

Transforming Financial Risk and Compliance with AI

Leverage artificial intelligence (AI) and machine learning (ML) to efficiently and accurately identify suspicious actors, activities, and reduce risk while lowering overall cost.

Introduction

A growing worldwide problem

Compliance and regulatory (CoRe) risk has become one of the greatest challenges for financial institution executives and boards of directors. There are a growing number of overarching risks in today's financial services environment: globalization and its impact on political, economic and operations processes; financial practices with significant built-in risk, such as sophisticated, just-in-time treasury and cash management; online banking and the risk of exposing customer information and accounts to unauthorized parties; risks created by outsourcing selected functions and tasks to third and fourth parties; and more.

The financial services industry is highly regulated. The sheer number of regulatory bodies and continually expanding volume of regulations make it difficult for financial institutions to keep up with the threats and level of risk exposure. Until now, many banks have responded by building fiefdoms and creating labor-intensive processes to address these risks. Costs are escalating. Training challenges persist. Reporting burdens are growing rapidly.

One of the most pressing areas of risk management for financial institutions is anti-money laundering (AML), including know your customer (KYC) requirements.

The UN office on Drugs and Crimes has estimated that between two and five percent of the global gross domestic product (GDP) is laundered annually.¹ Considering that global GDP stood at \$75.6 trillion in 2016², that means as much as \$3.78 trillion may be illegally gained proceeds that are manipulated through ML efforts annually.

While AML and KYC compliance requirements are vital to fight financial crime, they have created extraordinary challenges for the financial institutions charged with implementing them. LexisNexis Risk Solutions recently completed a study of the cost of AML compliance among European financial institutions in five key markets including France, Germany, Italy, Switzerland, and The Netherlands. The cost was estimated at a staggering \$83.5 billion³ annually.

Challenge

A growing worldwide problem

Today, departments rely on two types of analytical solutions to comply with AML and KYC requirements to manage risk within their institutions.

Analyst-driven solutions

These include solutions such as KYC screening tools and AML transaction-monitoring systems require numerous AML analysts, and in many cases, the support of external specialists to create rules that identify and trigger alerts for suspicious activities and transactions. Unfortunately, keeping the rules up to date can be a time-consuming challenge that may take three to six months to complete, and yet still results in an unacceptably high rate of false positives.

Anomaly-driven solutions

These solutions focus on using ML to discover anomalies or transactions that stand out from the norm, which the human eye might not be able to detect as easily or quickly and generating too many false positives. The typical approach for this type of machine-learning-based solution renders decisions in a 'black box' with no visibility into a system's internal workings. This simply isn't acceptable to regulators, who require decisions driven by machine-learning-based systems to be easily explainable—ultimately leading to a need to invest in specialized machine learning skills.

These two types of solutions are proving to be inadequate for several reasons

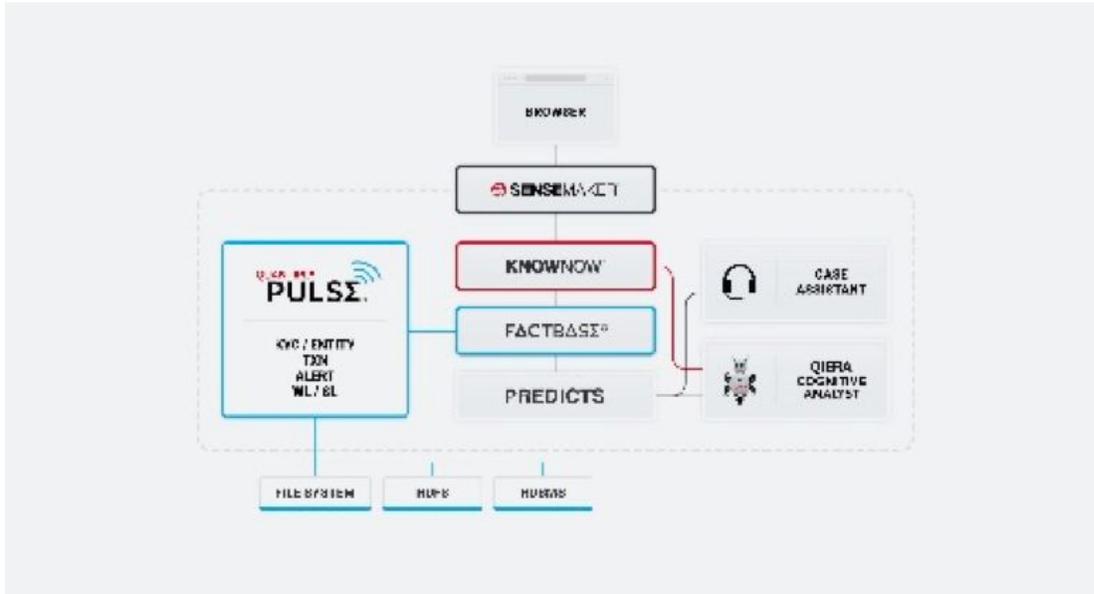
- An inherent inability to detect ML schemes for smaller amounts under a defined threshold limit
- High percentage of false positives
- No learning or generalization abilities
- Insufficient and inconsistent checking

