

# BYGB 7988 Business Performance Management Risk Analytics

## Section 2

### Case 3

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## Question 1.

Key issues of the HKMA disciplinary actions:

- The HKMA determined the penalties based on the banks' willingness to cooperate with the investigation and objective of sending a clear message to the banking industry
- The Customer Due Diligence (CDD) regulation implemented by the HKMA were expensive for the banks to process, so they only conducted procedures on higher-profit margin customers
  - This gave an opportunity for lower-profit customers to continue using their banking services even if they were at risk of laundering money
- Banks with international branches were inclined to exploit the variances in global AML standards and relocate their operations away from areas like Hong Kong with stricter AML regimes
- The AMLO only applied to banking money lenders, and did not oversee nonbank money lenders, so criminals could easily shift their activities to nonbank money lenders in Hong Kong

(Q1)

How HKMA can use data-driven approach to identify the issues underlying the disciplinary action:

- Applying forensic analytics to identify fraudulent transactions, not just in banks (ex. ATMs, mobile platforms and crypto-currency)
- Implementing unsupervised modeling to make CDD more efficient for every bank, without needing every customer's life story
- Utilizing natural language processing (NLP) to identify criminal organizations who are offshoring their transactions to banks in less-regulated countries
- The HKMA should help every bank build an integrated data-driven framework to identify threats, unusual transactions, and discrepancies in customer relationships to combat financial crime

## Question 2.

### State Bank of India

- Did not adequately identify the beneficial owners of 28 corporate customers or verify the identities of the beneficial owners in the account, and had no evidence of a transaction monitoring system

### Coutts & Co. AG

- Senior management did not go through approval process for nine PEPs or verify the beneficial owner, did not follow up on alerts, and did not identify 4 PEPs as higher-risk customers

### Shanghai Commercial Bank Limited

- Did not adequately examine the purpose of suspicious transactions and did not report them, and they did not examine the business relationship between customers for these transactions

### JPMorgan Chase Bank

- Did not conduct periodic reviews on higher-risk corporate customers or PEPs, and did not collect identification from or ensure the purpose of customer accounts

## (Q2)

Analytical role in preventing the banks' violations:

- Text Analytics: could identify fraud early, implement NLP algorithms to identify names of PEPs, high-risk customers or those connected to high-risk people, networks of customers, and unusual purpose of transactions
- Homomorphic Encryption: Would enable banks in Hong Kong to share data without exposing customer privacy, but providing the compliance required by the HKMA
- Risk Analytics: Apply unsupervised machine learning to examine data without fraud or uncover transaction anomalies, transaction frequencies of interest, or potential customer risks
- Biometrics: measure and analyze unique physical and behavioural characteristics of each customer to identify those who are high risk during the onboarding process or used for authentication for payments

How analytics can resolve the violations:

- By applying supervised machine learning algorithms, the banks can use historical data to reduce the amount of false positive alerts for fraud, in order to focus more on the pertinent ones
- Network analytics can identify paths, connections and hubs between customers whether they are linked to PEPs or high-risk accounts or not

### Question 3.

How Regulatory Arbitrage can be prevented:

- Multinational banks and regional AML compliance institutions should partner with third-party services that monitor transactions and commercial watch lists regionally, to detect irregular transactions or networks
- Banks should focus on digital payment-related money laundering risks to combat cybercrime across currencies and regions
- Banks should adopt enterprise-level risk-based approaches, no matter what country they operate in. Converging their fraud detection platform can help identify global irregularities
- Banks and compliance regulators should leverage analytical tools to identify customers profiles, their risk levels, and rogue activities
  - Ex: Leveraging social media or news sources to identify national political or economic characteristics that could lead to more fraud-related activities, or identify PEPs and their comrades

How Regulatory Arbitrage can be prevented using analytics:

Implementing enterprise-wide anti-fraud analytics efforts:

- Breaking down silos between channels, products and fraud types, to create a holistic view of fraud for the whole multinational banking institution
- Using analytics to predict, prevent and detect crime based on country-level insights and a higher-level understanding of internal criminal organizations
  - Use of mapping analytics to better target and identify high-risk customers from large datasets based on past fraud and national culture
- Intelligence-driven, forward looking analytics based on well-founded indicators of crime
  - Monitors fraud in real-time, including the dark web and comparing patterns with national regulatory organizations that identify suspicious patterns as well
- Global banks should adopt a hybrid approach to customer authentication measures, by building analytical models integrating customer behaviors across accounts and transactions into a single view
  - This facilitates low-risk customers and transactions and enhances the ability to identify emerging fraud typologies

