the characteristics—e.g., return, diversification, credit risk and liquidity risk—of a portfolio for a given investor profile;
- Establish criteria for including securities in the firm's portfolios (these can include, for example, fees, index tracking error, liquidity risk and credit risk);
- Select the securities that are appropriate for each portfolio (or if this is done by an algorithm, oversee the development and implementation of that algorithm as discussed above);
- Monitor pre-packaged portfolios to assess whether their performance and risk characteristics, such as volatility, are appropriate for the type of investors to which they are offered; and
- Identify and mitigate conflicts of interest that may result from including particular securities in a portfolio.

The review mechanism, FINRA noted, should include staff who are independent of the business, and who can advise on both overall portfolio investment strategy and the selection of individual securities.

The majority of the client-facing automated advice tools FINRA explored offered customers automatic account rebalancing (either for a fee or, for accounts above a certain size, no additional charge). FINRA observed firms using several different types of triggers to initiate rebalancing: a drift threshold of greater than 3 percent from the target asset allocation, for example.

FINRA identified the following effective practices relative to rebalancing:

- explicitly establish customer intent that automatic rebalancing should occur;
- apprise the customer of the potential cost and tax implications of the rebalancing;
- disclose to customers how the rebalancing works, including the triggers for rebalancing (e.g., drift from target allocation);
- develop policies and procedures that define how the automated advice tool will act in the event of a major market movement; and
- develop methods that minimize the tax impact of rebalancing.