THE DIGITAL EVOLUTION OF WEALTH MANAGEMENT

HOW WEALTH MANAGERS ARE USING EMERGING TECHNOLOGIES TO IMPROVE THE USER EXPERIENCE, WHILE CUTTING COSTS AND BOOSTING REVENUE

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KEY POINTS

- **Wealth managers boast a unique history of embracing technological developments that enable them to work more efficiently.** Computers brought quantitative investing to the industry in the '80s, and the advent of high frequency trading made use of early advances in machine learning. This automated the trading of investment vehicles, making it easier to handle larger volumes of trades.

- **Now, the emergence of startup wealth managers and digitally savvy technology suppliers is promising to change the game once again.** These young firms are known for bringing emerging technologies to the fore to make wealth management more time- and cost-efficient. As a result, big players are waking up to the opportunities that implementing emerging technologies, including robotic process automation (RPA), machine learning, and artificial intelligence (AI), can potentially open up, as the industry forges ahead to manage $145.4 trillion assets under management (AUM) globally by 2025.

- **Improving consumer-facing elements of wealth management, like onboarding and customer service, can lead to better client satisfaction and higher retention rates for these firms.** Additionally, introducing automation to these areas may result in lower costs, as employees are freed up to handle more complex tasks. Startups and incumbents alike are using technologies including RPA, machine learning, and chatbots to enhance their operations in these areas.

- **Meanwhile, advances in machine learning and application programming interfaces (APIs) can help wealth managers improve functions like portfolio management and compliance.** Such tools can help wealth managers become more efficient, better stay on top of regulations, and increase customer satisfaction by offering improved and additional services.

- **However, there are some hurdles wealth managers may run into when implementing these tools.** These range from a lack of customer trust in emerging technologies to difficulty finding appropriate talent. As such, firms should map out their implementations carefully, and take an iterative approach to implementing new technology projects.

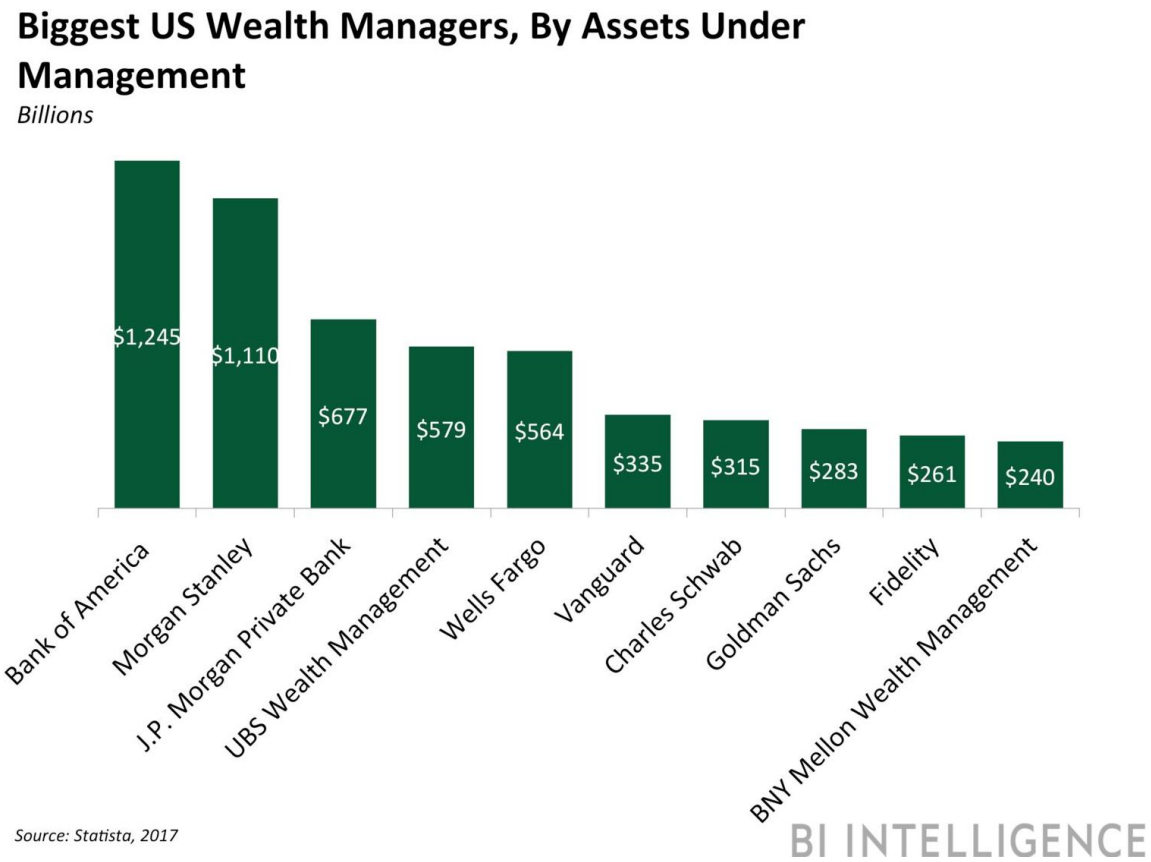
Download the charts and associated data in Excel »

