

Transforming Horizon Scanning and Stress Testing in Financial Services

THE DIGITAL FUTURE OF FINANCE

In June 2019, The Bank of England (BoE) published its *Future of Finance*¹ report, following extensive consultation with the market. Future of Finance makes detailed recommendations about the BoE's urgent need to adapt to the regulatory, technological and societal changes underway in the UK (and globally). These are likely to cascade down to the financial institutions it regulates and impact the shape of financial services more broadly.

While financial services organisations (FSOs) anticipate tighter regulatory requirements, it's useful to look at the report's recommendations – and the BoE's response. A clear understanding of the BoE's position will enable FSOs to plan ahead, tailor their approach to these new regulations, and prepare cost mitigation strategies.

Future of Finance recommends that the BoE become a world leader in digital regulation. It concludes:



...Machine learning and new data sets can strengthen the Bank's armoury to spot irregularities and get a better picture of the system's overall health and emerging risks. There is huge scope to use advanced analytics and new data sets for macroeconomic trends, financial surveillance and supervision. The explosion in data in finance demands new techniques"

¹ <https://www.bankofengland.co.uk/report/2019/future-of-finance>

The BoE has set out three initial areas of improvement to its current operating model:



STANDARDISED DATA INPUTS

Adopting fixed formats/taxonomies for data ingestion.



MODERNISED REPORTING INSTRUCTION

Making data requests using coded queries (instead of natural language).



IMPROVED REPORTING ARCHITECTURE

Adopting automatic - and direct - 'pull' of data from banks, when required.

These initiatives will underpin one of the BoE's core regulation pillars: monitoring institutional metrics such as countercyclical buffers and capital/liquidity ratios. This digital overhaul aims to cut risk and enable the BoE to target institutions which require supervision.

Yet the BoE's role in anticipating less-defined threats to UK economic stability will remain highly complex. Systemic risks – climate change, rapid-shift demographic upheaval, global market turbulence, pandemic fallout – will continue to drive macroeconomic trends and add to volatility.

THE NEXT WAVE OF FINANCIAL SERVICES REGULATION

The recommendations set out in Future of Finance – and the BoE's commitment to safeguard the financial system – indicate the introduction of broad, machine-executable data tracking to pinpoint early-stage signals of institutional and systemic risk.

This will increase regulatory demands on FSOs, in relation to physical and transition risks and their impact on balance sheets. Indeed, mandates from global central banks already require significant time commitment from financial institutions.

FSOs are likely to encounter tougher central bank regulatory requirements and supervisory action in two broad categories:

TRADITIONAL SUPERVISION

(e.g. Liquidity Ratios)

- Metrics/threshold-driven.
- Transparent and easy to communicate.
- Based on limited set of data from institutions.
- Collection/processing methodology enhanced over next 5-10 years through FSO initiatives, potentially becoming largely automatic.

STRATEGIC RISK MANAGEMENT

(e.g. early indicators of bank vulnerability based on exposure in distressed regions)

- Based on highly diverse datasets; traditional supervision data augmented by broader, more comprehensive data (e.g. World Bank, Bloomberg, socio-demographic open data etc.).
- Risk flags based on observed relationships between variables, rather than specific thresholds.
- Results may be less specific/less easy to communicate to non-technical audience(s).



THE POWER OF AI TO MANAGE STRATEGIC RISK

AI-driven strategic risk management complements existing regulatory and risk activities within FSOs. It enables them to draw warning signals about future economic shocks from a universe of data that is vast, diverse and continually evolving. Teams can scan the short-, medium- and long-term horizons for emerging problems, and act when risks become threats.

Contrast this with traditional data mining models, which are simply unable to deal with the sheer volume of data available. Obstacles include cost – in personnel and time – and the inability to manually sort relevant signals from insignificant noise.

The internal data held by every financial institution – especially when combined with external data such as mobility, demographic, behavioural, trade etc. – contains a wealth of early-warning patterns and signals. Vulnerabilities can be detected in obvious and ‘hidden’ places. For example, a bank’s balance sheet might suggest healthy performance, while signals drawn from the LinkedIn profiles of its workforce might suggest problems ahead.

Utilising the power of AI allows FSOs to exploit the potential of their internal data. By augmenting it with external (real-world) data sources, they can draw out statistically significant patterns and identify thousands of previously undetectable indicators of physical or transition risk.

FSOs, of all sizes, gain a comprehensive set of indicators – right across their balance sheet – for counterparties and sectors in need of intervention.

