INVESTMENT FUND DISTRIBUTION WHITE PAPER

HOW WILL INNOVATIVE THINKING IN FUND DISTRIBUTION CREATE COMPETITIVE ADVANTAGE?

February 2017
“It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.”

Charles Darwin
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Foreword: Embracing change to create a competitive advantage

Since its debut, the fund industry has undergone an uninterrupted period of change: at the start, it had to invigorate its own growth followed by seeking efficiencies and reducing risks by industrializing its operating model. Having navigated these early stages, the next challenges were all about globalizing its business while remaining true to its goals of responding to continuous new client demands and having to cope with an ever increasing and demanding regulatory agenda. Although one could wish for some level of stabilization to allow the industry to catch its breath, we all know that the pace of change will not decline and that the only certainty about the future is its unpredictability.

In other words, the need to adapt and evolve is a fact of day-to-day life, meaning that change management must become a standard business management practice and be integrated into regular BAU activities.

While investment fund assets worldwide have increased to €39.4 trillion at the end of September 2016,1 profitability margins for wealth management firms are still heavily under pressure. As such, staying one step ahead in the competitive landscape is a major challenge in this turbulent context where unknowns abound, where new types of clients are emerging who redefine interaction models and bring new demands, where new technology creates new opportunities but also threats, and where regulatory requirements create constraints and, to a certain extent, menaces.

One key issue is to be constantly one step ahead by selecting the right solution(s)—indeed, although the current plethora of innovative proposals may appear to be a potential gold mine, finding the right solution is almost like looking for a needle in the proverbial haystack.

Another practical issue is the time horizon of these innovative proposal offerings: how to distinguish those that will yield results today compared to those that have the potential of redefining the distant future?

This point is particularly relevant for the distribution of investment funds that today plays an essential role in the fund business landscape and is at the center of attention for regulators. The reasons thereof are the flagrant forces at play that are currently reshaping fund distribution and will continue to do so for years to come:

- The new generation of investors longing for more personalized interactions with asset managers, expecting to receive their assistance to evaluate their investments with peer groups, asking for socially responsible investments, and demanding to use online investment platforms
- Big Data and analytics to help make sense of the huge volume of data and to produce descriptive yet predictive analytics on investor behaviors, performance measurement, market intelligence, or risk metrics
- Regulation in the historical ecosystem is still evolving too quickly while the regulation of these innovative models is unfortunately lagging behind. In parallel, RegTech emerges as a technology-based solution to create efficiency and automation in the compliance and risk functions
- New technologies have emerged, directly and indirectly pressurising all players to question their service offerings and operating models: Blockchain, artificial intelligence, machine learning techniques, digital investment platforms, Peer-to-Peer (P2P) lending

1 Source: EFAMA Press Release, Q3 2016

While investment fund assets worldwide have increased to €39.4 trillion at the end of September 2016, profitability margins for wealth management firms are still heavily under pressure.
With all the technological, regulatory, and social dynamics that have come into play, tomorrow’s distribution will continue to be a specialist and complex topic but will also be radically different from that of today. The reasoning behind this white paper is, of course, not to provide you with the winning numbers for the next lottery draw, but because standing still is not an option, and it aims at exploring certain worthwhile opportunities today to possibly help you create competitive advantages for tomorrow:

1. Use RegTech to transform compliance and risk from support functions into business differentiators
2. Unleash the value of data make faster and more precise decisions
3. Accelerate business expansion through “smart-sourcing”
4. Set up an efficient robo advisory solution
5. Accelerate the transformation of investment management with open application programming interfaces

Four mega trends are impacting the fund distribution value chain

For their valuable contributions to this white paper, we would like to thank:

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We wish you an inspiring read and hope this publication will lead you to thought-provoking insights to help you shape the future of your organization.
The sheer volume and complexity of new and existing regulations have had the unintended consequence of encouraging financial service providers to focus on compliance rather than innovation. Regulations such as Packaged Retail and Insurance-based Investment Products (PRIIPs), the Payment Service Directive 2 (PSD2), the fifth Undertakings for Collective Investments in Transferable Securities Directive (UCITS V), the Markets in Financial Instruments Directive (MiFID), the fourth Anti Money Laundering Directive (AMLD IV), the Capital Requirements Directive and Capital Requirements Regulation (CRD and CRR), the European Market Infrastructure Regulation (EMIR), and the second Market Abuse Directive (MAD II) are just a few examples of the systemic shift in terms of compliance and risk, capital and liquidity requirements, and governance and supervision with which all investment management actors must comply.

In parallel, firms have been cautious to innovate due to the regulatory uncertainties underlying the development of new products and the deployment of pioneering technology. However, in the context of the ongoing digitalization of our day-to-day life and the consequential redefinition of the way we live and work being driven by technology, the last years have witnessed the emergence of promising and innovative companies targeting the regulatory environment to support efficient compliance management from an IT perspective—the so-called RegTech companies (RegTechs). Put simply, RegTechs offer solutions that use technology to solve compliance and regulatory issues.

Financial firms must embrace innovative solutions to face the heightened risk and compliance challenges

Diving a little more into the regulatory requirements, financial institutions are currently managing ever-changing regulations while being increasingly exposed to complex multi-jurisdictional facets. In practice, regulators now demand much more transparency—meaning an increasing amount of data needs to be produced by financial institutions to improve their vision of systemic risk and the behavior of different agents involved in the financial ecosystem. To gather, analyze, and compute all the required data, institutions make use of a variety of technology systems, but the truth is that much of this work still heavily relies on manual processes and interventions. It goes without saying that these processes are the main cost drivers for firms. As such, the greater demand for transparency and rigor has brought the role of technology to the forefront, leading companies to simply ask themselves the following question: how should a financial institution address compliance in a more efficient and less resource-consuming manner while improving the quality of the data reported to regulatory supervisory authorities?

Historically, financial institutions have had the choice of using large, well-known vendor systems or building an in-house solution. In selecting and implementing such technologies, different challenges arise. Firstly, the chosen solution must fit into the often complex and heterogeneous internal architectural IT environment of the company. Secondly, reporting and visualization tools are typically used on a very local level within different departments, and not always governed centrally. Finally, regulatory pressures require fast implementation, which often conflicts with financial firms’ development and

1. Using RegTech to transform compliance and risk from support functions into business differentiators
transformation calendars, thereby creating additional operational challenges. Once the technology has been selected, development and configuration needs to be done in a proprietary language while adapting the solution to dovetail into an already complex existing IT architecture, which in turn leads, among others, to high lead times. Add in high price tags and it is clear that an agile alternative is required.