INTRODUCTION

Asset managers globally are expected to boast $145.4 trillion assets under management (AUM) by 2025, according to predictions from PwC, highlighting the critical role these companies play in the lives of individuals and the finance industry more broadly. And, unlike in many other areas of finance, these firms have historically been open to technological developments that enable them to work more efficiently. For instance, computers brought quantitative investing to the industry in the '80s, resulting in the use of algorithms and automation to determine which companies should be invested in, based on a formula, instead of humans speaking to the companies personally. That later led to high frequency trading, which uses early developments in machine learning, or the practice of teaching machines to contextualize information based on data they already have, to select companies for a portfolio and trigger the purchases and sales of securities. This automated the trading of investment vehicles for wealth managers, making it easier to handle larger volumes of trades.

Now, the emergence of startup wealth managers and digitally savvy technology suppliers is promising to change the game once again. These young firms are known for bringing emerging technologies to the fore to make wealth management more time- and cost-efficient. And, while incumbents have been lagging behind a bit, even the big players are now waking up to the opportunities that implementing emerging technologies, including robotic process automation (RPA), machine learning, and artificial intelligence (AI), can potentially open up, likely in response to an increasing number of startups emerging in the field. Many incumbent wealth managers are now adopting these technologies throughout their businesses to keep up with the competition.

In this report, Business Insider Intelligence takes a deep dive into how emerging technologies like RPA and AI are transforming the wealth management industry, on both the front and back end, by increasing efficiency and opening up the space to new demographics. We explain how both incumbents and startups are applying these technologies to different business areas, and how successful they've been at implementation. Additionally, we take a look at the challenges wealth managers are facing as they look to revamp their businesses for the digital age.



ONBOARDING AND CUSTOMER SERVICE

Improving consumer-facing elements of wealth management like onboarding and customer service can lead to better client satisfaction and higher retention rates for these firms. Moreover, adding elements of automation to these areas may result in lower costs, as employees are freed up to handle more complex tasks. Startups and incumbents alike are using technologies including RPA, machine learning, and chatbots to enhance their operations in these areas.

RPA Can Digitize Onboarding

Companies are using RPA to make onboarding easier and faster for their clients. RPA uses rules-based algorithms to analyze customers' responses to a digital questionnaire about their financial situation, and then decides if the person should invest, and if so, what would be a wise investment based on their risk profile. Traditionally, and before the use of RPA, this process involved a lot of repetitive data sorting by humans, which took up a lot of time for financial advisors. By using algorithms to conduct this process, this time can be spent on more complicated tasks that cannot yet be done by the technology. An increasing number of firms are now using RPA in the onboarding process, as it not only boosts efficiency, but also often allows companies to offer wealth management services at a lower price.

