AML/CFT INDUSTRY PARTNERSHIP

Key Takeaways – ACIP Workshop to Promote Data Analytics in AML/CFT

13 September 2019

1. INTRODUCTION

1.1. BACKGROUND

The AML/CFT Industry Partnership (ACIP) held a workshop on the adoption of data analytics in enhancing AML/CFT effectiveness on 13 September 2019. There were nearly 200 attendees, including bank staff in management, compliance and data analytics roles. Several ACIP banks presented the recent strides that they had made in deploying data analytics to enhance the effectiveness of their AML/CFT controls, and participants gained ideas on how to apply these tools to enhance their own banks' AML/CFT processes.

1.2. OBJECTIVE

To help banks understand how their peers have dealt with common implementation issues, there were also panel discussions on two of the key challenges in implementing AML/CFT data analytics, namely, Explainability and Governance.

I. The first panel discussed the importance of explainability in supporting adoption of machine learning models in AML/CFT, as well as a way to tailor the level of explainability for different stakeholders to help them understand, evaluate and approve, and use such machine learning models.

II. The second panel discussion focused on the perceived tension between governance and agility in development, and the ways to address the perception, including calibrating appropriate level of governance at each stage of a model's development.

The key insights from the two panel discussions are set out in Sections 2 and 3 below.

2. EXPLAINABILITY

Explainability is important to ensure alignment with MAS FEAT Principles, especially in relation to Accountability and Transparency. It should address key issues such as what the solution is identifying in terms of AML risks, and how the solution helps to mitigate AML risks.

I. To achieve this, the panel agreed that banks must be able to translate the mathematics underpinning the solutions into plain English for the human user/stakeholder.

II. Explainability must be a design priority for the system to be effective, and should be considered at the onset of system development.

III. Better understanding will build confidence among key stakeholders on the DA solution.

2.1. CALIBRATING EXPLAINABILITY FOR DIFFERENT STAKEHOLDERS

The panel highlighted that each group of stakeholders (e.g. senior management, staff, supervisors and customers) require varying levels of explainability. Banks need to consider how to calibrate explanations depending on the target audience, and to think through the level of details to be included in various documents.

The table below sets out the varying levels of explainability:

DOCUMENT	EXPLAINABILITY DETAILS	TARGET AUDIENCE
Overarching Governance Document	• Sets out detailed methodology, mathematics and scoring algorithms driving the DA Solution • Contains details to explain the "what" and "how"	• Compliance Dept (Solution Owner) • Auditors / Regulators
End-User Document	• Simple English explanation for quick understanding • Operational components on how to utilize the solution to mitigate AML risks • <u>Not</u> necessary to include detailed mathematics	• End-Users • FI Employees
Senior Management / Board Report	• High-level explanation on how DA solution works to mitigate AML risks • Separate session to be arranged if needed to facilitate understanding on the inner workings	• Senior Management • Board of Directors

I.   The DA system needs to point out the specific factors that led to an increased risk score or alert. Otherwise, it would not be useful in guiding the human analyst on the next steps.

II.   The basis for the system's decisions would also need to remain clear after the fact, e.g. when relooking past decisions to understand why an alert was or was not triggered.

III.   The party pushing for change via the DA solution should be responsible for ensuring that key stakeholders understand the solution, the methodology and the change to be achieved.

IV.   Multiple parties are needed to support the explainability journey. For example, Compliance may need to rely on Data Scientists to provide expert explanations on the inner workings of the solution.

2.2. POTENTIAL DOWNSIDES OF AML/CFT DA SYSTEMS

The panel highlighted that AML/CFT DA systems could lead to adverse results if the outputs go awry, such as unwarranted customer exits and financial exclusion, or allowing criminal activity to continue. Beyond the social harm, there was also the legal and reputational impact of an incorrect system decision. As such, humans would likely remain "in the loop" for banks' AML/CFT decision.

I.   Panellists noted that there could be challenges with importing model validation methods from other fields like credit risk, where models operate at tight statistical thresholds. AML solutions deal in qualitative matters such as STRs and thus, need to operate at far looser confidence levels. However, some international banks do implement model risk concepts into AML risk models.

II.   In addition, more advanced techniques currently in development, such as generative adversarial networks, may be more effective but at the cost of explainability. The panel thought that the risk of such unexplainable systems leading to unintended outcomes or not picking up criminal activity remains too high.