Technological innovations continuously emerge, offering new risk and compliance solutions to help financial firms to comply and manage their risks at lower cost. Stepping out from the shadows into the light, regulatory technology (RegTech) solutions present themselves as being able to tackle several of the aforementioned issues by providing agility, speed, and data-driven outputs. These attributes are enabled through multiple emerging technologies. Generally, such solutions tend to be cloud-based, meaning that data is remotely maintained, managed and backed up. This provides enhanced flexibility through the ability to customize control over not only the access to but also the sharing of the data. In addition, simplified addition and removal of service features provides for enhanced performance and scalability while end-to-end data encryption provides the necessary security. Cost-wise, the cloud is especially interesting as it provides the ability to offer pay-as-you-go pricing.

Besides cloud features, a variety of RegTech solutions have advanced analytical and machine learning/artificial intelligence capabilities. Evidently, data is meaningless unless it is organized in a way that enables people to understand it, analyze it and ultimately make decisions and act upon them. As such, analytics is beginning to help the industry rapidly and automatically understand not just the explicit meaning of the regulation but also the implicit meaning or “nuance” that is so often the greatest challenge to digest and assess. Advanced analytics and assessment techniques can start to “learn” and support by accelerating the review of new and emerging regulation based on what has been seen previously and how that has been interpreted in the same way that neural networks have helped predict fraud or customer behavior. Intertwined with analytics is the use of artificial intelligence. This technology combined with in-depth learning capabilities may be used as a continuous monitoring capacity, providing close to real-time insights into the functioning of global markets, and identifying problems in advance rather than simply taking action after the fact.

Lastly, some RegTech solutions use Blockchain – a record or ledger, of digital events distributed between many different parties that collectively guarantee the scalability and integrity of the said ledger. It can only be updated by a majority consensus of the participants in the system. Once entered, the information can never be erased, only amended. Blockchain contain different types of information such as transactions but also smart contracts. Through the Blockchain’s near real-time settlement capability achieved through automation and global consensus, RegTech solutions can automate compliance aspects in cases such as identity management and transaction processing, settlement & reporting.
Main technology supporting RegTech solutions

**Cloud computing**
Cloud, open platforms and networks for sharing data, format standards, and common processes.

**Blockchain**
Technology allowing the creation and verification of transactions on a network instantaneously without a central authority. Used to track and speed up the transaction life cycle and cut costs while lowering the risk of fraud.

**Application program interface**
Software solution that allows off-the-shelf RegTech tools to interact directly with regulatory reporting systems.

**Machine learning**
Technology that learns from data and allows automatic reassessment and refinement of processes in reaction to input from users.

**Big Data**
Real-time processing tools/techniques of Big Data to create value out of the massive amount of available heterogeneous and textual data.

**Data mining and analytics**
Use of machine learning and behavioral analysis that offers the potential of powerful data mining and simulation techniques for enhanced decision making and artificial intelligence.

**Predictive analysis**
Solution that looks to identify patterns of activity, such as unusual use of communications, non-routine patterns of leaving the office, non-completion of training, or missing mandatory leave, which may flag potential conduct concerns.

**Smart contracts**
Computer programs to enforce the negotiation or performance of a contract. Smart contracts aim to provide security that is superior to traditional contract law and to reduce other transaction costs associated with contracting through automation.

**Visualization solutions**
New technical solutions for a user-friendly data presentation to make sense of and to speed up the understanding of complex, heterogeneous, and abundant data.
What to expect from RegTech

Activities and processes covered by RegTech solutions are much broader than regulatory reporting and present themselves in many forms. Yet, they all have one thing in common: the targeting of a very specific niche.

By means of a thorough market analysis available on www2.deloitte.com/lu/regtechuniverse, we have mapped more than 80 RegTech companies offering various solutions that we have attributed to five main categories, these being:

1. Compliance
2. Risk management
3. Identity validation
4. Transaction monitoring
5. Regulatory reporting

From business needs to RegTech features
Each category encapsulates various subgroups. For instance, “identity validation” encompasses both identity management and various controls, whereby tools target customer or counterparty onboarding. Based on biometrics and access to a multitude of information databases at the same time, Know-Your-Customer (KYC) processes can be facilitated. Identity controls form a key ongoing part of the relationship with a client and may include Anti-Money Laundering checks based on big data reports. In risk management, several tools provide scenario modelling and forecasting for regulatory requirements such as stress testing by computing future data and allowing automatic reassessment and refinement of processes in reaction to input from users.

The essential role of regulators for supporting innovations

While we anticipate a very strong interest by financial firms in RegTech solutions due to the resultant competitive advantage, the adoption of RegTech solutions is currently slow due to a variety of underlying challenges. As such, the legitimization of these innovative products by enforcement authorities and regulators is a key driver to stimulate their adoption.

As the RegTech space is in its infancy and is developing rapidly, it is difficult for financial firms to identify and commit to a particular technology or solution. In addition, several constraints remain, such as those related to the sharing, storing, processing of, and access to data. A general wariness of banks and other financial actors to implement

RegTech solutions mainly originates from the need for enforcement authorities and supervisors to approve the use of such innovative products and services as well as apprehensions resulting from such solutions being as yet unproven. For instance, as the financial ecosystem moves toward increased data utilization, the relevant regulatory framework to perform analyses through the use of advanced algorithms will need to be assessed. Indeed, how data will be handled in terms of ownership, analysis, maintenance, and security will be a non-negligible aspect of the evolution of RegTech.

Recently, a progressive approach has been adopted by regulators such as the Financial Conduct Authority in the UK (FCA), the Monetary Authority of Singapore (MAS) and the Australian Securities and Investments Commission (ASIC). Being the first worldwide to offer a “regulatory sandbox,” the FCA aims at providing a safe place where businesses can test new services and business models in a live environment alongside the regulators who are tasked with assisting these innovators. The FCA has established a framework of application as well as relevant safeguards for the operation of its sandbox. The FCA’s stated market objectives for the sandbox are to reduce time to market at a potentially lower cost, provide better access to finance, and foster more innovative products reaching the market.² Essentially, for the RegTech ecosystem to grow, the need for collaboration is required from key industry stakeholders. Currently, RegTech solutions are in the process of understanding business and regulatory engagements to allow them

2 Source: FCA
RegTech can no longer be labelled as a buzzword as it is most certainly reality now. On the one hand, there is a need from financial institutions to drive compliance programs with greater efficiency, while on the other hand, new technologies foster the creation of innovative solutions as observed through our “Regtech universe” (www2.deloitte.com/lu/regtechuniverse).