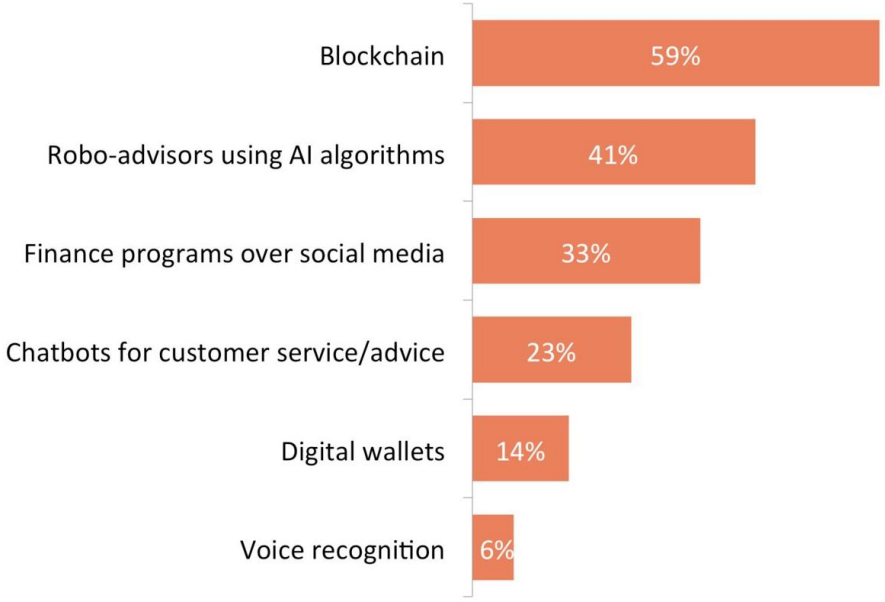
Canadian startup Wealthsimple, for instance, has built algorithms that help match clients with a portfolio that is customized to their financial goals. Wealthsimple is one of Canada's biggest digital wealth managers, with 65,000 clients globally and C$2 billion ($1.55 billion) in AUM. The algorithms determine which portfolios to sort investors into based on their answers to a multiple choice questionnaire, which collects information on personal details, objectives, and investment experience. The process can take as little as 5 minutes, according to Wealthsimple's website. However, the algorithms don't decide which investment products are included in the portfolios. That is determined by an investment advisory board made up of industry professionals and academics, according to the company. Wealthsimple has likely opted to keep doing the latter manually for compliance reasons, and to ensure that it can explain exactly why a certain product has been included or excluded.

Incumbents, including Danske Bank — which launched its digital wealth manager June last year — have also started using algorithms to take over the onboarding of new customers. Danske Bank asks customers a set of 12 questions during an application process that it claims takes only 10 minutes. The questions are designed to draw information on risk appetite, as well as financial details such as assets, liabilities, and monthly spending. An algorithm then calculates the loss ability of an individual and recommends an investment strategy for the person. Additionally, June uses picture recognition technology for know-your-customer (KYC) processes to ensure a person is who they say they are. Overall, June has onboarded 16,000 clients to date, who are younger and lower in net worth, on average, than Danske Bank's other wealth management clients, according to Jakob Beck Thomsen, head of June. The average age of a June client is 41, which is one-third lower than the average age of a typical investment client, according to Thomsen, which illustrates how the use of technology has allowed Danske Bank to open up wealth management for a new set of people.

Using RPA to digitize onboarding can help wealth managers cut costs, as fewer humans are needed to interact with clients. This, in turn, enables firms to offer cheaper products to demographics that conventionally haven't used wealth management, thereby serving a much broader range of clients, according to Danske Bank. In addition to RPA, Danske Bank provides its June customers with the ability to deposit funds into their account via credit card, mobile pay, or bank-to-bank transfer. This makes it easier to get money into their new accounts, and makes their onboarding process much quicker and more convenient.

Global Consumer Unfamiliarity With Emerging Technologies

Share of consumers who agree with the statement "I have never heard of this technology"



Note: Values do not total to 100% because respondents could choose multiple answers.
Source: HSBC, n=12,019, 2017

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Chatbots Are Augmenting Customer Service

Chatbots make use of natural language processing (NLP), which allows them to understand human language and is increasingly including colloquialisms and emotions. This enables chatbots to understand customer queries and provide suitable answers across a broad range of industries. In wealth management, NLP is primarily used in customer service to augment existing employees, as the technology isn't advanced enough to tackle many of the complex questions that clients have about their finances.