## Question 4.

How the AMLO affects the banking industry:

- Enforcing specific AML procedures on banks operating in designated areas may hinder the bank's capacity to cater to all clients, causing them to focus only on high-profile clients
- Banks that do not have the resources to properly conduct the due diligence measures specified by the AMLO either need to invest or conduct intercountry regulatory arbitrage
- If banks choose the de-risking method that GSBC is considering since they can not comply with the regulations, then there are fewer banks to lend money, and a monopoly may emerge
  - Banking can become more expensive for the general population, and the bank can assert influence over domestic political and economic decisions
- Although the AMLO intends to mitigate money laundering in Hong Kong, criminals will bring their fraud to nonbank money lenders or where regulations are less strict, unless global financial services cooperate to end money laundering altogether



How compliance analytics could mitigate costs and assist with AMLO compliance:

- Machine learning models can parse large datasets and spot fraudulent transactions while monitoring transactions in real-time to identify gaps, issues and trends
- NLP algorithms can search for patterns or combinations among customer explanations for suspicious transactions to predict future behavior
- Social network analysis can uncover fraudulent relations between actors, and statistically find the nature of the relations to uncover financial crime networks
- Applying entity analytics using bank data or external sources such as social media and the internet to holistically regulate customers' transactions and raise red flags earlier
- Visualization tools reveal trends and patterns by drilling down the root of the fraud, while allowing a story to emerge that compliance managers can see more clearly

All of these steps would help banks conduct proper AMLO regulated CDD and cut costs of fraud ahead of time

## Question 5.

How GSCB can avoid HKMA disciplinary action:

Conduct thorough CDD:

- Understand customer's business relationship with the bank, understand reason for transactions exceeding HKD 120,000
- Analyze customer and transaction reasoning before conducting wire transfers, respond to customer alerts promptly, regularly verify customer's identity
- Monitor business relationships with bank and between customers, monitor wire transfers, continuously analyze customer's risk profile, double-check transactions that are unusually large or frequent
- Monitor unusual transactions are not consistent with the customer's risk profile, routinely determine whether a customer or beneficial owner is high risk or a politically exposed person

## (Q5)

- By obtaining data from multiple, high quality sources and normalizing it based on their customer profile, the GSBC could create a more accurate holistic risk score per customer
- Exploratory analysis - detecting outliers/clustering would avoid time wasted on mundane alerts and bring more attention to suspicious transactions
- Predictive modeling - machine learning, regression analysis, decisions trees, neural networks to classify risks based on PEPs, low- or high-risk customers
- Social network analysis - to identify relations of a particular set of customers in Hong Kong or elsewhere and uncover whether they are genuine or laundered wire transfers
- Use a statistical baseline to continuously monitor behavior that may be more suspicious than normal based on outdated CDD information or transaction history

These steps will help the GSBC in Hong Kong make fast, on-target decisions to reduce monetary, reputational, and compliance risks of fraud and money laundering in line with AMLO guidelines

**Question 6.**

- No, GSBC should not take the de-risking approach because they could lose their own clients or hinder small/medium enterprises from opening accounts thus participating in an efficient Hong Kong banking system
- They can set up non-bank money lending subsidiaries if they want to capture the market of potential risky customers who would not comply with AML practices
- GSBC should adopt the risk-based approach and invest in the resources needed to conduct customer due diligence, analyze PEPs, continuously monitor fraud alerts, and investigate wire transfers to ensure customers are not laundering money
- With such high barriers to entry in the financial banking industry in Hong Kong, they are set to dominate the market

Data-driven analytics may help avoid de-risking through:

Forensic Analytics:

- by addressing operational issues at GSBC, they can improve the processes for monitoring transactions or conducting CDD where there are vulnerabilities ahead of time so they can assess client-risk more efficiently
- Applied to risk management, it can identify transactions outside the norm, which will reduce the amount of false positives and allow for more business opportunities

Unsupervised Modeling:

- Helps uncover new fraud schemes by identifying suspicious behavioral patterns amongst customer relationships and transactions
  - Adopting this method would allow GSBC to identify criminal networks amongst their branches which will mitigate the need for detailed historical evidence for every potential customer

Natural Language Processing:

- This tool can help managers at GSBC analyze if customers are more inclined to launder money in their reason for transactions, tone of voice, or by identifying connections between clients where otherwise there are no noticeable links