The importance of regulatory risk management, always a critical challenge for the financial industry, has reached new levels of importance in the aftermath of the financial crisis. Financial stability is the new motto, and deficiencies identified in regulatory compliance gave rise to enhanced frameworks, obligations, and risks. 492 percent is the rate by which regulatory change volume has increased between 2008 and 2015. 3

Across the world, a variety of financial blue chip companies have been subject to heavy fines and penalties for failing to be compliant. According to Reuters, 20 of the world’s biggest banks have paid out more than US$235bn (£151.71bn) in fines and compensation between 2008 and 2015 for breaching various financial regulations. To put this number in perspective, it is roughly equivalent to the current gross national product of Ireland. The preventive steps taken by many firms encompass shifting resources to mitigate regulatory risks, i.e. allocating of up to 15 percent of their workforce to governance, risk management and compliance departments 5 and spending an extra €1 billion on controls in 2013 alone. 5

The fact is that there is no sign of this trend slowing down; the financial industry must live with the fact that regulation will continue to expand and deepen. A consequence is the changing focus of the classic business model, which now needs to integrate regulatory risk management as a key enabling business practice together with product profitability and meeting customer needs. In this context, RegTech solutions will certainly be instrumental in helping investment firms to cope with such change.

IN SUMMARY: MANAGING REGULATORY RISKS HAS RISEN TO BECOME AN ESSENTIAL BUSINESS MANAGEMENT PRACTICE

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3 Source: Thomson Reuters
4 Source: BBVA Research
5 Source: JPMorgan
The fund distribution value chain has been subject to more stringent and comprehensive regulation in recent years with still more to come, most notably MiFID II. Unsurprisingly, fund managers and service providers often list this trend as one of their top priorities and, at the same time, usually highlight the significant costs associated with regulatory compliance.

In parallel, in recent years, other service industries, such as consumer retail, travel, and healthcare, have made enormous progress in analyzing the attributes and characteristics of their customers to improve the effectiveness of their sales and marketing activities and to offer products and services that are better tailored to their clients’ needs. It is therefore often difficult for a “non-financial person” to understand how the investment fund industry, which is typically regarded as a technology- and data-driven industry, still seems to struggle with developing a thorough understanding of its investor base as a foundation for complying with regulatory requirements, such as selling the right product to the right client. So, what exactly is the fundamental problem and why is it so costly to solve? The answer is buried deep in the fragmented organization of fund distribution operations, which today not only includes multiple layers but also an increasing number of different types of service providers within the fund distribution value chain—and all these providers work with multiple sets of data and varying levels of aggregation.

2. Unleash the value of data to make faster and more precise decisions
It’s the data, ...
Historically, the activities of service providers were mostly limited to processing tasks. Over the past two decades, investments in technology and automation have enabled significant progress to improve efficiency and to reduce risk. However, the potential for further incremental gains is now limited until a new paradigm shift, such as perhaps the utilization of Blockchain technology, completely changes the operational model, potentially making several operational processing functions altogether obsolete.

In the meantime, fund managers are faced with two primary challenges: margin pressure and increasing regulation. To master both, they need better information. As a result, their attention has shifted—and will continue to do so—to data! Today, this data is housed in a variety of systems creating an array of data silos that are not interlinked or integrated. In most cases, it is also spread across multiple organizations and its volume and complexity are increasing exponentially. This scenario prevents good data analysis and timely initiation of required actions.
The impact of RegTech: data integration and analytics

The arrival of Big Data in fund distribution has been identified as a major opportunity to develop better business intelligence and has driven many fund managers to embark on initiatives to combine data from various sources. While some organizations have succeeded in building a comprehensive data set internally, many are still relying on the well-known spreadsheets to link data from different sources. Reports and queries are typically run on an ad-hoc basis and are usually of a historic and “photographic” nature, thus preventing dynamic trend or comparative analysis over periods of time. Based on past experience, it seems obvious that the parallel creation of proprietary infrastructures across different organizations to collect, maintain, and analyze data is not the most efficient way forward, as it does not represent a differentiating competence. Instead, a centralized outsourcing solution for fund distribution data analytics could look like this:
To develop a suitable approach, a look at the “lessons learned” in other industries with more experience in the area of data analytics is useful. The evidence suggests that technology alone will not be sufficient to generate relevant and valuable business intelligence. The key to success is the combination of in-depth business-specific expertise with strong analytical capabilities.

Fund managers as well as traditional fund service providers, such as custodians and third-party administrators, are increasingly becoming more open to partnership service models to leverage the specialized expertise of the new organizations in the FinTech and RegTech space. This approach enables them to reduce their time to market and is usually also more cost-effective than any in-house development project.

Case study: distribution oversight

With MiFID II approaching, an obvious application scenario for data analytics is the area of Fund Distribution Oversight, including topics such as product governance and suitability, target market compliance and distribution network oversight (KYD). The centralization and integration of data would enable the generation of sophisticated business intelligence, for example in the following areas:

a. Distribution Intelligence
   An integrated and real-time view of the full distribution network, including intuitive visualization, allowing for flexible historical analysis and timely identification of exceptions, e.g. with regard to target market and product suitability requirements.

b. Distribution Analytics
   The real-time dynamic monitoring of investor behavior and the intuitive visualization of data allowing for the timely identification and follow-up on relevant occurrences. This includes the sensitivity analysis of investor behavior, including transaction monitoring based on specific investor or distributor characteristics such as domicile or investor type as well as real-time notifications of suspicious or unusual behavior or the classification of investors based on various criteria (profitability, liquidity risk, longevity).

c. Distribution Oversight
   A centralized data analysis platform can include a web-based online tool to capture relevant data in relation to distributor due diligence, replacing the current manual questionnaire-based process. In addition, it could allow for the systematic and consistent application of risk ratings in the context of effective distributor network management and oversight. This platform would then offer immediate access to other relevant data across different areas; for example, the identification of suspicious transactions could be investigated by instantaneously accessing other potentially relevant information such as investor holdings, transaction activity patterns, risk ratings, and CRM-data, which would enable a more thorough evaluation on the basis of a holistic and dynamic investor profile.

RegTech and Data analytics: innovation - not disruption!

The opportunities of data analytics are obvious, especially in response to the continuously expanding regulatory requirements. They not only offer better decision quality by replacing “gut feeling” with facts, but also much more rapid reaction capability. As such, these developments are not disruptive, but represent clear innovation and improvement in comparison to current practices.

In other industries, the openness toward utilizing data analytics has been mentioned as an attribute of high performing organizations. This said, the segmentation of players in any given industry into high-, medium-, and low-performing organizations has shown that those at the top were much more likely to leverage data analytics to generate competitive advantage for themselves.

The fund industry, although clearly late in joining in the analytics game, will be no different. Currently, a vast amount of knowledge is being ignored, simply because of a lack of capability and capacity to integrate and analyze data and information properly across different systems and organizations. This is about to change as these days both FinTech and RegTech occupy a fair share of any industry conference agenda and industry participants are beginning to discover for themselves the opportunities and value in employing data analytics to address regulatory and business challenges. The current environment leaves no room for complacency, as the pressures are real and the solutions are available. Data analysis in other industries has shown that those who embrace data analytics today will be the leaders of tomorrow!
3. Accelerate business expansion through “smart-sourcing”

Managed services offered by asset servicing providers are more and more popular and offer Asset Management firms the opportunity to outsource various operational, finance and technology infrastructure processes. Indeed, Asset Management firms are seeing their business models squeezed and profitability pressurized. These challenges are compounded for many reasons including the fast-paced changes in client expectations, the complex regulations on both local and global levels, the disruption caused by the digital revolution, and lastly, the forces of globalization.

