NORTHERN TRUST

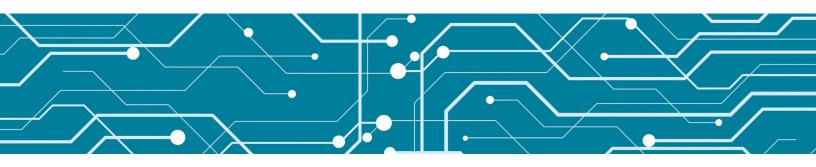# UNLOCKING BIG DATA
WITH DATA SCIENCE

Although the exponentially increasing amount of data in the world can be difficult to weave through, financial services firms can capitalize on this additional information if they have the right people, processes and technology in place.

From interactions with customers across multiple touchpoints, to risk management data, to investment returns data, financial organizations that can mine, process, analyze and understand their information have an opportunity to significantly improve their internal operations as well as their ability to serve clients. Unlocking this potential requires data science, which essentially involves analyzing large volumes of data and discovering meaningful insights from that information, often through the use of data science technology platforms and individuals who can discern what's relevant from large datasets. Data scientists require a mix of skills, including statistical, analytical, creative problem-solving and others in order to find insights that help their organizations.

By making better use of big data and adding data science skills, asset owners and asset managers can meet today's challenges, including increased competition and more desire for personalization and transparency, in a way that filters out noise and focuses on the most relevant information.

BECOMING CUSTOMER-CENTRIC

Many organizations are making inroads using data science and big data analytics to better meet client needs.

"Big data, and the technology that powers its analysis, are key to our differentiation and unique value proposition," says Elizabeth Kelly, senior vice-president of operations at United Income, an online investment management and financial planning company. "We've used it to create a unified decision optimization engine...to create much more personalization in financial planning and investment management than has been possible in the past."

Ms. Kelly says that while many organizations have been analyzing potential investment outcomes for some time, United Income has used big data to model possible life events, such as incurring additional healthcare expenses as one ages. This allows individuals to understand their savings and investment in a personal context, which in turn helps them make more relevant decisions.

"We use data to try to get ahead of these life events and proactively plan for them. The result is that we simulate millions, and up to tens of millions, of potential decisions and outcomes, to chart the set of financial decisions that best position our members to financially flourish in the greatest number of potential futures," she says.

CREATING DATA-DRIVEN OPERATIONS

Focusing on technology to improve customer experience is only one part of utilizing big data. Financial services companies can also benefit from analyzing their own operations to drive innovation and improve efficiency.

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For example, PensionsBee, a UK-based pension consolidator and provider, is built entirely on data science. Founder Romi Savova says no proposition at her firm will ever come to pass unless it is fully supported by data in a way that suggests a change will help the business.

"We have made everyone a data scientist," she says. "Data is our culture, and everyone knows they will need to present evidence based on our data if they want to get things done. If a product manager has a proposal, it will go nowhere unless they can validate it with data."

Ms. Savova says that all the information the company receives from customers — regardless of whether it is via an app, live chat or website form — is quantifiable, measurable and can be collated in a central format. This helps identify patterns in customer behavior or where systems might be off.

"We can look across multiple channels and identify where things need to change. We can make those changes quickly," Ms. Savova says.

United Income also collates its data in one place, which Ms. Kelly says is critical to ensuring the organization makes the most of its analytical potential. However, she adds, there is still much more to come.

"Our technology allows us to aggregate all of these data into a single, decision engine that can optimize across all of these open parameters. It's extraordinarily powerful, and it is exciting to think that we've only just started to unleash that power," she says.

As asset managers and asset owners dig into their collated data, they can unlock insights ranging from discovering the most effective marketing channels and strategies to optimizing their trading processes whether it's for foreign exchange, private equity co-investments or whatever asset class needs attention.

FIGHTING CYBERCRIME

Big data and data science are key to driving organizations forward, and they also can help insulate firms from outside threats.

Indeed, financial services firms are under a real and increasing threat from cybercrime. Since 2014 there has been a 1700% increase in the number of cyber-attacks reported to the Financial Conduct Authority, the UK's financial regulator[1].

While there is only so much data an individual can analyze and interpret, the support of real-time data analysis tools make it possible to automatically detect unusual activity within networks and thus preempt criminal activity.

"Techniques like intrusion detection, encryption and penetration testing lend themselves easily to new technologies," says Ms. Savova. "Combining human experience with technology is a powerful way to detect anything strange."

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LOOKING TO THE FUTURE

Using data intelligently is the future for asset owners and asset managers. Not only can effective data analysis improve customer experience, it also has the potential to improve operations and protect against external threats.

However, even with the widest datasets and most powerful technology, human capital can still make the difference between a successful operation and a mediocre one.

"The technology needs the right people behind it," says Ms. Savova. "We need to have the best people and the best systems."

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END NOTES

1   https://www.fca.org.uk/publication/documents/cyber-security-infographic.pdf