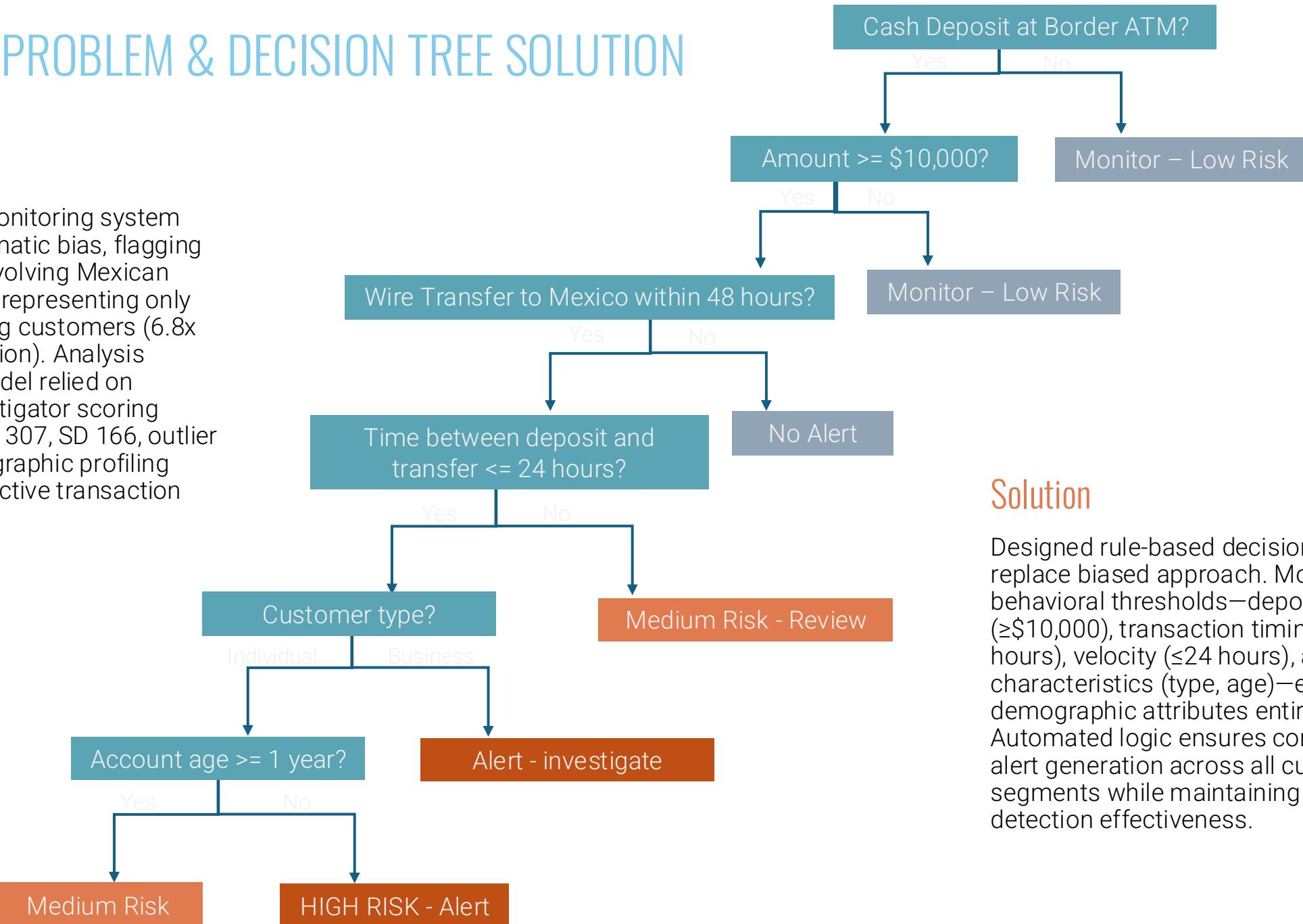


BUSINESS PROBLEM & DECISION TREE SOLUTION

Problem

Existing AML monitoring system exhibited systematic bias, flagging 75% of alerts involving Mexican citizens despite representing only 11% of qualifying customers (6.8x overrepresentation). Analysis revealed the model relied on subjective investigator scoring (variance: mean 307, SD 166, outlier 759) and demographic profiling rather than objective transaction behavior.



Solution

Designed rule-based decision tree to replace biased approach. Model uses behavioral thresholds—deposit amount ($\geq \$10,000$), transaction timing (≤ 48 hours), velocity (≤ 24 hours), and account characteristics (type, age)—eliminating demographic attributes entirely. Automated logic ensures consistent, fair alert generation across all customer segments while maintaining compliance detection effectiveness.