Solution

Quantiply's AI-based solution combines machine learning and subject matter expertise for better results

Quantiply is a cognitive intelligence company whose focus is on providing AI-based systems and tools to simplify the process of meeting compliance and regulatory challenges.

Quantiply utilizes a unique combination of ML and advanced AI algorithms, working seamlessly and powerfully together to deliver far superior results. The Quantiply suite of AI applications can be quickly deployed—without having to completely replace or disrupt a bank's existing infrastructure—to deliver meaningful benefits sooner rather than later.



Introducing Quantiply Sensemaker: A suite of AI applications for large-scale cognitive intelligence and reasoning

Quantiply’s Sensemaker® compliance and regulatory (CoRe) platform accepts structured, semi-structured and unstructured information as input, automatically extracts entities and relies on strong semantic relationship analysis to generate truly actionable data. Not relying on predefined rules-based models, Sensemaker leverages unsupervised learning to derive patterns and relationships from the data itself— eliminating the need to manually create models for every new type of data or analytical problem.

For AML and KYC, Sensemaker learns from each financial transaction which behaviors involving bank customers have the potential to be malicious or fraudulent and which are likely to be benign. The solution sifts through huge volumes of structured and unstructured data and can explore hundreds of thousands of potential hypotheses at scale to devise the best predictive models. As the data changes over time, these models seamlessly adapt using machine learning algorithms.

The model has a number of core components:

Quantiply Pulse®

Pulse is a continuously learning software agent as it ingests data from internal and external sources and lists about transactions, entities, sanctions and watch lists, third-party activities, and even texts and other unstructured data, such as social media posts or news stories. It is used to rapidly onboard data from various sources into the Quantiply system, replacing the manual data collection that has been done in the past. This data can include transactions and banking records such as international and domestic wires, ACH transfers, credit card payments, loan payments, cash statements, and other reports regarding a customer's risk profile.

Pulse agents employ network-based reasoning, using machine learning and AI techniques to capture human intelligence and identify hidden patterns—automatically transforming this in real time into intelligent data about behaviors and intents for highly effective predictive models. The process is repeated every time there's new data or an AML analyst creates a new label. In addition, because Pulse is highly specialized and can be deployed right at the data source, banks can filter noise and extraneous data to more efficiently capture the precise information they need.

Quantiply Pulse is available right out of the box in three flavors of machine learning-based AI agents:—KYC Pulse™, Transaction Pulse™ and Sanctions Pulse™. All Pulse agents comply with globally accepted core policies for effective ML control: KYC (Know Your Customer), Know Your Customer's Customer (KYCC), Know Your Network (KYN), and Know Your Third Party (KYTP).