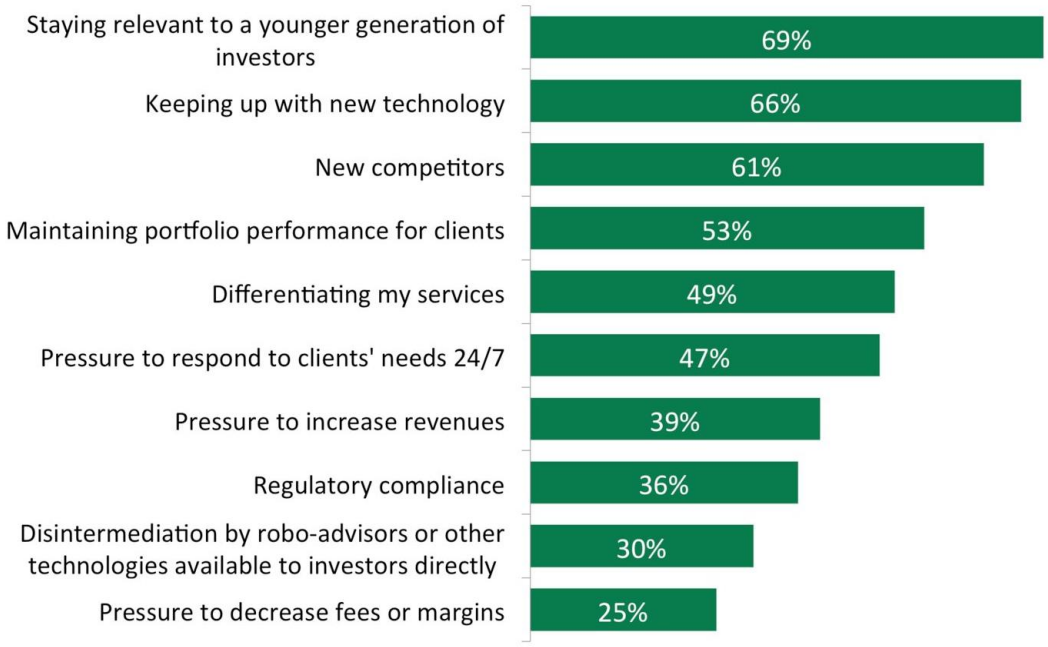
US-based digital wealth manager Betterment makes use of NLP and machine learning to catalog similar questions posed by customers, as one question is often asked in many different ways. This helps employees get to important questions quicker and increases customer satisfaction. The actual answers to customers' queries are provided by humans, but the underlying technology facilitates and streamlines the process. Joe Zeimer, VP of communications at Betterment, says the company might consider launching a full-scale virtual assistant in the future, leveraging more machine learning techniques to answer a wider variety of needs than its digital customer interface currently does. However, he did not give details on any concrete plans to do so.

Others, including UK-based Exo Investing, say that NLP's shortcomings make it problematic to use chatbots in customer service and financial advice, even though there's been a lot of progress with the technology. In fact, there have been some incidents with NLP-based support systems because they lack the "cognitive or emotional intelligence of a human," CEO of Exo Investing, Lennart Asshoff, told Business Insider Intelligence. He pointed out that, if a financial crash were to happen, it would be very difficult for technology to explain to an investor what happened and how that person should proceed, due to lack of cognitive and emotional abilities. We are not at a stage yet where customer service can completely be outsourced to an algorithm, he added. Hence, for now, it's perhaps more beneficial for companies to use such tools in ways that are still supported by humans.

However, with further development, chatbots may take on a larger role in wealth management. One of the biggest issues with chatbots currently is that NLP cannot perfectly treat unknown scenarios or those with missing information. Additionally, there are many different ways in which people write and speak, making it hard for the technology to grasp what a person means sometimes, which isn't satisfactory when it comes to money matters, Asshoff explained. As the technology evolves, it will be able to take on more and more tasks, likely paving the way for a hybrid approach in which general questions are answered by chatbots and humans take over if questions get more complicated. That said, it remains to be seen how willing customers will be to accept customer service from chatbots, which will mark a whole new challenge for companies in the future.

Greatest Concerns For Wealth Managers

Global, 2017



Note: Values do not total to 100% because respondents could choose multiple answers.
Source: Forbes Insights, n=200, 2018

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SERVICE PROVISION AND COMPLIANCE

By taking advantage of advances in areas including machine learning and application programming interfaces (APIs), wealth managers can improve functions like portfolio management and compliance, while offering more services to their customers. Such tools can help wealth managers become more efficient, better stay on top of regulations, and increase customer satisfaction.

