A MULTIAGENT-BASED APPROACH TO FIGHT FINANCIAL FRAUD: AN APPLICATION TO MONEY LAUNDERING

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data and systems intelligence

CONTEXT

Nowadays, money laundering (ML) is recognized as a significant global problem. Its combat is prioritized at the same level of the most relevant global issues. The large amount of money involved in this crime, and the social issues involved, justify the prioritisation of anti-money laundering (AML) initiatives (Fig. 1).

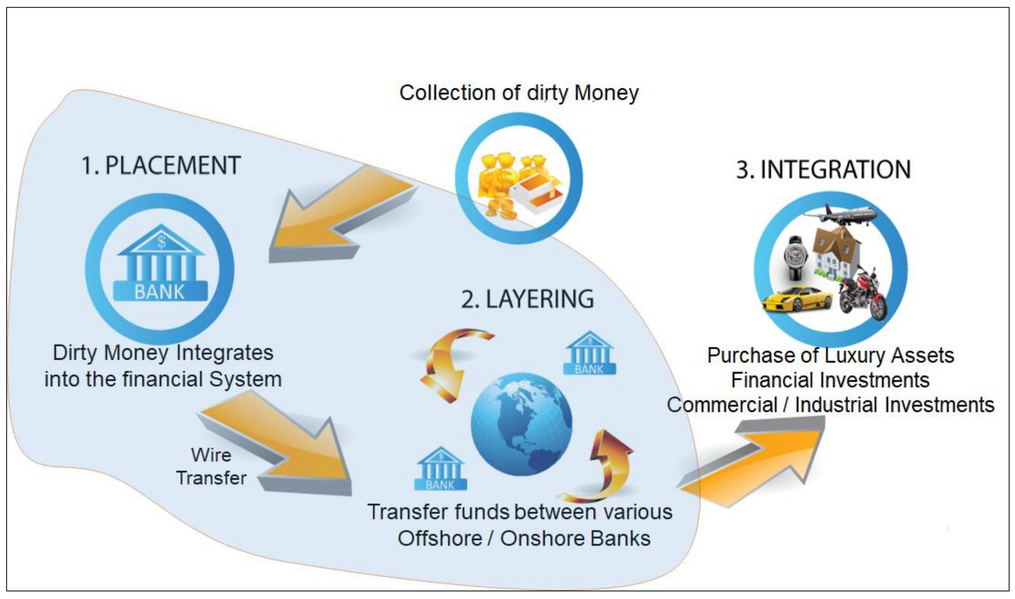

Fig. 1 - A Typical Money Laundering Scheme

OBJECTIVES

The goal of the proposed solution (Fig. 2) is to support the AML process in a financial institution. A behavior profile is kept for each customer, based on the transaction history and considering ML risk concepts. These will be used, along with the rules created from official regulations, to combat ML and to capture and signal the suspicious transactions processed by the various business systems. The solution will decide on some marked cases and learn from the aid provided by the AML analyst during the decision-making process of the most complex cases.