Business Process Outsourcing (BPO) can represent substantial value to service providers by reducing risk and delivering increasing value to clients whether through lower service costs, increased service quality or extension of service offerings. Reducing costs through outsourcing is possible and remains a valid business objective; nevertheless, this should not be the only motivation for outsourcing.

Asset Management firms should reject conventional wisdom and consider delegating non-core but high-value processes while continuing to mitigate global compliance risks and reduce costs. This is effectively what “smart-sourcing” is all about. Smart-sourcing definitely offers great opportunities for working more efficiently, proposing innovative services, and standing out in the competitive landscape; globalization-driven processes in the fields of tax, compliance, risk management, and regulatory affairs are just a few of the processes ideally positioned to be smart-sourced.

Actually, outsourcing is not new to the world as the first evidence of BPO can be traced back to traditional manufacturing companies such as Coca-Cola, which outsources large segments of its supply chain to be more cost-effective and efficient. Despite the significant benefits of BPO for the manufacturing industry, the financial service providers, however, still lack the degree of outsourcing leverage applied in other industries.

So why does the financial industry still shy away from the BPO business management practice?

We suspect the answer is two-fold:
1. BPO has a negative image and is burdened by substantial misconceptions including:
   a. It necessarily results in staff lay-offs
   b. It is a complex-to-manage process that often fails in the details
   c. It is a statement of the firm “against” a defined, low-value activity
   d. Once all the maths is done, it is often not cheaper than in-house processing
   e. It increases vendor dependency
2. Many players have less than positive experiences with BPO or failed in making it a success story for their firm as they did not realize the full value of BPO projects in the past:
   a. It did not consider all the potential processes in scope and only covered low value-added backoffice activities
   b. It did not take value from vendor centralization and resulted in a fragmented vendor landscape
   c. It only copy-pasted existing processes and did not trigger a review of the business process and service offering in itself
   d. The project lacked both with sufficient management focus and
resource for implementation

- It failed to produce the expected financial benefits through higher than expected implementation costs and non-adapted pricing models.
- The financial business case did not compare or include the fully loaded in-house production costs.
- The contractual set-up and vendor management approach was risk driven and did not allow for sufficient flexibility to adapt to changing servicing needs.

We believe that when smartly managed, a BPO project does not necessarily have to entail these consequences. It can be of substantial value to a financial services firm by increasing margins, reducing risks, driving innovation and enhancing value delivered to clients both internal and external. To break this less than positive image, let us take BPO to the next level by introducing the concept of “smart-sourcing.” In this sense, the essential business question becomes: “Do you still outsource or are you already smart-sourcing?”

So, what exactly is smart-sourcing?
Smart-sourcing can be understood as outsourcing business processes, taking into consideration that:
- The processes to be outsourced are reviewed and redesigned.
- The quality of the services is significantly increased through the application of best practices.
- The project entails a review and potentially an upgrade of the service offering.
- Vendors are centralized but smartly managed to benefit from additional economies of scale and provide higher processing transparency.

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Engaging in smart-sourcing instead of simple BPO entails (and even requires) a mindset change for many financial institutions:

From outsourcing...

- Focus on cost reduction
- Streamline back office tasks
- Works well with predictable processes
- Commoditised process
- Efficiency
- Vendor Management
- Stringent monitoring of operational risk

...to smart-sourcing

- Focus on creating value and seeking innovative solutions
- Enhance the value proposition
- Help you manage the unknown
- Service Differentiator
- Excellence
- Trusted advisor
- Lower risk through better processing
What to expect from smart-sourcing in the fund distribution space?
For fund distribution, smart-sourcing offers state-of-the-art solutions, often in the form of one-stop-shop managed services in white labelling mode, allowing investment management firms of any size to access a wide range of services thereby allowing them to accelerate their business expansion.

Clients, markets and product data is spread across fund administrators, transfer agents, custodians, depositaries and asset managers’ or intermediaries’ middle offices. Comprehensive smart-sourcing solutions, often also tagged as FinTech solutions, offer opportunities to mutualize data and create automated and user-friendly interfaces between all these actors and a one-stop-shop fund distribution support service. These interfaces are the gateway to a fully-fledged fund-servicing support managed solution.

Asset servicing actors can leverage these interfaces to build solutions for very manual-intensive processes. These niche processes could include fund setup, marketing and liquidation services, fund distribution support, operational tax services, audit trail, KYC/AML, and risk/regulatory/marketing reporting solutions. One key benefit of a smart-sourcing service would reside in the simplified and unified data exchange with the managed service platform.

Traditional and future fund factsheets
A fund factsheet is the essential marketing tool to promote fund products. Yet today, many fund factsheets are still produced with rigid content and are not refreshed or updated as often as one would want. In addition, the classic factsheets of today are designed to be printed and often fail to satisfy the requirements of the upcoming generation of global “digital native” clients. By smart-sourcing fund factsheet production, fund houses can differentiate themselves in many ways:
• By being assured that local compliance obligations will be met (and potentially avoid pricy fines and public sanctions)
• By creating rapid development and launch process for products to go to market
• By strengthening the data management process; this can actually benefit many other fund document productions, including KIIDs
• By having a faster, more cost-effective, more flexible, more scalable production solution that even large players could not afford to create in-house

Perhaps the greatest benefit of smart-sourcing fund factsheet productions is that it allows innovation to be captured much faster than if it were insourced. Current systems are indeed most often outdated and undersized. What would be the rationale of trying to replicate third-party solutions with less investment and focus than the “smart-sourcers?” To illustrate this point, fund factsheet smart-sourcers are now proposing solutions that many asset managers have only just started to dream of—factsheets can now come to life, i.e., be dynamic, generated on a real-time basis, and reworked online by clients as they wish by mixing the various media components available today including static and daily data (e.g., NAV per share, risk measures, news, links to other documents), video, news feeds, and even social media.

Fund setup and liquidation
Fund setup and liquidation includes processes such as the preparation of the fund’s mandatory documentation (e.g., prospectus and articles of incorporation), review of the agreements to be concluded with the main service providers (e.g., custodian bank, central administration agent), assistance with and coordination of the authorization process of the fund with the home state financial regulator and its subsequent incorporation (excluding registration, notary, and publication fees), or ongoing regulatory support during the structuring and launch phase. To offer these services, the managed services platform must be able to assist with the evaluation and realization of illiquid assets, the continuation of the hedging of assets and share classes, the distribution of portfolio assets in kind, the distribution of portfolio in kind to another fund in exchange for new shares of the fund, the collection of bids and selling of illiquid assets on the secondary market, performing statutory filings and reporting (e.g., FATCA, AIFMD), filing Aberdeen and Double Tax Treaty reclaims, participating in class action claims, managing foreign litigations to recover value following forgery, cherry picking or assets misappropriation, settling claw-back claims, managing and realizing private equity and real estate assets, performing fraud investigations, asset recovery, provisional liquidator engagements, and preparing and filing VAT returns.