Machine Learning Is Improving Portfolio Management And Financial Planning

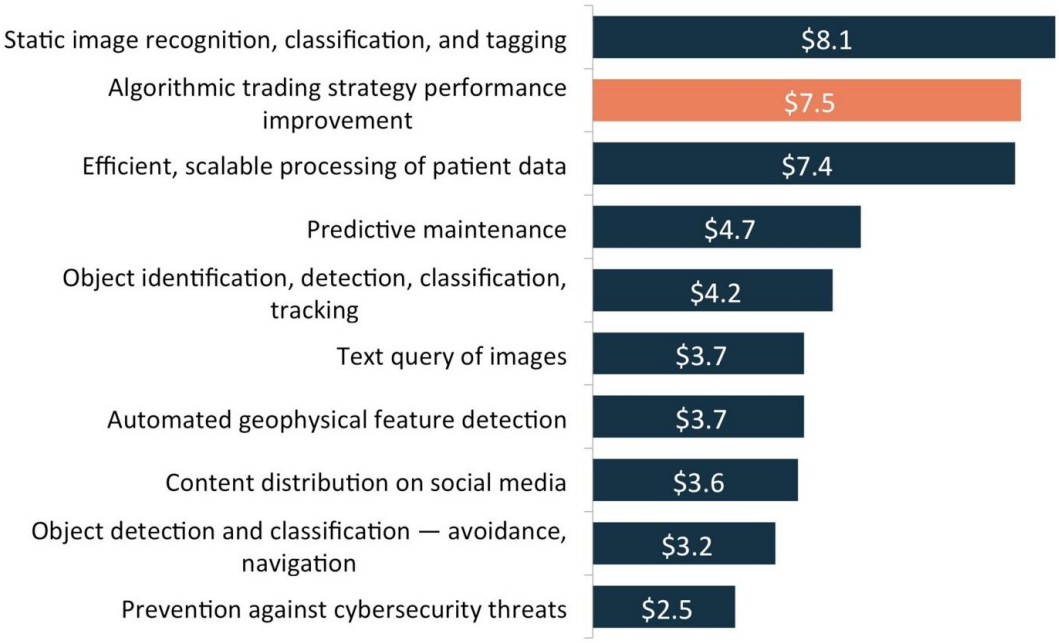
Portfolio management can either be done by humans who buy and sell investments on the behalf of a client, or it can be automated by using machine learning and algorithms to balance portfolios to ensure that they are in accordance with investors' objectives. Machine learning is essentially a process of repetition, wherein a computer learns by trial and error. This process brings the quantitative techniques that have been used by legacy players for ages to more people by using faster computers with higher processing power to automate them. Machine learning can also take much larger data sets into account and examine portfolio trends faster than a human can, allowing companies to build and offer more unique portfolios.

There are a number of ways wealth managers are making use of machine learning in portfolio management. Wealthsimple uses algorithms to build a portfolio, trade it, and automatically rebalance it when needed, for instance. Meanwhile, Exo Investing uses various machine learning algorithms that are applied in different areas of its investment management services and portfolio optimization, one of which is the exchange traded fund (ETF) selection process. The algorithm takes many different data points into account, such as the track record of an ETF and its expense ratio, and then makes a decision on which ETFs are best to invest in. Additionally, Exo Investing uses rotation management, which takes the cost of trading into consideration when determining whether it's worth making changes to a portfolio. It also uses machine learning to clean data by removing outliers, and to separate noise from actual trends to minimize errors in the models.

Wealth managers can also use machine learning to provide customers with financial advice. For example, the technology can be used to suggest to users how adding a new financial goal might affect their financial situation. US-based digital wealth manager Wealthfront has digitized all of its operations with machine learning and automation to provide a more cost-efficient service for its users. It's using the technology to monitor clients' financial situations to assess how reasonable their financial goals are, and to determine what needs to be done to achieve those goals in a certain time. Clients can play around with different variables, such as what will happen if they want to retire five years earlier, to see how changing certain things related to their financial situation affects their short- or long-term goals. All of these services are calculated by machine learning and automation algorithms, meaning that Wealthfront needs no financial advisors for these tasks.

Estimated Cumulative AI Revenue From 2016-2025, By Application Area

Global, billions



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Source: Tractica and Statista, 2018

Connecting To APIs Can Open Access To Third-Party Services

To further facilitate financial planning, companies can link with third parties via APIs to give their customers better insight into what is financially possible. Wealthfront, for example, has integrated with a number of third parties, including real estate and rental marketplace Zillow, to give its customers more options for what they can do with their money. Open APIs make these kind of integrations possible by enabling developers to link to applications or services from other companies. For instance, if someone's financial goal is to buy a house, they can check housing prices in a preferred neighborhood on Zillow via Wealthfront's app, and then adjust their financial plan to make sure buying a house in said neighborhood will be possible after a certain time. This allows Wealthfront to offer its customers a much wider range of services, increasing client satisfaction, as they don't have to visit multiple different websites to get insight into what they can afford. As companies become increasingly open to sharing data with third parties, we expect many more wealth managers to make use of APIs to offer their customers the best possible and most convenient service.

