Bulletin on Regtech Use Case

Transaction Monitoring: Insurance Products

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Background

The Bulletin on Regtech Use Case series aims to showcase innovative Regtech solutions implemented in banks to promote the adoption of Regtech, enhance risk management and compliance, and facilitate knowledge sharing among the Regtech community in Hong Kong.

This bulletin explores how HSBC Life worked together with Featurespace, a Regtech solution provider, to implement an automated transaction monitoring solution. The machine learning-based solution, ARIC, has helped to improve the bank's overall effectiveness and efficiency in managing false-positive alerts – producing high-quality, explainable alerts with prioritisation logic that meets HSBC requirements.

Transaction Monitoring for Insurance Products

- As part of its plan to improve transaction monitoring for insurance products, HSBC Life wanted to strengthen its anti-money laundering (AML) controls, streamline processes through automation, and reduce false positives in transaction monitoring. To achieve this objective, HSBC committed to leveraging advanced technologies such as cloud, artificial intelligence (AI) and machine learning (ML).
- In the past, HSBC's transaction monitoring process for insurance products was highly manual. Multiple spreadsheets were used for analysis and cross referencing, and there was no single view of transaction data. Besides being time consuming, this process also resulted in a high number of false positive alerts.
- To address these challenges, HSBC Life adopted Featurespace's ARIC as an automated transaction monitoring solution, with a focus on insurance products. ARIC utilises adaptive behavioural analytics empowered by sophisticated, automated, self-learning algorithms. Behavioural analytics focuses on understanding and predicting human behaviour based on analysis of various data. Self-learning algorithms enable the analytics system to learn and adapt to changing patterns of behaviour over time. By continuously monitoring and analysing user activities, such analytics can identify suspicious activities, enabling business operations analysts to prioritise alerts with explainable anomaly detection.
- In line with HSBC's "Cloud first" strategy, ARIC is deployed on Google Cloud. This means that it is highly scalable and has the ability to be deployed easily across the group.

Use case challenges and solutions

Challenges

- AI and ML require high-quality data sources in order to build effective models. Poor quality data that requires cleansing and proper mapping restricts the learning process of the model in use.
- When leveraging public cloud technology for AML-related sensitive data, stringent data security controls are necessary to provide reassurance to the business and fulfil regulatory requirements.
- Before its partnership with HSBC, Featurespace was not fully familiar with the regulatory controls and governance required for financial institutions. HSBC therefore needed to allocate more expertise to ensure that regulatory requirements were met.
- Featurespace's ARIC only retains behavioural profile data and does not store detailed historical transaction information. This created challenges when modifying transaction rules because changing a rule may require reloading historical data. Furthermore, the reloading process could potentially duplicate transactions of other rules, leading to the collapse of behavioural profiles.

Solution

- HSBC invested heavily in reviewing and updating its data dictionary and data lineage for all systems to ensure that critical data elements were sourced from the right places and that the data quality remained high.
- HSBC underwent a thorough cyber security and cloud governance process to ensure that the data is held securely and all relevant standards have been met.
- A partnership was established with Featurespace, with a dedicated product manager and data analysts on-site. This allowed HSBC to progress together with Featurespace on the journey, ensuring that both parties were comfortable with the engagement and that any issues were addressed and satisfactorily resolved.
- It is crucial to thoroughly define the transaction monitoring rules before production implementation. This can be achieved by leveraging data analytics tools and using production-like data to simulate and predict the outcomes of the rules. By analysing historical data and applying the proposed rules, potential conflicts and issues can be identified and resolved in advance.

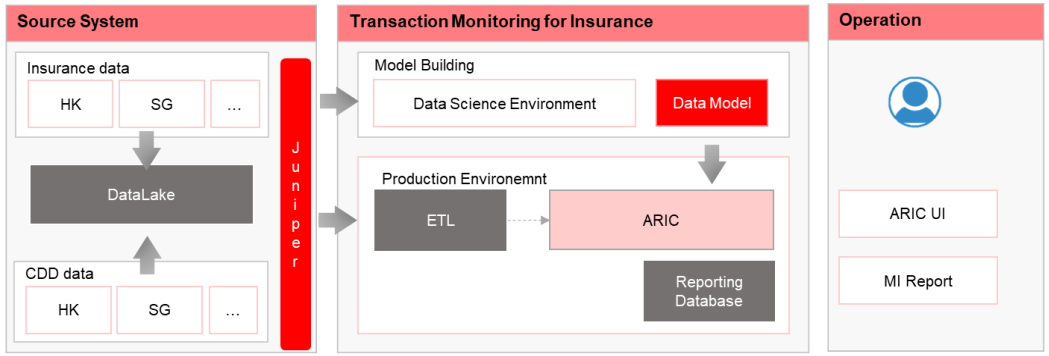
Benefits of using Regtech

How Regtech Helps

- **Advanced analytics and machine learning models –** Deployment of data-driven detection models allows learning from historical alert dispositions and new transaction data. These models continuously profile each client and adapt to emerging behaviours, enabling intelligence-led detection of suspicious transaction patterns.
- **Operation efficiency –** The use of machine learning models has improved alert quality and reduced false positives. This has led to an increased detection rate for money laundering while simultaneously reducing the total number of alerts that need to be reviewed.
- **A stable and secure infrastructure –** The legacy transaction monitoring process is labour intensive due to its manual data extraction and case management approach. The new solution runs on an automated and stable infrastructure deployed on the Google Cloud Platform.
- **Scope and Scale –** HSBC invests a significant amount each year to enhance its transaction monitoring rules and processes. With the implementation of Featurespace's ARIC solution, new rules can be added and existing rules can be optimised by trained and authorised HSBC users, at no additional cost to the business.

Key Implementation Success Factors

- Data quality is critical for building a machine learning model. HSBC experts worked closely with data scientists from Featurespace to analyse data from different sources and to determine correct data sets for training and fine-tuning the machine learning models.
- A development and operations (DevOps) automation pipeline was implemented for continuous integration and continuous delivery by taking advantage of DevOps tooling. This enabled the initiative to progress in an agile way with fast response to business requirements, fast development, testing and deployment activities without compromising on quality.



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