2.3. FACTORS DRIVING INVESTMENT IN AML/CFT DA SYSTEMS

Beyond explainability, the panel also discussed the factors to consider when investing in AML/CFT DA systems:

I.   Data Cleaning

A lot of resources/time is needed to clean up data and ensure it is stored at the right place to be tapped upon. This is a decision that first requires management commitment. Then, the focus can shift towards why Compliance use cases should be prioritised.

II.   Computational Infrastructure

Another area that requires strong management commitment is the building of necessary IT infrastructure within the FI to facilitate deployment of DA solutions.

III.   Effectiveness

Compliance needs to demonstrate the successes of pilot use cases and convince management to release resources to scale up the solution. Important to constantly experiment.

IV.   Efficiency

Business case here can be based on a break-down of how much workload can be lowered, headcount costs reduced, and productivity improved.

V.   Gaining Staff Buy-In

It is critical to focus on staff needs and concerns beyond explainability. The solution should be recognised to reduce low-value work, rather than add complications. It is also important to be truthful about any impact on their jobs from the DA system. Staff may need to be assured that the bank will help to re-design their jobs, upskill them to higher value roles or even create new roles for them.

3.   GOVERNANCE

Panellists shared that banks can have effective and appropriate governance while staying agile and responsive to new data analytics innovations. The extent of oversight can be calibrated in a risk-appropriate manner, as the data analytics system matures from the proof-of-concept stage to full production.

3.1. PROOF OF CONCEPT AND PILOT PROGRAMMES

Panellists supported proofs-of-concept and pilot programmes as ways to experiment with new ideas in a more flexible environment. Specifically:

I.   There was a consensus that model governance strategies must balance robustness of validation with the need to be agile in deploying and refining models to fight financial crime – in the deployment lifecycle, agility is more favourable at the experimental end, whereas robustness is more critical towards the implementation/reliance stages.

II.   Nevertheless, there should still be adequate oversight to ensure that the model is fit for purpose before proceeding further. For example, to make sure a model is properly validated at the proof-of-concept stage, one bank required an independent party to conduct reviews on the model's conceptual soundness and results.

III.   Apart from governance, the panel also noted the importance of testing the proof-of-concept against a wider range of historical data to ensure that the results are consistent.

3.2. COMMUNICATION WITH KEY STAKEHOLDERS

Panellists emphasised the importance of effective communication with all key stakeholders throughout the system's development. In particular:

I.   Panellists shared that they would have frequent meetings and walkthroughs with their senior management, business users, compliance and other stakeholder groups to provide updates and solicit ideas.

II.   It is important to not only highlight achievements, but also the challenges faced so that the senior management are sufficiently familiar and comfortable with the system's effectiveness and limitations to approve its launch.

III.   Model validation processes should ensure that evaluators have open access to the teams that actually use the model– the insights from the model users provide critical context to the real-world function of the model and this should be given equal consideration to the raw, technical evaluation of the model.

3.3. PERIODIC REVIEW AND VALIDATION

The panel also discussed the importance of periodic reviews and validation to ensure that the system works as intended. Some measures could include:

I.   Having an independent party perform the validation, especially to the extent that such evaluators do not have a stake in the success or failure of the model. Such impartiality was found to be particularly useful in ensuring effective validation and identifying opportunities to further improve model efficacy and robustness.

II.   Calibrating an appropriate model validation frequency depending on the use case. For example, where a model is used to group clients with similar characteristics together to pick out unusual behaviour, changes in client profiles or a significant number of newly onboarded clients may affect these groups' characteristics, making the model less accurate. More frequent reviews and updates may therefore be required.

4.   ADDITIONAL RESOURCES

The workshop closed with presentations by the Monetary Authority of Singapore (MAS), Institute of Banking and Finance (IBF) and Workforce Singapore (WSG) on MAS's Artificial Intelligence & Data Analytics grant, IBF training schemes and WSG Capability Transfer

Programme respectively. Additional information on these topics may be found at the following websites:

a. https://www.mas.gov.sg/schemes-and-initiatives/Artificial-Intelligence-and-Data-Analytics-AIDA-Grant
b. https://www.ibf.org.sg/programmes/Pages/IBF-FTS.aspx
c. https://www.ibf.org.sg/programmes/Pages/IBF-STS.aspx
d. https://www.wsg.gov.sg/programmes-and-initiatives/capability-transfer-programme.html