Off-the-shelf Pulse agents

Pulse is delivered with three pre-configured intelligent agents for capturing data regarding KYC sources, AML transactions and sanctions lists:

KYC Pulse provides a single view of a client's profile, incorporating all of the various financial relationships with which an account may be affiliated. The types of analytical activities may include: screening watch list names, providing high-risk country alerts, assessing financial sources or channels, analyzing political affiliations, and more. Clients are classified under various levels of risk profiles and these profiles guide the frequency and intensity of the monitoring required.

Transaction Pulse identifies transactions that pose the greatest risk for potential ML activities..

Transaction risk behaviors monitored by the Transaction Pulse agent might include: rapid movement of funds into or out of accounts, sudden activity occurring in a previously dormant account, frequent account changes, certain types of recurring transactions, hidden account relationships,, movement of funds without a corresponding trade, and so on.

Sanctions Pulse connects to various third-party sources such as LexisNexis, terrorist watch lists, the US Treasury's Office of Foreign Assets Control (OFAC) lists, and PEP lists to integrate any relevant risk

information into Factbase. This enables real-time tracking and risk mitigation from transactions involving high-risk individuals or organizations.

Configurable rules-based and algorithm-based scoring.

Today, most risk-management systems used by banks are fixed rules-based solutions. These rules can be updated or changed over time, but while they're in force, they're applied the same way to each case. The Quantiply platform takes advantage of both configurable rules to associate risk with specific individuals and algorithmic models to continuously learn from customer behaviors over time—to assess an individual's compliance and regulatory risks to the bank and mitigate them over time.

Qiera™

Once the Pulse intelligent agents have collected all of this data, it's fed into Qiera—the brains of the system. Using Quantiply's patent-pending Enterprise Digital Genome® technology, Qiera maps the myriad of events, entities (people or organizations), activities, overt and hidden relationships, associations, desired paths, and previously unidentified patterns of cause or concern. The solution then creates unique models that enable actionable insights into suspicious activity reports (SARs).

For example, Qiera can examine a particular transaction of \$10,000, \$100,000 or millions of dollars between two entities and quickly analyze all the possible connections and relationships by sorting through all the data that's been collected. Qiera can then classify that transaction as suspicious—so a case can be opened and passed along to law enforcement—or classify it as non-suspicious and provide an explanation for the regulatory bodies.

Factbase®

This component is an immutable global intelligence service that provides integrated, real-time financial intelligence (FININT) to identify and verify individuals and organizations to meet institutions' KYC and KYCC requirements. Factbase supports the long-term memory of facts that Sensemaker gathers through a machine learning-based continuing learning process. The component has been built using the fundamentals of blockchain technology so that collected data about bad actors and activities can't be altered.

When the Pulse agents glean data from published or newly discovered data sources, it automatically routes that data through out-of-box data analysis and enrichment pipelines. Users can easily define and customize these pipelines to tailor them to specialized needs and processing requirements. This can be used to proactively provide banks and financial intelligence units (FIUs) more sophisticated intelligence about customers and ML schemes.

A powerful tool called Enterprise Knowledge Graph helps investigators uncover hidden connections or parties using the PEP list, SDNs or by simply identifying other transactions, business associations or ownership status that may apply to a particular interaction—to identify and prevent ML before it occurs. Quantiply’s sophisticated network-based analysis helps banks discover the intent beyond a given transaction.

Factbase accommodates a variety of data models to ensure optimal processing of information and to gain insights that enable Sensemaker to readily answer questions or predict future actions, including the reason why they’re likely to happen. The component continually builds its global memory of entities, events, trends, and interactions through continuous learning and enrichment—and makes this information available to case managers as they work to confirm or eliminate potential criminal cases.

Benefits

Deeply understand customers and their potential risk patterns—simply, efficiently and in real time

Improved case intelligence and guided resolution

By automatically gathering much of the needed financial intelligence on the front end and creating and assessing unique models for each case on the back end, Quantiply Sensemaker enables cases to be resolved within minutes, with much less human involvement.