THE ADVANTAGES OF USING AI IN HORIZON SCANNING AND STRESS TESTING:



CONTINUOUS EARLY WARNING SYSTEM

Alerting FSO to urgent balance sheet problems. Organisations can begin tracking early-stage risk indicators, allowing sufficient time to act, or join forces with counterparties to support their own mitigating operations.



DYNAMIC DATA FEED

A broad spectrum of world events (from crop failures to mine closures) are correlated with the institutions exposed to these events.



EASILY VISUALISED RESULTS

Explainable and actionable – even without an in-depth understanding of exposure variants across all industry verticals.



FACILITY TO ADAPT RAPIDLY

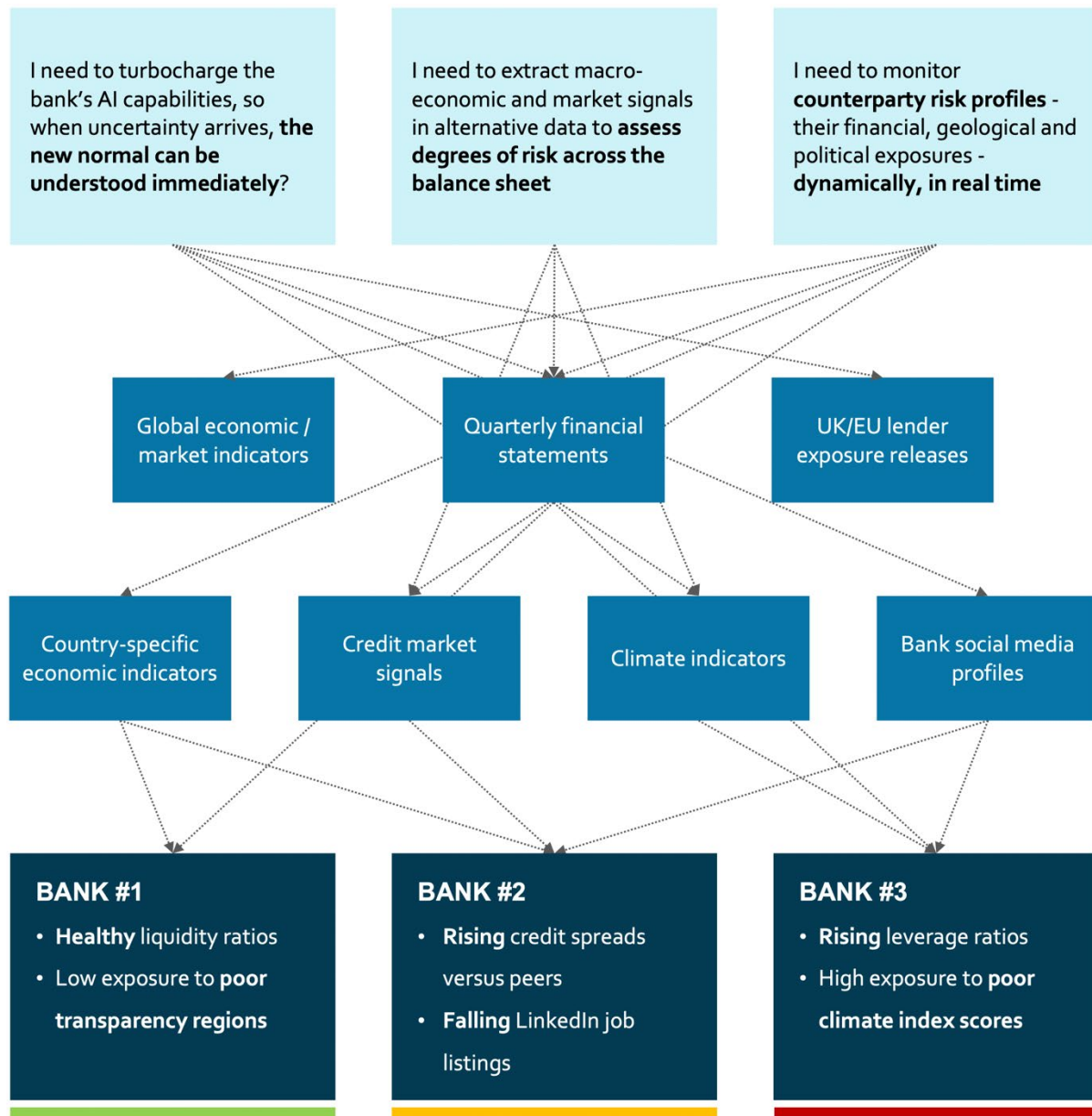
FSOs can respond instantly to any crisis/market shock – by utilising the most up-to-the-minute data (e.g. last 2 weeks to refit models). This is the only way to stay ahead of the evolving economic 'new normal'.



