Case Study: Reducing First-Party and Synthetic Fraud Through Enhanced Identity and Behavior Analytics

Client: Mid-sized Fintech Lender

Industry: Consumer Lending (Installment Loans)

Engagement Type: Fraud Risk Strategy Consulting

Duration: 10 weeks

Services Provided: Fraud Risk Assessment, Behavioral Analytics Integration, Policy Optimization

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Background

The client, a growing fintech lender offering unsecured personal loans, was experiencing an uptick in first-party and synthetic fraud. Losses from these cases were often misclassified as credit risk, masking the true fraud exposure. Traditional fraud tools failed to detect these cases early due to a lack of obvious identity manipulation or synthetic indicators.

Challenge

- First-payment defaults (FPDs) were trending upward, reaching over 5% in some cohorts.
- Most tools in place focused on identity verification (KYC), not behavioral risk.
- Fraud and credit signals were difficult to separate, limiting targeted interventions.

Approach

1. Fraud Risk Audit

Reviewed current fraud tools, workflows, and FPD data. Identified key behavioral red flags among fraudulent users: rapid application velocity, mismatched geolocation, time-of-day submission patterns.

2. Behavioral Signal Layering

Integrated device intelligence, IP risk scoring, and email/phone velocity via third-party vendors (e.g., Sift, SpecTrust). Built a behavioral risk score combining:
- Time-on-site and click path analysis
- Geolocation and IP anomalies
- Reused device/applicant IDs
- Typing cadence and autofill flags

3. Strategy & Policy Redesign

Created fraud segmentation logic to isolate high-behavioral-risk applicants.
Adjusted decision waterfall:
- Auto-decline on extreme signals
- Conditional approval with enhanced verification (e.g., selfie ID, bank login)
- A/B tested vs. control group over 4 weeks

Results

- 34% Reduction in First-Party Fraud Losses
- Improved Fraud Detection Precision (captured 76% of fraud with <10% impact on approvals)
- Stronger Defense Without Overkill
- Long-Term Strategic Impact on underwriting and collections

Swap-In / Swap-Out Impact

	Pre-Implementation	Post-Implementation
FPD Rate (Target Seg.)	5.2%	3.4%
Approval Rate	42%	40%
Fraud Capture Rate	39%	76%

Conclusion

This project illustrates how behavioral analytics can complement traditional fraud tools to target hidden first-party fraud. By layering new signals and adjusting decision logic, the client achieved significant loss reduction without sacrificing growth.