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Phone: +1 646 783 7100 | Fax: +1 646 783 7161 | customerservice@law360.com

Risks And Promises Of AI In The Financial Services Industry

By **Michelle Kirschner, Jeffrey Steiner and Sara Weed** (June 13, 2024, 5:11 PM EDT)


Michelle Kirschner


Jeffrey Steiner


Sara Weed

Artificial intelligence has untold potential for profound implications and transformation of society. It will play a pivotal role across all industry sectors globally, not least the financial services industry.

AI may completely reshape the financial services landscape by redefining the nature of financial intermediation, risk management, compliance and prudential oversight. As this exciting journey is just beginning, it is hard to imagine where it will take us.

AI has been used in the financial services industry for some time, with typical use cases including customer service chatbots, consumer credit evaluations, anti-money laundering and anti-fraud analytics, and investment management services. However, the advances in generative AI since the launch of ChatGPT in November 2022 and competitor iterations represent a significant leap for the technology.

GenAI can be adapted to a broad range of applications in the financial services sector, such as leveraging GenAI to augment AI-powered fraudulent- and suspicious-activity detection systems and leveraging in-house data sources to assist financial advisers with insights into companies, sectors, asset classes and capital markets.

More widespread adoption of AI has the potential to deliver significant benefits for consumers, firms and the wider economy. For consumers, those benefits include the delivery of more tailored financial products and services and a more seamless customer experience using natural language processing, as well as voice, document, image and facial recognition. For firms, the benefits include increased operational efficiency by reducing costs and freeing up expertise to work on more complex tasks.

However, there are potential risks, and, in some cases, those risks currently pose significant disincentives to the adoption of AI — particularly, GenAI — broadly within the highly regulated financial services sector. And while it is true that emerging GenAI use cases do not present new risks, their reliance on large unstructured datasets has the capacity to amplify risks that are already well understood by financial institutions, which in some cases rely on more primitive versions of AI today.

Data Risks

AI begins with data. Many of the benefits and risks of AI can be traced back to data rather than the AI model itself; the AI model can only ever be as good as the dataset on which it was trained. Data risks are a primary driver of risk in the use of AI. Data quality is key.

Unique challenges arise from the use of alternative, unstructured and synthetic datasets — such as biometrics, shopping patterns and images — which can amplify data quality issues like bias and inaccuracies.

While synthetic data — that is, data that is generated algorithmically, rather than from actual events — is attractive as it eliminates, to a great extent, the data privacy issues that arise from the use of "real" data, synthetic data presents the need to ensure that such datasets are suitable for the intended use by extensive testing on actual data.

Many of the risks emanating from the data can be appropriately managed by financial services firms by using existing processes around data strategy, data governance and privacy, and by observing of appropriate data standards and regulations.

Model Risks

The second primary driver of risk in the use of AI is model risk. Model risk may be caused by inadequate model specification, poor model implementation or incorrect use of the model. Two particularly difficult issues relate to robustness and explainability.

GenAI models can generate new content based on the training data they have been fed and can produce incorrect but plausible output, which is generally referred to as a "hallucination." It is the risk of hallucinations that appears to be causing financial services firms the greatest concern when considering the adoption of AI in their businesses.

While the hallucination risk can be significantly reduced through the adoption of proprietary GenAI using more focused, better quality and more transparent training data, the risk cannot be eliminated. Consequently, financial services firms need to ensure that they employ all the usual checks and balances when relying upon the output of GenAI systems.

Of course, in the highly regulated financial services environment where consumers may rely on the output where it constitutes investment advice, supreme caution would be necessary together with appropriate governance and oversight to ensure that outputs are accurate and explainable. This leads us to a further risk of AI, that of explainability.

Financial services firms must be able to explain their decisions to a range of stakeholders, including customers and their regulators. However, ensuring explainability of decisions when using AI algorithms is complex and, in many cases, may be impossible, as there may be no way to understand how AI systems are making decisions. This "black box" problem is likely to continue to be a challenge for the financial services sector's adoption of GenAI.

The Divided Regulatory Landscape

Here, the debate surrounding AI regulation becomes significant. Currently, Western governments accept the need for a degree of international alignment in AI regulation, and share a commitment to safe, secure and robust AI. However, they diverge on the transparency and traceability burdens to impose in

the name of ensuring AI products are robust in nature. This presents a difficult landscape to navigate for those operating internationally within the financial services sector.

U.S. regulators have expressed that existing laws, particularly those specific to risk management, afford the tools necessary to regulate financial firms' use of AI absent new regulations. That is not to say, however, that U.S. regulators have been reserved in expressing their expectations as to responsible use of AI. For example, the U.S. Securities and Exchange Commission, the U.S. Commodity Futures Trading Commission and the federal prudential banking regulators have been clear that they are focused on AI and are directing resources to address AI use cases subject to their jurisdiction.

In contrast, the European Union emphasizes the need for new regulation that is more preventative and less reactive. This is reflected in the EU Artificial Intelligence Act, passed in March, which imposes levels of regulatory obligations upon different stakeholders across a spectrum of AI use cases.

The U.K.'s current stance sits between those of the U.S. and EU: A government white paper from February favors a voluntary, context-based approach, while acknowledging that this "may miss significant risks posed by highly capable general-purpose systems and leave the developers of those systems unaccountable," and suggesting that "in time, [the U.K.] want[s] to place targeted mandatory interventions on the design, development, and deployment of such systems to ensure risks are adequately addressed."[1]

More recently in the U.K., each of the sectoral regulators, which in the context of financial services includes the Financial Conduct Authority, the Bank of England, and the BoE's child organization, the Prudential Regulation Authority, were required to publish an update to their strategic approach to AI. The BoE and the FCA have each concluded that they are regulators of financial institutions and are technology-agnostic. Neither regulator is keen to seek to regulate AI as a technology, but instead prefers to — and arguably only has the mandate to — regulate how firms may choose to use AI.

Both financial regulators in the U.K. consider that they already have in place a regulatory framework that appropriately supports the delivery of AI benefits while addressing both the prudential and conduct risks posed. The BoE considers that the primary tools in its regulatory armory to address these risks are (1) its requirements around model risk management;[2] (2) the senior managers and certification regime; and (3) general organization requirements and its requirements relating to corporate governance.[3][4]

The FCA, for its part, considers that its key tools are (1) its published principles for businesses and threshold conditions; (2) its requirements relating to operational resilience, outsourcing and critical third parties; (3) the senior managers and certification regime; and (4) the consumer duty.

Conclusion

Like regulators, the financial services industry is dedicating energy to better understanding and evaluating the opportunities and risks inherent in wider-scale adoption of AI and GenAI. Until such time as firms can be confident that launching customer-facing GenAI applications, or even internal applications, will not produce inappropriate outcomes such as hallucinations, we can expect financial services firms to continue to be hesitant.

Essentially, the two key drivers of risk — data and model — need to be appropriately addressed for the power of GenAI to be fully realized in the financial services industry.

Michelle Kirschner, Jeffrey Steiner and Sara Weed are partners at Gibson Dunn & Crutcher LLP.

[1] U.K. White Paper, "A pro-innovation approach to AI regulation: government response," Feb. 6, 2024, p. 32.

[2] SS1/23 – Model Risk Management Principles for Banks.

[3] SS5/16 – Corporate Governance: Board responsibilities.

[4] The Bank and the PRA's response to DSIT/HMT: update on our approach to AI | Bank of England.