IMMEDIATE IMPACT

Available technology can be deployed in micro-timescales, to deliver instant results. No need to wait for new IT programmes/infrastructure to be built.

RISK MONITORING: TYPICAL QUESTIONS AND AI-DRIVEN RESPONSES



A NEW BREED OF FSO, POWERED BY SPARKBEYOND

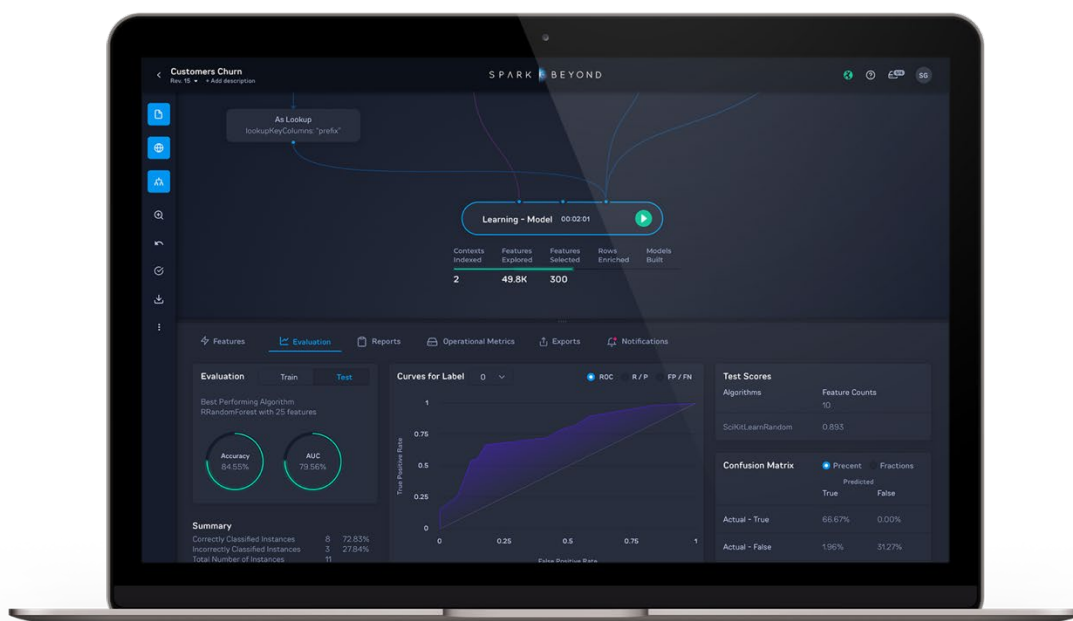
Over the last decade, a growing number of FSOs have adjusted their business models and innovation strategies to take advantage of new technologies such as AI. Successful players have used AI to unlock the potential of their internal data, extracting value with speed and accuracy.

Advances in AI continue to lower the entry barrier for less technical users, allowing FSOs to exploit insights previously hidden deep within their data. Combined with GDPR-compliant, real-world external data, these insights generate risk predictions that are precise and fully explainable.

SparkBeyond's AI-powered platform is a global hypothesis search engine which interprets, at speed, the world's most complex and dynamic data environments. Using humanity's largest curated directory of functions and algorithms, it combines internal and external datasets to formulate and test hypotheses at a velocity of over 1 million per minute.

By scanning external sources – e.g. a nation's economic assets, such as its banking system – it searches for risk signals (obvious and hidden). How exposed are lenders to seasonal floods? Are investment banks exposed to governments with poor transparency scores? Are leverage ratios accelerating this quarter?

Automatically testing millions of ideas in minutes, SparkBeyond accurately predicts real-time risk across an organisation's balance sheet, with tailored views per industry, and offers fully analysed reasons behind each risk.



ABOUT SPARKBEYOND

SparkBeyond is powering a new breed of market leaders, leveraging AI to accelerate the process of turning data into impact. By augmenting internal data with external sources and massively scaling the interrogation of data, SparkBeyond amplifies the discovery of hidden insights and drivers of positive outcomes. From risk scoring and fraud detection, to demand forecasting and churn reduction, SparkBeyond helps global organisations drive tangible and lasting impact across a broad range of use cases. Learn more at www.sparkbeyond.com.



Powering decision intelligence at forward thinking global organizations

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