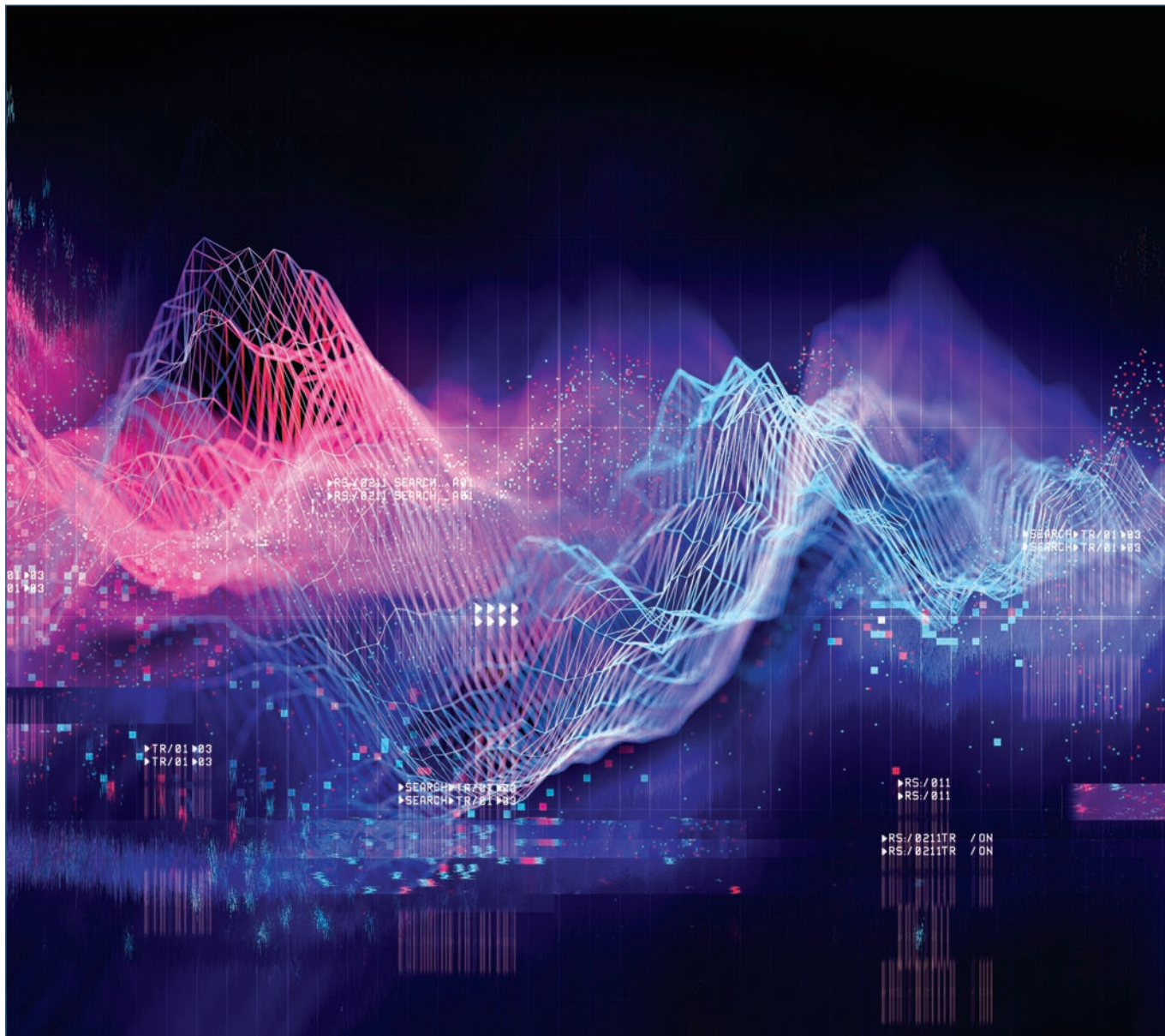# Shaping the future of risk and finance with analytics

As global financial institutions face changing compliance targets, demand has emerged for new ways to improve efficiency and increase the integration of regulatory and finance initiatives into organisations' business-planning processes

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International Financial Reporting Standard (IFRS) 9 triggered an organisational re-evaluation by many banks. The move from an incurred approach to a forward-looking one has resulted in a corresponding increase in the need to create and deploy new models. Advanced analytics now play an increasingly important role in helping banks develop and manage these models, particularly in light of the ability of artificial intelligence (AI)[1] and machine learning[2] to enhance capabilities in this area.

Banks that make the most of these changes by innovating to develop a more collaborative internal structure – particularly between risk, finance and IT – will gain a competitive advantage in this evolving regulatory landscape. However, bridging the gap between the current understanding and use of such innovations and the ability to fully deploy advanced analytics to the greatest effect remains just out of reach for many firms.

So how can advanced analytics be used to both satisfy regulatory requirements and increase competitiveness and profitability? And how can organisations develop the correct infrastructure to support such an approach?

Collaboration

To begin with, collaboration is key – primarily between chief financial officers (CFOs) and chief risk officers (CROs),[3] but also among other parts of the organisation. Earlier this year, SAS convened a meeting of a variety of market participants to discuss the opportunities and challenges banks currently face when addressing the rapidly evolving risk and regulatory landscape. A cross section of financial services executives and senior managers represented risk management, treasury and IT, as well as more focused areas such as regulatory capital, stress testing and even AI and machine learning. The event could almost be viewed as a microcosm of the present situation within the industry: all of these individuals and their teams are focused on the same problem, but they come from very different functional business units.