Explainable AI Can Help Companies Stay Compliant

Explainable AI leverages machine learning to imitate how the human brain works, and is therefore capable of unsupervised learning from data that is unstructured or unlabeled. However, unlike other forms of machine learning, including deep learning, it presents its findings in a way that is understandable to humans. This is important because the use of AI techniques can often lead to "blackbox" compliance issues when the technology can't explain by itself why and how it came to a certain decision. The introduction of MiFID II in the EU forces wealth managers to disclose how and why advice is given, and the UK's Financial Conduct Authority has a similar requirement, making avoiding this issue paramount for wealth managers looking to leverage AI tools. Explainable AI can be used in compliance to help companies stay on top of new regulations and ensure that investors are well protected. This benefits wealth managers by boosting efficiency to cut costs and ensuring they aren't slapped with fines related to compliance issues. Explainable AI can help by flagging instances where advice may be abnormal, so human employees can double-check whether the advice given was appropriate.

UK-based Wealth Wizards uses explainable AI in this way, and has seen considerable success. The company used past advice cases to teach its AI tool, called Turo, how a human financial advisor would deal with certain scenarios. It has now launched Turo, which aims to provide financial advisory firms of all sizes, from startups to large incumbents, with access to faster financial advice software. The AI tailors the insights it gives individual financial advisors to their company's advice policy and style by training itself on historical client interaction data. The AI can then spot any anomalies in advice, and humans double-check whether an error actually occurred or not. This allows it to generate recommendations for advisors to give clients quickly, helps ensure the advice given is in line with company policies, and boosts case load efficiency by reducing the time spent on handling a case, allowing advisors to serve more clients and drive revenue. The use of explainable AI in the wealth management industry is still in early days, but once it proves itself to be successful at augmenting humans while staying compliant to regulations, we expect to see much more use of it.

CHALLENGES EMERGING TECHNOLOGIES PRESENT IN WEALTH MANAGEMENT

While the use of newer technologies can improve the wealth management industry in many different ways, there are some limitations and challenges as well. As such, wealth managers can run into a variety of problems when implementing the technological solutions discussed in this report.

Here are some of the most common and important obstacles to keep in mind:

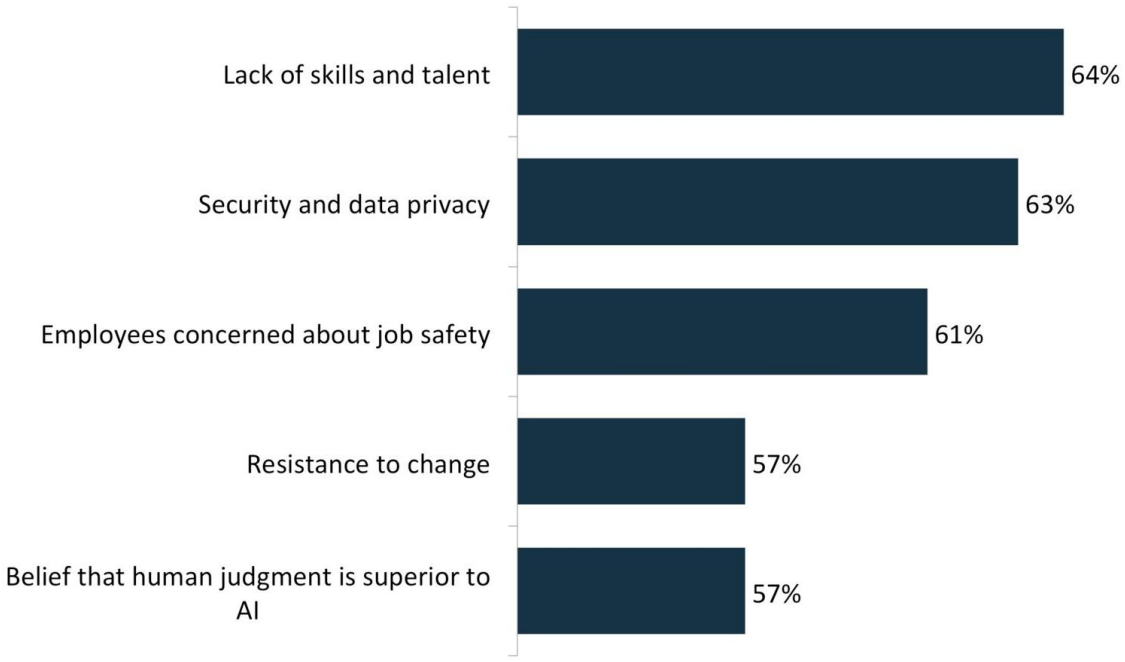
Finding the right talent. Talent is scarce in the fintech industry, largely due to competition among big players, as well as from tech giants, including Google and Amazon. This makes it difficult for both digital and incumbent wealth managers to find the right people to implement new technologies. As a result, some companies have started to look into a broader range of fields for their hires, including Wealth Wizards, which has been hiring people with backgrounds in areas like physics, computational biology, and astrophysics. This is due to the many transferable skills across disciplines, Peet Denny, the company's CTO, told Business Insider Intelligence.

