Case Study

Smart Audit | Chargeback Fraud Detection an AI-ML Approach

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01 Objective

The credit card chargeback management team for a large bank currently auto-approves all chargeback requests below $50 without going through the dispute management process, resulting in significant losses due to the high volume. The team aims to implement a more efficient decision-making process where chargeback requests below $50 are selectively reviewed for dispute management based on a sophisticated AIML approach resulting in a high probability of success.

03 Data

For all chargeback requests, the bank has access to transaction details. Though, for cases below $50 we don't have label since they have not gone through the dispute management process. However we do have data for fraudulent cases for more than **$50**
Therefore we can have smart audits on **10%** or **20%** of the data and find out all the fraudulent cases manually and check whether similar patterns given by model can be seen in cases below $50 as well

02 Charge Back Process

Customer
Dispute on a transaction with Bank

Bank Reviews the transaction

Funds Are Returned to the Cardholder

Valid Chargeback sent to acquiring Bank

Acquiring bank sends chargeback to merchant

Funds Deducted From Merchant Account

Issuing Bank

Issuing Bank Decides whether the evidence is valid for transactions more than $50

Acquiring Bank

Acquiring Forwards Issuing Bank to review

Merchant

Merchants disputes chargeback and sends evidence

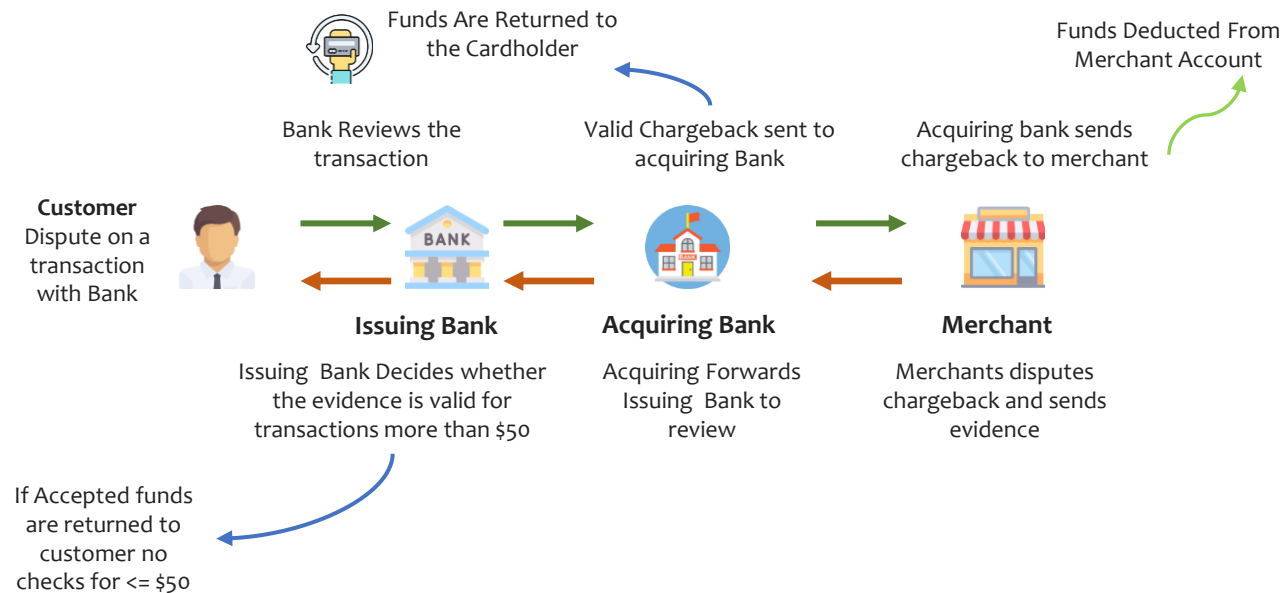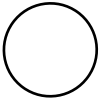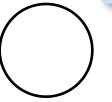If Accepted funds are returned to customer no checks for <= $50

04 Approach

To address the problem and optimize the decision-making process for chargeback requests below $50, the following approach can be taken:
Data Collection: Consolidation of historical data on chargeback requests, including transaction details for both below $50 cases and above $50 cases to be used for modelling
Model Training: Use this master data to train an AIML model, such as a supervised classification model, to predict the probability of success for chargeback requests below $50. A model like XGBoost, Neural Networks can be leveraged to find out cases which can be picked up and flagged for smart audit
This model will also have to deal with imbalance class problem

Thank You!!