It was clear from the discussion at the event that the need to view this journey as a collective exercise within the organisation is generally accepted. It was also clear that the issue is not viewed as a simple box-ticking exercise – for many of these firms and for others in the industry, the aim is to create a single approach that can be fully integrated into business-planning systems and processes and that can enable data analytics at a very granular level.

As such, IFRS 9 has led many banks to realise that greater collaboration between risk management, finance and IT is necessary to create the processes and infrastructure that play a major role in ensuring compliance. This is particularly important when it comes to increased data needs brought on by changing regulatory requirements. There is a growing need to generate reliable information more quickly, which means banks must collect more data – both current and historical – from many more sources within the organisation.

"A lot of banks are re-evaluating their approach in this area and IFRS 9 was the point at which this re-evaluation happened," says Darryl Ivan, national executive, risk management at SAS Canada. He adds that organisations in this position should not underestimate the need for more granular data to support the increased use of analytics throughout the organisation – not just within the risk function. "The CFO has to report the organisation's results and needs to understand what those results mean. So everyone is facing this challenge," Ivan says.

Innovation

By creating a shared technology platform that incorporates new technology and solidifies the integration of the risk and finance functions, organisations can make use of advanced analytics to solve multiple problems across the business. This will increase efficiency and enhance performance, and can even provide scope for organisations to gain a competitive advantage. However, banks must create the necessary internal systems and processes for such an initiative to succeed, putting time and effort into developing the right tools to support the use of advanced analytics.

AI and machine learning remain in the early stages of development in industries such as financial services, but there is great potential to successfully apply these technologies in this arena. For many banks, the use and application of such technology has so far been limited to business segments such as fraud and marketing.

"Those applications have been in these areas for a long time; they are the two traditional areas of use to date," says Troy Haines, senior vice-president, risk research and quantitative solutions at SAS Institute. However, research into new uses for such technologies is ongoing. Many banks experimenting with these tools have started to realise the major potential for addressing new and growing data needs that have come about as a result of updated regulatory requirements such as IFRS 9.

For example, credit scoring is an area seeing significant research and innovation at present. "In relation to originating loans or making specific decisions on customers, this is a tough area, depending on your regulatory environment," Haines says. Nevertheless, he believes the idea of developing applications that use rank ordering to enable decision-making is currently generating a great deal of interest among banks.

Automation

Model calibration and the updating of processes are also benefiting from increased exploration into the use of automation among banks. "Depending on the type of model, this is typically a very laborious and time-consuming process for a lot of the right reasons, but we do see some banks now applying more automated techniques for calibrating complex models or complex systems of equations that we know take a long time to manually calibrate one equation at time," Haines says.

"SAS is doing active research in three or four areas in relation to machine learning and AI," he adds. "One is equality. So we all know – or we should know – how noisy data can be. Are there approaches with new technologies or newer technologies that can speed up or automate in this area? 'Robots' is a common term among consultants. But can you automate this process? We're doing some work on that area in the context of risk and finance data."

There is certainly a wide spectrum of experimental research and development ongoing within the industry as organisations attempt to find new and more efficient applications in this area. This is particularly important given the current need for faster insights via more reliable data. Data quality is a key area of focus to ensure the platforms are using the best information to create the necessary analytical tools for both risk and finance professionals. For example, banks could use AI or machine learning to replace a simple rules-based approach with more model-based decisions on the quality of data, making determinations in relation to transformation or dealing with outliers and anomaly detection.

"AI, machine learning or other types of algorithms could be used to improve the quality of data that organisations use for risk and finance modelling purposes," says Haines. But, again, it may take some time for

[1] SAS, Artificial Intelligence: What it is and why it matters, https://bit.ly/2lXprUP
[2] SAS, Machine Learning: What it is and why it matters, https://bit.ly/2prn4Lx
[3] SAS, The evolving relationship between finance and risk, July 2018, www.risk.net/5759596

regulators to become comfortable with such uses, and so he says it should be looked at as an extension of current methods of dealing with outliers. "I think regulators are more comfortable with that approach," Haines explains. "If an organisation says 'I'm using deep-learning algorithms for data quality and I'm changing all my source data', a regulator would get nervous about that."

Integration

So how should organisations go about reassessing their internal systems and processes under IFRS 9 to develop a fully integrated platform? For many, this process is viewed as a journey. "It's not a case of simply buying something – it's a journey to get there." Ivan says. "Some of the organisations we work with have taken a very pragmatic approach. They build a solution in-house, and that has helped them to understand their requirements so now they are ready to explore how to involve a provider to build up the platform."

While Ivan does not believe anyone in the industry has built a complete solution yet, there are many organisations that are already well positioned to make this journey. John Sjaastad, senior director of global risk consulting

at SAS Institute, agrees: "The industry has evolved to a point now where some banks really have developed efficiencies in this process, but there is still a way to go for all banks in terms of getting multiple uses out of the same platform."

Sjaastad adds that organisations in which there is already integration and discussion on these issues between the CFO and the CRO have become quite efficient at executing this process. "Their models are relatively mature and fairly robust, and they can gain insights into what's happening across their businesses and how their businesses are correlated from a revenue perspective," he says. Such results can be replicated by other organisations that take the same approach.

Once CFOs and CROs develop an awareness of the types of analysis that can be performed under such a system, and the speed of execution possible. This very quickly becomes a critical financial/capital planning capability that can be used to make better capital allocation and business decisions. Banks that use these regulatory changes to reassess internal systems and processes in this way can transform risk management into an innovative source of value that benefits the entire organisation.