Mindtree
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Tookitaki

Redefining financial crime prevention with **cutting-edge AI/ML**

As today's world rapidly embraces digitization, the emphasis on fighting financial crime, money laundering, and terrorist financing using cutting-edge technology is on the rise. Due to the global phenomenon of digitalization, the amount of 'wire' activity is growing significantly, increasing the pressure on banks and financial institutions to monitor and detect suspicious activity prudently. This is a challenge as most banks still use archaic tools with an immature services ecosystem that depends on manual rules creation and lack self-learning capabilities.

Banks' existing rule-based alert systems fall short of modern requirements as they address only a known set of scenarios. The result is a high percentage of false positives and negatives, while missing the truly suspicious incidents. This further leads to revenue loss, heavy penalties for non-compliance, and loss of brand reputation and image.

Welcome to possible

A Mindtree Whitepaper

Challenges in modern financial crime prevention

Growing datasets, disparate transaction data systems, integration issues with monitoring systems, and changing regulatory norms are leading to new rule creation every time — a time-consuming and costly exercise. Hence, Artificial Intelligence (AI) and Machine Learning (ML) are coming into play in this space as banks need to move beyond a mere rules engine and must adopt dynamically adaptive predictive models or a dynamic workflow engine. This shift would enable real-time, transaction-based KYC anomaly detection, and AI/ML's highly refined self-learning models focus on anti-money laundering detection and timely SAR (suspicious activity report) filing.

Recently, experts have realized the significance of analytics in combating money laundering. Most importantly, this pandemic resulted in the creation of shell companies to launder money as digital communication became a more common vehicle. Moreover, the pandemic has been used as an excuse to not meet the bank in person for compliance checks. This exposed banks to larger risks of financial crimes in client onboarding and relationship management.

Current Anti-Money Laundering (AML) compliance programs within banks are siloed with no or limited knowledge from peer banks. They lack a mechanism to share insights and patterns across banks, geographies, and even different business units within the same bank, resulting in insufficient and ineffective coverage of AML risks globally. While regulators are encouraging sharing of data and insights for better compliance, banks' adoption rate on sharing and management of AML policies and dynamics is negligible.

Despite financial institutions and banks spending exorbitantly worldwide, there are several reasons why this investment is not having the impact that it should, including:

- Lack of transparency — Investigators often struggle to identify false positives quickly and accurately because money launderers have learned ways to bypass rules engines to avoid discovery.
- Lack of collaboration — Individual institutions are building their AML programs around their own specific products, customer types, and locations, with limited knowledge of suspicious patterns of behaviors being observed across their peers.
- Lack of resources — Financial institutions struggle to keep pace with implementing new rules. They are plagued with high false positive volumes and file too many low-quality or unnecessary reports because they are incentivized to cover their backs rather than applying sensible risk criteria.

In this context, regulators recognized that rules alone are not an effective method of detection and are thereby pressurizing banks to include more advanced analytics. The reason behind this is that financial institutions face challenges regarding:

a) Setting up the correct threshold levels and parameters — When thresholds are set too low, the system will populate a high number of alerts that require analysis. On the other hand, if thresholds are set too high, the number of alerts will decrease, but the bank may not detect all suspicious activities and will fail to meet regulatory requirements, risking both reputation and exposure to fines.

b) Identifying 'false positives' quickly and accurately — Analysis of alerts may be time-consuming. However, it must be completed with a sufficient level of scrutiny to ensure compliance with existing governance processes. False positives, which are likely to be the biggest challenge, should be identified at the right time and removed as quickly as possible.

c) Complying with global and regional laws and regulations.

d) Accurate and timely reporting.

e) Streamlining operations to minimize costs.

Disruptive technology is the key – AI/ML

The only answer to all the aforesaid issues is applying AI/ML in transaction monitoring and screening. Banks and FIs need to have robust decision-support systems by leveraging a machine learning powered predictive analytics platform that uses a self-learning mechanism on the predictive models to continuously evolve with new data points and user analysis.

The platform will provide highly accurate decision support using model prediction and confidence scores and it will also have detailed audit features for recording the model's output to trace the rules creation. This will enable continuous improvement of prediction accuracy and will drive operational efficiency. Such capabilities will empower banks to move from static rule-based applications to a dynamically adaptive system, driving significant operational efficiency in its processes. We are currently seeing increasing examples of machine learning in many areas of technology. In the financial crime prevention arena, it is proving useful for:

- Identifying spikes in value or volume of transactions.
- Monitoring high-risk jurisdictions.
- Identifying rapid movement of funds.
- Screening against sanctioned individuals and politically exposed persons (PEPs).
- Monitoring enlisted terrorist organizations.

Banks and financial institutions should grasp this opportunity for repetitive analysis. To fulfill this wish of the banks, IT solution companies should try to build robust predictive analytics platform using cutting-edge ML platform that would help the banks move from static rule-based to dynamically adaptive predictive models. To combat with all challenges mentioned, Mindtree Tookitaki's advanced AI platform has the following capabilities:

- Dynamic model – Create accurate models using assets of a mathematical model for dynamic workflow creation.
- Self-Learning – Keep models updated through in-built self-learning technology with the ability to identify only those transactions which are genuine risks that need to be reported.
- Audit – Often ML models are treated as black box. The advent of 'glass-box' AI and real-time audit capabilities will give an edge to banks and FIs as regulators want every alert to be audited.
- Prediction with confidence scores – High accuracy with confidence scores provides comfort to take a decision based on model predictions.
- Deployment – Faster time to market by deploying models in internal production environment.
- Adaptive coverage – Capture changing customer behavior and detect suspicious cases with global typology library, without the need to apply any personally identifiable information (PII), rules and thresholds.
- Tackling cryptolaundering – In recent times the use of crypto assets for money laundering remains a top concern for both financial institutions and regulators. With banks' existing systems, detecting complex cryptolaundering cases is a significant challenge in unknown terrain. The Mindtree-Tookitaki's advanced AI platform can automatically convert money laundering typologies into a machine-readable format and use the information to train systems to detect cases of similar patterns in the bank's existing activities.
- Library of typologies – The platform has a library of over 100 money laundering typologies that can be converted into over 5,000 risk indicators. We seek to create a marketplace of these typologies serving as plug-ins for banks which already have the platform in place.

Numbers from a large-scale AI/ML deployment

Mindtree Tookitaki's advanced AI platform was deployed in a leading Asian bank and we achieved the following results:

- Name screening: 70% reduction in false positives for individual names and 60% reduction in false positives for corporate names.
- Transaction monitoring: 50% reduction in false positives with less than 1% misclassification and 5% increase in true positives (Fileable SARs).

To conclude, we would like to state that by replacing legacy systems with a cutting-edge ML/AI platform, banks can substantially reduce operational costs, effectively tackle highly unbalanced data, improve alert prediction over time, increase reporting accuracy, and improve compliance. In a nutshell, this disruptive technology will play a crucial role in the modern landscape of preventing financial crime.

About the Authors

Subhasis Bandyopadhyay

BFS Practice Head | Mindtree Ltd

Subhasis Bandyopadhyay heads the BFS practice at Mindtree. He is responsible for offering leadership and direction for BFS solutions, domain consulting, alliance management and domain competence building.

Sagar Sinha

VP, Sales & Channels, APAC & Middle East | Tookitaki

Sagar Sinha is Vice-President of Sales & Channels for the APAC & Middle East. Prior to Tookitaki, he had worked since 2001 as a technology consultant to the financial services industry. Sagar has a strong system knowledge of leading platforms in Capital Markets. He has an MBA from the S P Jain School of Global Management in Singapore.