Geldium Business Summary Report: AI-Driven Collections Strategy

Prepared by: Sandeep Maurya
For: Geldium Collections Team
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1. Summary of Predictive Insights

- Customers with **2 or more missed payments** and a **Debt-to-Income (DTI) ratio > 0.5** are **3x more likely** to become delinquent.

- **Credit utilization is over 80%** strongly correlates with increased delinquency risk.

- **Self-employed and unemployed** customers, especially with **lower income and shorter account tenure**, show elevated default risk.

Key Insights Summary Table

Key Insight	Customer Segment	Influencing Variables	Potential Impact
High missed payments + high DTI = 3x delinquency likelihood	Mid- to low-income customers	Missed_Payments, DTI	Prioritize outreach and hardship support
Credit utilization > 80% indicates financial stress	All segments	Credit_Utilization	Trigger early reminders and repayment plans
Employment instability + low income = increased risk	Self-employed/unemployed customers	Employment_Status, Income, Account_Tenure	Provide tailored financial literacy/support

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2. Recommendation Framework

Restated Insight:

Customers with 2+ missed payments and DTI > 0.5 are 3x more likely to default.

Proposed Recommendation:

Pilot a targeted 6-week SMS campaign, offering hardship support to high-risk customers.

- **Specific**: Focus on customers meeting both risk factors.

- **Measurable**: Aim to reduce 30+ day delinquency in this group by at least **12%**.

- **Actionable**: Use existing CRM system and model outputs for customer targeting.

- **Relevant**: Aligns with Geldium's goal to lower credit risk while supporting customers.

- **Time-bound**: Complete pilot within a 6-week window; analyze results for next phase.

Justification and Business Rationale:

This recommendation provides a **low-cost**, **scalable**, and **customer-friendly** intervention. It targets customers most likely to default and offers support, not penalties. Because SMS is already in use at Geldium, implementation is seamless, and the initiative directly supports risk reduction, operational efficiency, and customer trust.

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3. Ethical and Responsible AI Considerations

Bias

The model avoids variables that may serve as proxies for protected attributes (e.g., gender, ZIP code). Features were chosen based on financial behavior. Model performance should still be reviewed regularly across groups (e.g., by employment type or income) to detect any hidden bias.

Explainability

We selected a **Random Forest model** supported by tools like **SHAP** to enhance interpretability. These tools allow the Collections team to understand the **key drivers** behind each customer's risk score, promoting **transparent and compliant decisions**.

Responsible Decision-Making

- Interventions are **non-punitive** and focused on **support and prevention**, not restriction.

- Customers are informed and treated consistently across the program.

- Fairness audits will be part of ongoing monitoring to uphold ethical standards.