Fund distribution support
A fully-fledged fund distribution support function requires the ability of the managed services platform to provide market intelligence, tax and regulatory watch and hotline support, fund registration support, pan-European tax figures calculation and certification, risk metrics (e.g., Solvency II lookthrough), regulatory reporting (e.g., AIFMD reporting), share class hedging, and client reporting. To offer these services, FinTechs are required to automate market and regulatory watch, create intelligent data and information repositories, manage data flows, create scalable processes, or automated data quality controls.

Operational Tax
Pan-European tax regimes are not yet harmonized. The distribution of Luxembourg-domiciled funds, for example, requires extensive knowledge and regular tax watch on topics such as domestic withholding tax regimes, taxation of interests, taxation of REITs, local market practice, access to tax treaties, taxation of ADRs, transactions taxes, procedural information, taxation of dividends, taxation of capital gains or tax agency. Knowing that Luxembourg-domiciled investment funds are distributed in over 50 countries in the world makes the tax watch at the local level a key benefit of offering a managed services platform. To focus on core services such as being the single point of contact for the asset manager, to assure quality, and to follow tax regulation, FinTech is surely the key to automate labor-intensive reconciliation and data validation.

KYC/AML/CFT
Investment firms face increasing challenges within their KYC strategy and operations, which imply the notion to think and act differently. New KYC services offer major opportunities to automate processes and include this activity in the managed services fund servicing platform. Externalizing KYC processes generates savings through mutualization of technology and expertise, increases quality and risk management, and enables investment management firms to focus on their core business activities. Here the processes include investor onboarding and initial risk assessment, risk-based due diligence, ongoing monitoring and due diligence, as well as oversight and reporting.

Risk and Regulatory Reporting
Smart-sourcing platforms offer calculation and reporting capabilities for risk management figures, synthetic risk and
In many cases where outsourcing has failed to capture its potential, the client did not see the relationship between themselves and the service provider as a partnership, thus creating innovation deficits.

reward indicators for pre-contractual documents, transparency reporting (e.g., Solvency II lookthrough, VAG, FTK), product-related regulatory reporting such as AIFM reporting and transactions reporting (e.g., MiFID TAF reporting, EMIR, SFTR, MAD/MAR), and regulatory health-check tools, case management tools, and risk data warehouses.

Characteristics of the ideal process to smart-source

One of the main root causes for a disappointing BPO process is the wrong casting for the smart-sourced process. A critical step on the path to smart-sourcing is indeed understanding what characteristics make a process ideally suited to be outsourced. A good casting of the process to be smart-sourced can be achieved by taking note of the following points:

- **Core process for the smart-sourcer, but not for you**—the outsourced process must not be one of your core activities but it should be a core activity of the outsourcing service provider—the “smart-sourcer.” Indeed, the smart-sourcer will have developed best practice formulae and specialized systems that are proven and optimized for the specific process.

- **Large scale/cyclical**—provision of a constant flow of work to the service provider allowing you to benefit from their economies of scale and to measure the vendor’s performance in a deadline-constrained framework.

- **Complexity is not an issue/high value tasks**—a popular misconception surrounding BPO is that the services being outsourced or to be outsourced should usually be low value and simple in nature. However, quite the contrary, complex tasks, especially those requiring an extensive range of competencies, can be considered as model smart-sourcing candidates for the simple reasons that obtaining the necessary in-house expertise would be difficult, costly, and potentially risky to manage. For instance, the turbulent tax and regulatory environment has led to many processes becoming quite complex (e.g., tax reporting, marketing and regulatory compliance, risk management, and reporting), requiring a multitude of experts to complete them successfully. The non-compliance burden attached to this reporting greatly increases the importance of these smart-sourced services; according to Thomson Reuters in 2014, US and European banks paid an astronomical amount of US$65 billion in penalties and fines for non-compliance.

- **Commodity services**—another facet that makes a service a suitable candidate for smart-sourcing is that it is conceived as a commodity, allowing firms to choose between several outsourcing providers competing not only on the best and most innovative services but also on price. In addition, commodity services allow for greater cost forecasting and budget predictability as service providers tend to follow the pay-as-you-go model, which greatly reduces fixed costs, thereby giving the client more autonomy and control.
Be ready to change to become faster, stronger, better
In many cases where outsourcing has failed to capture its potential, the client did not see the relationship between themselves and the service provider as a partnership, thus creating innovation deficits. A typical error for an outsourcing project would consist in “copy-pasting” or “lift and shift” solutions where the client simply asks the vendor to follow their legacy processes thereby often defeating the purpose of the outsourcing in the first place, as they failed to take advantage of the vendor’s strengths. The point here is that firms must agree to transform themselves for the better, and allow service providers to follow their own proven modus operandi.

The above is a small price to pay in comparison to the potential benefits of smart-sourcing:
Volume resilience—the smart-sourcing model usually comes with a gain in flexibility, which is significant in cases where there is a sudden increase or decrease in processing volumes. It is easier and far more cost-effective to adapt the resourcing capacity when dealing with a smart-sourcer, reducing the inefficient allocation of resources and the response time to market movements—a highly useful tool in today’s turbulent environment.

Global reach—especially for firms active in cross-border markets, smart-sourcing solutions would enable firms to gain immediate access to a specialized pool of resources with superior expertise and technical knowledge. Allowing vendors to use their own processing system(s) enables them to leverage their network of expertise in different countries, leading to more accurate specific solutions.

Innovation—as the process being outsourced is part of the smart-sourcer’s core activities, they will constantly continue developing and improving their services, providing you with innovative solutions that would most likely not have been on your own development agenda.

When smart-sourcing, do not “micro-outsource.” Think about the global picture.
Of course, outsourced processes must not be done independently from the big picture; the overall model must remain coherent and efficient. As a matter of fact, a number of firms address new business challenges, such as a new regulatory reporting requirement, by immediately outsourcing the issue at hand—and ultimately fail to reap the benefits of smart-sourcing. This type of strategy may lead to immediate pain relief, but does not constitute an effective solution that is sustainable in the long run.

Indeed, we have observed a number of firms that chose to outsource a multitude of tasks to a large number of specialized vendors. The main objective pursued in those cases was to quickly benefit from the expertise of specialized vendors. In the long run, this strategy that relies on multiple vendors creates a challenging environment where the benefits gained are wiped out by the efforts necessary to coordinate all the providers. Often, such setups lead to unforeseen delays and suffer from a lack of consistency in terms of quality. This is especially true in cases of high levels of interdependency between vendors where the mistakes or delays of one vendor can bring the entire system to a halt.