Lack of trust from customers in technology. Customers often want the reassurance of a human employee, especially when large sums of money are at stake. This need for reassurance likely only increased following the 2008 financial crisis, when many lost trust in the ability of financial institutions to keep their money safe. Because of this, many wealth managers struggle to get their customers to put trust into emerging technologies and convince them that these tools work as efficiently and effectively as their human employees, if not more so.

Overfitting the model. This a common problem with machine learning that refers to when a formula is fitted too closely to the data that it learned from. As a result, it becomes too specific to the learned scenarios and can't appropriately fit in any new scenarios that it encounters, as they aren't relevant to the model. This means that, when a solution goes live, it will not accurately predict future events. To avoid this issue, wealth managers need to incorporate more data, which can be challenging, especially for startups that often need to rely on incumbent partners for such information. Exo Investing makes use of technology provided by its partner, Spanish asset manager ETS Asset Management Factory, and Wealth Wizards uses data from its partner wealth managers that use its white-label solution in order to fit their model for future cases. ETS Asset Management Factory, in partnership with Exo Investing, overcomes this problem with its proprietary Series Innovation Model, which integrates possible future paths of the stock market to predict how a model will potentially perform in the future. This ensures that the company doesn't roll out a model that doesn't function properly in a live situation.

However, the potential challenges shouldn't put off wealth managers. Firms should be aware of the potential problems that can arise before incorporating emerging technologies within their business models. But, these issues should not put them off future implementations of new solutions, as making use of tools that enable automation and greater efficiency could result in necessary competitive advantages, especially in an increasingly crowded environment. Instead, firms should map out their implementations carefully, and take an iterative approach to implementing new technology projects.

Biggest Challenges To Implementing AI



Note: Values do not total to 100% because respondents could choose multiple answers.
Source: Capgemini, n=939 companies that have implemented AI, 2017

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WHAT COMES NEXT

By embracing new technological developments, incumbents and startups in the wealth management space have been able to open up the industry to whole new demographics, including tech-savvy millennials who want to be provided with the most cutting-edge solutions at a low price, as well as those who traditionally haven't had enough money to get financial advice. In the years ahead, we expect the wealth management industry to become even more accessible to those demographics as it moves away from being perceived as an industry for only high net worth individuals (HNWIs).

More incumbents will likely employ the technologies discussed in this report as they continue to prove effective for generating new streams of revenue and cutting operational costs. Additionally, they will increasingly feel the presence of startup digital wealth managers in the space, pushing them to innovate even faster. Moreover, as more data becomes available to digital wealth managers over time, their digital solutions will improve. This will not only make it possible to iterate on existing implementations of algorithms and machine learning, but will also open up these technologies to new parts of wealth management that they could not previously tackle alone, such as complicated customer queries.

THE BOTTOM LINE

- The emergence of startup wealth managers and digitally savvy technology suppliers is promising to change the game in wealth management, an area of finance with a unique history of embracing technological developments.

- These young firms are known for bringing emerging technologies to the fore to make wealth management more time- and cost-efficient. As a result, big players are waking up to the opportunities that implementing emerging technologies, including RPA, machine learning, and AI, can potentially open up.

- Improving consumer-facing elements of wealth management like onboarding and customer service can lead to better client satisfaction and higher retention rates for these firms. Startups and incumbents alike are using technologies including RPA, machine learning, and chatbots to enhance their operations in these areas.

- Meanwhile, advances in machine learning and APIs can help wealth managers improve functions like portfolio management and compliance.

- However, there are some hurdles wealth managers may run into when implementing these tools. Firms should therefore map out their implementations carefully, and take an iterative approach to implementing new technology projects.

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