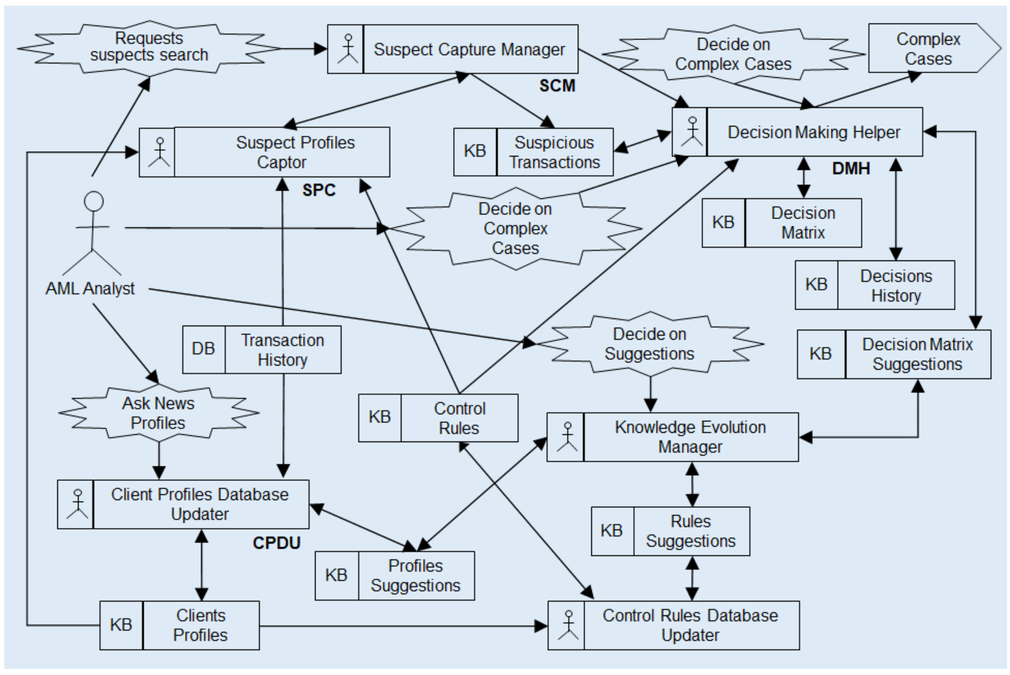

Fig. 2 - Architectural Model of the Solution

CURRENT STAGE

Currently, we are working on testing the limits of the applied concepts (risk, data mining, intelligent agents) as well as validating a subset of the results obtained.
Fig. 3 shows that, with this approach, the signaling was more accurate when compared to the solutions implemented in the financial institution providing the data. The total number of suspects was increased by 59%, but the number of non-suspects (false positives or justified suspects) increased by only 23%. However, the suspects confirmed or who need investigation, had significant increases, 61% and 300%, respectively.

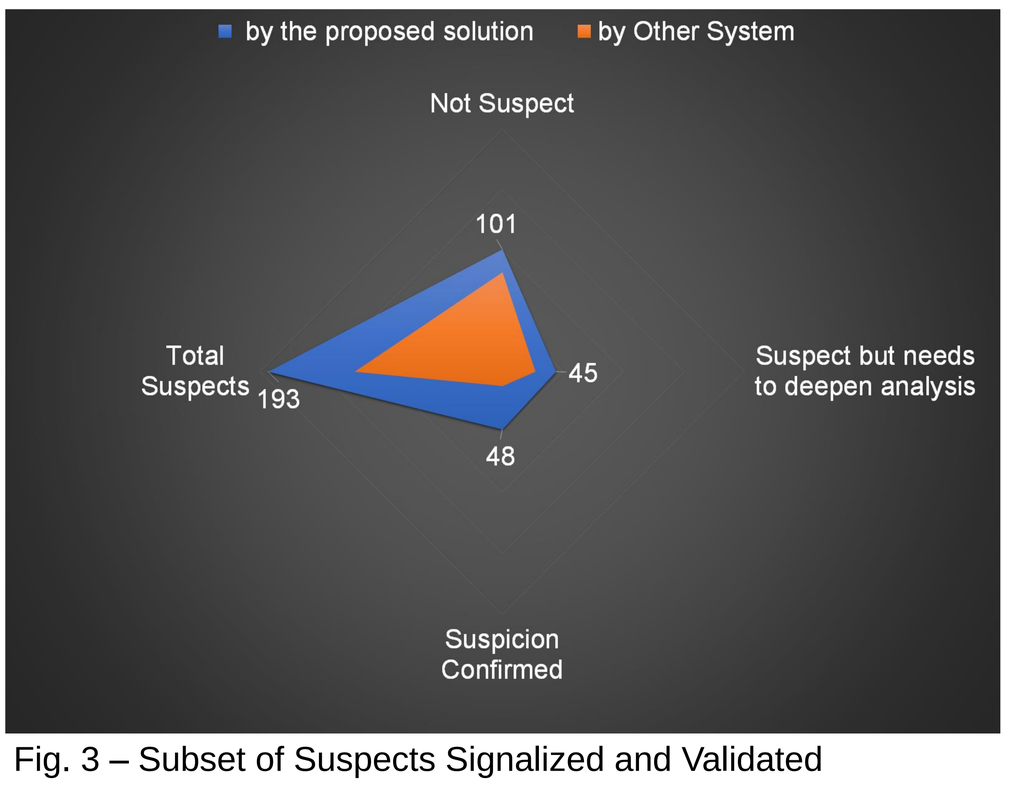

Fig. 3 – Subset of Suspects Signalized and Validated

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