A more effective arrangement is to select a smart-sourcer that offers a breadth of activities and skills, acting more as an integrated solution for outsourced services. This significantly cuts down on the web of complex relationships to be supervised and synchronized. In addition, the service provider is tasked to coordinate operations internally, leading to a much more cohesive process, which can often mean the difference between success and failure. Furthermore, the client also receives output that is consistent, and the service vendor is able to take advantage of any synergies that may be present, hence creating value for both parties.

A potential concern related to the centralized vendor model is the risk of increased dependency on one external service provider. As the saying goes, you shouldn’t “put all your eggs in one basket” and to an extent this is true; there is certainly a need for caution. However, issues usually only occur due to poor vendor management where there has been a lack of controls being implemented at the beginning of the relationship.
Outsourcing to multiple vendors inevitably leads to inefficiencies and quality issues

A smart-sourcing model is synergetic by design
With the increase in technology, self-service is becoming the norm. We already see this in our daily lives—ATMs, self-service petrol stations, self-service checkout lines, and book-your-own travel packages. With robo advisers, self-service is now coming to the investment world, making it easy for investors to “do-it-yourself.” Today, we currently count over 100 robo advisers established in 15 countries throughout the world. Estimates for the future robo advisory market by several well known institutes predict between €2 trillion and €3.7 trillion in assets under management in 2020. By 2025, the figure is expected to rise to over €15 trillion, i.e. roughly three times the amounts of assets under management of today’s biggest asset manager worldwide.

Of course, there is opposition and resistance to accept the advent of such DIY tools in wealth management. The greatest myth is that the clients that really matter, i.e., the high net worth individuals (HNWI) will reject digital tools. This statement is actually wrong as the proportion of HNWI preferring digital contact over human contact is above 25 percent and rising across regions and age groups. It is safe to say that the investment management industry is lagging far behind many other industries, including financial services like retail banking, and that it has some serious catching up to do.

Investment firms including banks, asset managers, and family offices are faced with various dilemmas of wishing to implement innovative solutions for their internal clients while ensuring risk mitigation and a satisfying level of service. To better understand the extent of the possibilities offered to investment firms for implementing a robo adviser, they first must understand the current breadth of functions that robo advisers can cover across the wealth management value chain. Then, depending on the current maturity level of the investment firm and its strategic objectives, several options will be offered for the setup of a robo advisory solution. Obviously every option will have various impacts and bring new opportunities as well as constraints in terms of integration with the existing applications landscape. Working with a simplified decision tree could help the investment firm evaluate the relevance of every scenario based on their specific decision criteria together with the IT perspectives. This solution is beginning to trend with incumbent actors in the wealth management industry.

Robo advisers target the independent replication of many activities performed by wealth managers through online access and supposedly at a lower cost. Technology has made this possible through fast-growing online multi-channel tools that are accessible 24/7/365, meaning robo advisers can take advantage of this situation to settle themselves among the financial world and with investment professionals.

Estimates for the future robo advisory market by several well known institutes predict between €2 trillion and €3.7 trillion in assets under management in 2020.

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6 Wealth Management in the Digital Age (Capgemini, 2016)
### Robo advisory and associated scope of services

<table>
<thead>
<tr>
<th>Service</th>
<th>Robo advisory</th>
<th>Hybrid (robo &amp; human) advisory</th>
<th>Platform providers</th>
<th>Traditional wealth management actors</th>
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<tbody>
<tr>
<td>Digital client onboarding</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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<tr>
<td>Investor risk profiling</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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<td>Accounts aggregation</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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<tr>
<td>Automated digital advice</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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<tr>
<td>Discretionary portfolio management (algorithm-based)</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
<td></td>
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<tr>
<td>Advisory portfolio management</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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<tr>
<td>Automated monitoring &amp; rebalancing</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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<td>Online visual evolution</td>
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<td>can be offered</td>
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<td>Performance reporting</td>
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<td>can be offered</td>
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<td>Tax harvesting</td>
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<td>can be offered</td>
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<tr>
<td>Brokerage/Custody Services</td>
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<td>not offered</td>
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<tr>
<td>Access to human advisors</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
<td></td>
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<tr>
<td>Advanced analytics</td>
<td>widespread</td>
<td>can be offered</td>
<td>not offered</td>
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They provide access to financial information on demand and deliver added-value services anytime and anywhere. Some robo advisers offer automated management services at low or even zero cost. Fees on AUM are reduced but the spread remains significant, mostly between zero percent and 0.85 percent with Exchange-Traded Funds being widely used to reduce fees.

**Three implementation scenarios**

Setting up a robo advisory solution within the landscape applications of the IT department should theoretically reduce the existing cost base for providing discretionary services to mass affluent customer segments. The challenge is important for IT departments as many different technical options are available to do this, but they offer various levels of agility and involve some benefits and disadvantages that CIOs need to take into consideration before implementation. Selecting the right business model according to the organization and digital strategy is the first step in any technical implementation. Indeed the business must decide which model they wish to implement and for which client segment. The difference may be big between a technology-assisted adviser and a fully-automated investment service firm from the client onboarding perspective.
Technology-assisted advisers use technology to facilitate the acquisition and onboarding of new clients, but all investment management decisions are still performed manually, and a human adviser remains the primary owner of the process. These services are usually targeted at Baby Boomers whose preference is to have a human adviser. Fully automated investment services acquire and manage client portfolios entirely through software. Each automated investment service has a different fee model, but they are usually considered less expensive than technology-assisted advisers due to the reduction of manual work to a greater or lesser extent. Their investment management services also tend to develop at a much faster rate than the alternatives because unlike manual services, software constantly improves. These services are usually targeted at millennials who look for simple solutions that are available 24/7/365 and at lower cost. As soon as the CIO has a good understanding of the key strategic objectives, the current capability and maturity, as well as the type of solution needed, they can envisage three main scenarios.

**SCENARIO 1: CREATING YOUR OWN ROBO ADVISER**

The IT department can build its own robo adviser internally by developing an in-house robo advisory solution to leverage internal expertise, architecture, and resources. Most algorithms used in robo advisory are publicly known functions with rules that are possible for anyone to leverage. Moreover, this will enable the organization to remain the owner of main data including client data, strategic asset allocation, and model portfolios of the bank; the robo advisory solution will thus be easier to integrate within the current IT landscape of the firm using the data flows that are already in place. It will also be easier in terms of regulatory and compliance aspects, as everything is internally managed. However, building a robo adviser or implementing robo advisory solutions is challenging, since this requires specific skills that could be scarce within the current IT organization. This could therefore represent additional costs as external support or specific recruitment could be required to provide ad-hoc expertise on subjects such as:

- **Big Data and predictive analytics** - to collect and analyze all the relevant client information, details of market movements as well as any information coming from multiple channels that needs to be automatically integrated into the solution
- **Cybersecurity** - to set up and monitor all data flows and access rights, and also to protect the robo adviser from cyber threats
- **User experience and interface** - to design the look, feel, and functionalities of the “homemade” robo adviser, in line with most disruptive FinTechs
- **Mathematics** - to enable “modelization” of the advice model based on various criteria to be considered including but not limited to clients’ age, tolerance for volatility, investment goals (e.g., capital appreciation vs. recurring income) and investment time horizon.