Creating intelligent customer risk profiles for more accurate assessment

With Sensemaker, the solution is continually updating customer risk profiles with the help of powerful algorithmic models that take into consideration a variety of criteria. Risk scores are assigned based on whether a party has ever appeared on the sanctions list, is wiring funds to a country on the SDN list or perhaps is doing business with individuals who are on the PEP list or some other watch list.

Sensemaker computes an intelligent customer risk profile (CRISP) score, which factors into the decision of whether a specific activity should be flagged for investigation or requires additional data before an assessment can be made.

Meeting regulatory requirements while reducing costs and financial penalties

With Quantiply’s platform, the solution automatically generates feature extraction models as needed, scores them according to the data flowing into the system and optimizes the models based on feedback

received from AML analysts and AML investigators. As a result, the system is continuously learning, essentially mimicking the process followed by human investigators. This can save financial institutions millions of dollars—while meeting regulators’ key performance indicators (KPIs) to ensure compliance and avoid financial penalties—and stay ahead of the fraudsters and other criminals.

Qiera can be set up to auto-close cases and identify false positives, reporting any alerts or exceptions to AML investigators for follow-up.

The system is also able to track all cases and activities over many years. And while human investigators typically must wait for multiple cases to occur before they can spot a pattern, the Sensemaker platform can identify suspicious behaviors and spot potential patterns as they emerge, long before an investigator could. This enables financial institutions to address fraud and criminal activity much sooner—reducing their risks and managing losses.

How Explainable AI enables users to identify and understand otherwise hidden patterns and insights within their data

A common challenge that many machine learning or AI-based platforms face is that they tend to be “black box” solutions. This means that it isn’t easy for users to understand how the solutions arrive at their conclusions or make their predictions. The result is that it’s extremely difficult to build confidence in the platforms or make needed adjustments without a highly skilled workforce.

Relying on Explainable AI, Quantiply offers welcome visibility into how recommendations and predictions are made, while enabling users to interact directly to fine tune the system and correct any errors that may be detected.

Reducing false positives to lower overall costs and resource dependency in alert triaging

With rules-based solutions, a relatively large percentage of alerts tend to be false positives. Such solutions don’t “learn” effectively from past events or feedback from cases that have been successfully resolved. Quantiply minimizes false positives by uncovering hidden relationships, tying entities together through network analysis, and leveraging valuable feedback from subject matter experts to ensure that the system continues to improve over time.

Benefiting compliance officers, caseworkers and regulators

The power of the Quantiply platform benefits everyone who plays a role in mitigating compliance and regulatory risk in today’s financial industry environment.

For **compliance officers**, QuantiPLY helps them remain compliant and avoid costly sanctions. False positives and costs can be greatly reduced, while meeting all the compliance and reporting requirements imposed by regulators.

For **individual caseworkers**, the platform enables them to do their jobs more efficiently and confidently. Automation ensures that the process is endlessly repeatable, with each caseworker following the necessary steps to achieve best practices. Caseworkers feel more empowered, while reducing their exposure to fines or personal prosecution if a case is improperly handled.

Finally, **regulators** receive the reports they need to address the myriad of ever-changing requirements. AI and continuous learning ensures that banks can efficiently keep up with the latest requirements and rules changes, and again, avoid potential sanctions and fines.

Conclusion

More accurate insights for AML Analysts, investigators and auditors

Today's methods of addressing compliance and regulatory challenges, including money laundering (ML), can't keep pace with the increasing sophistication of the schemes that are being employed. For many financial institutions, the largely manual process is inefficient and slow, far too costly and error-prone—creating numerous false positives and exposing the banks to unnecessary risks and financial penalties from regulatory authorities.

QuantiPLY's AI-based Sensemaker for anti-money laundering (AML) and know your customer (KYC) applications relies on Explainable AI to reduce the total number of alerts over time, improve the ability to detect and prevent financial crime by modeling risk based on behaviors and actions rather than rigid, predetermined rules.

By providing more accurate insights in real time for AML analysts, AML investigators and auditors, false positives can be reduced, suspicious activity and compliance reports can be filed with less effort, with greater success combatting ML and fraudulent activities within their institutions