



New brain power for high-volume transaction screening

**How artificial intelligence is helping one bank
handle millions of critical alerts every month**



kpmg.co.uk/changingfutures

High-volume administrative tasks are a feature of every business. They are time-consuming and labour-intensive, taking employees away from activities where they could be adding more value.

Artificial Intelligence and Machine Learning can help businesses complete these tasks more efficiently – faster, with less errors and at less cost – and often with a positive impact on customer experience.

For a global tier-one bank, we developed the KPMG Sanctions Alert Classifier, a supervised Machine Learning algorithm, to help with the task of reviewing over 100,000 'sanctions alerts' every day. These alerts, generated by the bank's sanction screening systems, trigger on transactions that might involve sanctioned parties and/or jurisdictions. More than 95% of the alerts are false positives, but customers must still wait for their flagged transactions to be cleared.

The Classifier assesses each alert to determine whether it requires further investigation – freeing employees from the labour-intensive process of 'first pass' review. In addition, the tool is designed to assess and classify alerts more accurately and more quickly, improving service for customers and helping reduce compliance risk.

The bank is set to save significant amounts in operational costs every year as a result of the efficiencies made possible by the Classifier.

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High effort, low efficiency

Ensuring transactions do not violate sanctions is a critical activity for banks (and, indeed, for all businesses and individuals, who must comply with financial sanctions requirements). Businesses need to get this right to mitigate their risks of criminal liability, reputational damage and regulatory fines. In fact, global regulatory fines for sanctions violations have exceeded US\$11 billion in the past 10 years¹. But the process of checking transactions is time-consuming and labour-intensive.

The client was reliant on a substantial team of reviewers to make a decision on each of the tens of thousands of alerts being generated by the bank's screening systems every day. This was the first part of a dual control (or 'four eyes' check), requiring two employees to review each alert before making a call as to whether the alert was a false positive (e.g. not involving a sanctioned party and/or jurisdiction) and could therefore be discounted.

Over a two-year period, the bank had been fine-tuning their systems – but 100,000 alerts a day were still being generated with the majority of these turning out to be false positives. Transactions were being delayed unnecessarily as bank employees investigated further, with a detrimental impact on efficiency and customer experience. The bank wanted to make the whole process faster, without compromising its effectiveness. Identifying and eliminating false positives held the key.

Our data scientists knew that, with access to historical data on alerts previously assessed and classified by humans, they could achieve a dramatic drop in the number of alerts requiring human review.

1. US Department of the Treasury, Office of Foreign Assets Control

The Sanctions Alert Classifier is capable of processing one million alerts per minute, a task that would take a team of human reviewers over a month.



Data driving better decisions

We developed a tool that sits above the bank's existing system and classifies each alert, determining whether it's a false positive (in which case, the transaction can proceed to the next stage of review) or whether further human review is required to make a decision.

The tool has eliminated 80% of the false positives flagged by the bank's sanction screening systems, dramatically reducing the workload for human reviewers. In addition, it achieves an accuracy rate of over 99.9% in terms of classifying alerts correctly. This compares to an expected accuracy rate of 95% when humans were carrying out the 'first pass' review.

The tool achieves this by learning from tens of millions of historical alert decisions. In this way, it effectively draws on the aggregated experience of

hundreds of human reviewers over time. (By contrast, decisions made by a human reviewer depend on a single person's experience.) Pooling information from all previous alert decisions made by human reviewers helps the tool minimise the unavoidable errors and biases associated with human decisions.

Unlike most sanctions screening-related tools on the market, the Sanctions Alert Classifier is not a black box. With black box systems the inputs and outputs of the system can be viewed with relative ease, but the inner workings are not accessible. Our tool is built using open source tools and produces a human-readable rationale for each alert decision made. Importantly, this means the bank is not only able to interrogate the tool and establish that it works as expected; it can also demonstrate this to auditors and regulators.

Everyone wins

The Sanctions Alert Classifier is capable of processing one million alerts per minute, a task that would take a team of human reviewers over a month. The cost-savings for the bank are impressive. The reduced reliance on human reviewers has resulted in a 50% reduction in costs, representing a saving of significant sums of money a year.

Transformation take-outs

Our success in developing and deploying the KPMG Sanctions Alert Classifier, is evidence that Artificial Intelligence and Machine Learning can be successfully deployed by businesses operating in the regulatory compliance space.



Understand your 'use cases'. Your journey begins with understanding the human processes that drive your business, and identifying how Artificial Intelligence and Machine Learning can be used to improve them. Alongside, it is crucial that you evaluate and understand your Artificial Intelligence maturity, including assessments of your business's skills sets and your current infrastructure.

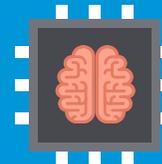


Find the right partner to accompany you along your journey. The melding of data and subject matter expertise is crucial for the successful application of Artificial Intelligence and Machine Learning. Where you have gaps in either area, engage the right partner, who understands your business and operational objectives. KPMG was able to provide the client with the right resources, including world class data scientists as well as subject matter experts with deep industry knowledge and experience.



Engage with regulators from the onset.

Understand that stakeholder engagement extends to regulators. A key facet of our success was the transparent way in which we conducted this project. KPMG engaged the regulator from the onset and continued to do so throughout the life of the project. In addition, the KPMG Sanctions Alert Classifier was built using open source tools ensuring full auditability for the client and regulator alike.



Augmenting your intelligence. The application of a supervised Machine Learning algorithm, to aggregate the knowledge of human reviewers, enabled the client to automate a heavily manual and labour intensive process. With our solution in place, the client is able to decision sanctions alerts faster, more accurately and consistently, when compared to human review. This in turn, frees up resources to concentrate on more complex tasks.

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