Creating your own robo adviser will also add complexities to the maintenance of your IT landscape. The robots should support clients in multiple time zones, which means no service disruptions at all. This will involve large and complex deployments and a new culture of release management due to the significant dependencies that the robo adviser will have with all other applications. The robo adviser is on the front line with the client but is highly dependent on the quality of the information being provided, and when managed correctly, feeding it.
SCENARIO 2: PARTNER WITH A ROBO ADVISORY FINTECH

This can be achieved by acquiring a B2B white-labelled solution at a fair price that offers growth potential in relation with the firm’s strategy and IT/digital roadmap. This would be the fastest and easiest way to set up a robo advisory solution, no matter the current level of maturity of the IT application landscape. It could also enable the service to reach a new or different customer audience at a lower cost and meet a strategic objective of revenue growth through client segment diversification. It could also enable the service to reach a new or different customer audience at a lower cost and meet a strategic objective of revenue growth through client segment diversification.

In terms of attention points, we can identify four main areas:

1. The integration with internal IT systems and the dependency it creates toward an external provider. FinTechs’ main advantage should remain their agility to adapt to new trends and meet new requirements in a timely manner, ensuring constant innovation and improved customer experience. The CIO will therefore have to consider the appropriate SLA and level of insourcing required to remain agile and independent. A preference could be given to open source solutions or APIs that will enable the acquisition of sufficient internal knowledge.

    The CIO must also consider the contractual issues, changing requirements, and unforeseen charges when partnering with a FinTech robo advisory as well as the dependency being created on the external provider.

2. There may be some difficulties in terms of consistency of data and which referential to use. The FinTech solutions will likely come with a limited scope of investment products that may not be fully aligned to the internal financial instrument referential set of the investment firm. These discrepancies could lead to issues in cases where the client may perceive data inconsistencies when using two distinct services of the investment firm. Aligning all data across systems could represent a major effort in terms of cost, management, and resourcing. A solution could be to limit the robo advisory offer as a unique offer to specific client segments, e.g., the mass affluent.

3. From a regulatory perspective, depending on the origins of the FinTech and market deployment, some processes and functionalities required to cope with local regulations could be weak or missing.

    It will be important to consider:
    - Compliance with global and local regulations, especially synchronization with countries that are within your current scope
    - Compatibility with the firm’s internal processes
    - The responsibility and ownership of various regulatory obligations for example the provision of financial advice and portfolio reporting

4. Lastly, the security aspect cannot be neglected, especially regarding confidentiality of data, but also relating to malware that could affect client portfolio management. For private banks, and depending on their country of domicile, it may always be an issue not only to send client data to a third party that will use it to automate advisory processes, but also host such confidential data on a server physically located outside of the bank or abroad. The same applies to the protection of the firm’s intellectual property.
Investment firms often ignore the fact that they already have the capability to propose a robo advisory service by leveraging existing systems and assembling seemingly disparate processes into a consistent end-to-end process.

Robo advisory is effectively nothing more than a marketing name to describe the objective every CIO/COO has had in mind for several decades: a fully automated and paperless STP (straight-through processing) process. As an existing investment manager, it is likely that a portfolio management system is already in place within the current architecture and that KYC and investment profiles are being digitized. Moreover, a significant amount of data is available in the various data marts and from market data providers to better understand the next market movements and the most appealing products for clients. Robo advisory is about assembling all these capabilities together to support a new offering in a fully automated and digitized way.

The advantages are numerous: the required skills will mostly be available within the organization and the products and processes are already mature, which should not lead to additional expensive investment in new technology and licenses. Of course there are constraints—time to market and agility may not be as efficient as a pure player solution and the offering may not be as distinctive to clients in terms of their user experience. Running costs will remain high since the solution will rely on existing architecture, whereas software vendors might only invoice some “new” functionality of existing systems because they will be robo-branded.

Robo advisory is effectively nothing more than a marketing name to describe the objective every CIO/COO has had in mind for several decades.
Further points of attention

Costs
The type of costs and level of required investment could be vastly different depending on the selected solution. Buying a FinTech white-labelled application will create annual license and maintenance costs per user, but with the advantage of reduced implementation costs compared to creating your own homemade solution, which will bring its own investments requirements in terms of implementation as well as maintenance. These investments could include project and integration costs, consultancy fees, talent acquisition efforts for specialized skills, loss of opportunities to work on other initiatives aiming at cost reduction or efficiency gain, as well as 24/7/365 online infrastructure maintenance requirements.

Geography
The location of the infrastructure for BPO or ITO needs to be thoroughly analyzed. Indeed the target setup of the infrastructure dedicated to the new robo adviser solution, i.e., whether it would be hosted internally or externally, will have major impacts on the costs, security, flexibility, and future developments of the robo adviser. If the robo adviser is hosted externally, it will need to access specific data including client information, portfolio models, asset allocation models, and investment policies—all of which bring a whole host of other complexities to consider.

The same type of issues should be considered when implementing a solution internally, but with the objective to make it available across several locations.

Security
Cybersecurity and privacy concerns for BPO/ITO regarding data, especially client-related, is one of the key challenges for robo advisers. The applications need to be fed with a vast quantity of information on client profiles to wisely advise the customers. For external solutions, this means sending some very private and confidential client information outside the organization. This must be very carefully managed and designed, taking into account the stringent and complex local regulations that the investment firm and the hosting infrastructure must comply with in terms of data protection and confidentiality.

Third parties
Dealing with providers such as brokers or third parties is an important point to analyze when using a robo adviser on the market. Using a ready-made solution involves a dependency on third parties. What if the asset manager wishes to trade with a specific broker who is not yet set up on the solution? This constraint will become less important over time, given the enforcement of regulatory rules regarding inducements.

Interactions
Both data and transactional flows between the external robo adviser and the asset manager could become a nightmare in terms of the sheer volume of data. To manage this, the investment firm will have to create/modify a data warehouse that stores all the information needed by the external FinTech solution, but with the added constraint of having almost constant availability and near-to-real-time accuracy.
Every scenario has its advantages and constraints

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
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<tbody>
<tr>
<td>NEW</td>
<td>FINTECH</td>
<td>LEVERAGE</td>
</tr>
</tbody>
</table>

- **Human resources**: ★★★★
- **Time to market**: ★★★★
- **Regulatory risk**: ★
- **Effort**: ★★★★
- **TCO**: ★★
- **Integration complexity**: ★★★
- **Security/privacy constraints**: ★

★ ★ ★ High impact
★ ★ Limited impact
★ Low impact

What are the next steps for incumbent market players?

Put simply, they must choose their positioning and make their selection within a range of strategic options:

- Ignoring the opportunity at first and focusing on servicing UHNWI and HNWI who require higher added-value services tailored to their specific needs while the robo advisory market matures, taking into account the risk of positioning themselves as a late-comer
- Developing an in-house robo advisory solution to leverage internal expertise, architecture, and resources. This should reduce the existing cost base for providing discretionary services to the mass affluent segment
- Acquiring a robo adviser at a fair price that offers growth potential in relation to the firm’s strategy and digital IT roadmap; this could also enable it to serve a new customer segment at lower cost
- Partnering with an existing robo adviser to take advantage of this digital trend and its services to attract younger tech-savvy investors who may become the core clientele of tomorrow
Open APIs allow organizations to leverage their existing IT assets to generate new business value through mobile apps, connected devices, and the cloud.

For instance, imagine you would like to support bitcoin-based transactions or, more classically, automate payments, integrate instant account verification capabilities to reduce fraud and risk, or incorporate functionalities to boost your analytics capabilities in areas such as risk, business analysis or regulatory reporting by accessing historical financials, fundamentals and earnings across global exchanges worldwide. For this, many APIs offer the acquisition of such capabilities on a much faster scale these days and are offered by not only FinTechs but also innovative incumbent players. In fact, APIs have very quickly been elevated from a development technique to a business model driver for boardroom consideration. An organization’s core assets can be reused, shared, and monetized through APIs that can extend the reach of existing services or provide new revenue streams.

Applications and their underlying data are long-established cornerstones of many organizations. All too often, however, they have been the territory of internal R&D and IT departments. From the earliest days of computing, systems have had to talk to each other to share information across physical and logical boundaries and solve the interdependencies inherent in many business scenarios. The trend toward integration has been steadily accelerating over the years. This is driven by increasingly sophisticated ecosystems and business processes supported by complex interactions across multiple endpoints in custom software, in-house packaged applications, and third-party services be these clouds or other solutions. The open API-oriented approach toward technology architecture is generating much attention. APIs are expected to reduce the time to market for various products and services and lower the build cost by “plugging in” with an open API.

**APIs in investment management**

The growth in banks and financial services firms exposing APIs to their legacy systems is primarily driven by the need to deliver more functionality and faster time to market. For example, when launching a new digital bank, if every single feature of this digital bank was built in-house, it would take an enormous amount of time and major investment to build all the functionalities needed to run such a bank. Instead, the bank can leverage best-of-breed software and integrate these into their solution through APIs.

Similarly, in the case of the investment management industry where market data is the lifeblood of any organization’s business, obtaining accurate and timely market data in the requisite format continues to be a time-consuming and ambiguous process. However, these businesses now have the option of linking their systems to external data feeds, which provide real-time, historical, and reference data without the need for complex in-house data management systems. These offerings can also be potentially sold by investment management firms as additional products over and above the suite of investment management offerings.

To manage the cost of building and delivering solutions, service providers need to consider the development of clear standards to help in articulating these requirements across not only the entire technology organization but also the business. This makes it easier to develop various ecosystems in all organizations, whatever their size.

The degree of openness, elements of usability or re-usability, and how we can make the framework easy to interpret, as well as feasibility, stability, and transparency are key priorities of an API management framework. Organizations will need to think clearly about the transition from legacy architecture to micro-services and how these transitions will help them not only better manage the maintenance budgets, but also reduce time to market.
The open API-oriented approach toward technology architecture is generating much attention.
Three vital questions firms should ask themselves before embarking on an open-API journey

1. How do we develop data standards around transaction data, reference data, and, more importantly, sensitive commercial data?

2. How do we build security standards that ensure the right level of authentication, authorization, and encryption?

3. How do we manage relationships with the various stakeholders such as data attribute providers, third parties, and customers?

In summary, organizations need to ensure APIs have the clarity of a well-positioned product—a distinct intention, a clean definition of the value, and perhaps more importantly, a clearly defined audience. It is important to already plant the seed of how business services and APIs can unlock new business models in the future.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADR</td>
<td>American Depositary Receipt</td>
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<tr>
<td>AIFMD</td>
<td>Alternative Investment Fund Managers Directive</td>
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<td>AML</td>
<td>Anti Money Laundering</td>
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<td>AMLD IV</td>
<td>fourth Anti Money Laundering Directive</td>
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<td>API</td>
<td>Application Program Interface</td>
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<td>ASIC</td>
<td>Australian Securities &amp; Investments Commission</td>
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<td>ATM</td>
<td>Automated Teller Machine</td>
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<td>Assets Under Management</td>
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<td>Business 2 Business</td>
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<td>Business As Usual</td>
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<td>Foreign Account Tax Compliance Act</td>
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<td>Financial Conduct Authority, UK</td>
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<td>FTK</td>
<td>Financieel Toezichtskader – Dutch Financial Assessment Framework</td>
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<td>HNWl</td>
<td>High Net Worth Individuals</td>
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<td>ITO</td>
<td>Information Technology Outsourcing</td>
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<td>KIID</td>
<td>Key Investor Information Document</td>
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<td>Know Your Customer</td>
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<td>Market Abuse Regulation</td>
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<td>Monetary Authority of Singapore</td>
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<td>MIFID</td>
<td>Markets in Financial Instruments Directive</td>
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<td>P2P</td>
<td>Peer-to-Peer</td>
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<td>PRIIPs</td>
<td>Packaged Retail and Insurance-based Investment Products</td>
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<tr>
<td>PSD2</td>
<td>Payment Service Directive 2</td>
</tr>
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<td>R&amp;D</td>
<td>Research &amp; Development</td>
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<td>Real Estate Investment Trust</td>
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<td>SFTR</td>
<td>Securities Financing Transactions Regulation</td>
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<td>SLA</td>
<td>Service Level Agreement</td>
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<td>STP</td>
<td>Straight Through Processing</td>
</tr>
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<td>TAF</td>
<td>Trading Activity Fee</td>
</tr>
<tr>
<td>TCO</td>
<td>Total Cost of Ownership</td>
</tr>
<tr>
<td>UCITS V</td>
<td>fifth incarnation of the Undertakings for Collective Investments in Transferable Securities Directive</td>
</tr>
<tr>
<td>UHNWI</td>
<td>Ultra High Net Worth Individuals</td>
</tr>
<tr>
<td>VAG</td>
<td>Versicherungsaufsichtsgesetz – German Insurance Supervision Act</td>
</tr>
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