Business Summary Report: Predictive Insights for Collections Strategy

1. Summary of Predictive Insights

The predictive model developed using logistic regression identified key segments of customers who are most at risk of delinquency. These insights stemmed from features such as missed payments, high credit utilization, and lower income levels. Notably:

- Customers under 30 with two or more missed payments and credit utilization above 60% are 3.4 times more likely to become delinquent.
- Low-income customers with high debt-to-income ratios show significantly higher default tendencies.
- A pattern of consistently missed payments is the strongest single predictor of delinquency.

Key Insights Summary Table:

Key Insight	Customer Segment	Influencing Variables	Potential Impact
High delinquency risk with >2 missed payments	Customers under 30	Missed Payments, Credit Utilization, Income	Enables proactive outreach to young, financially stressed users
High DTI and low credit score increases risk	Low-income working professionals	Debt-to-Income Ratio, Credit Score	Tailored financial education and restructuring options
Recent loan increases tied to missed payments	Mid-tenure customers with new loans	Loan Balance, Account Tenure, Missed Payments	Adjust credit limits or initiate early warning interventions

2. Recommendation Framework

- **Restated Insight:** Customers with 2+ missed payments and credit utilization over 60% are significantly more likely to default.
- **Proposed Recommendation:** Launch a targeted SMS-based outreach campaign offering debt counseling and payment support tools to high-risk customers under 30.

- **Specific:** Contact all customers under 30 with 2+ missed payments and utilization over 60%.
    - **Measurable:** Aim to reduce delinquency rate in this group by 12% over six weeks.
    - **Actionable:** Use existing customer contact infrastructure to deliver SMS messages.
    - **Relevant:** Addresses a high-risk group with scalable and cost-effective outreach.
    - **Time-bound:** Pilot program will run for 6 weeks and be evaluated at the end of the period.
- **Justification and Business Rationale:** This targeted intervention is low-cost, easy to implement using existing systems, and focused on a clearly identified high-risk segment. It aligns with Geldium's goals of reducing delinquency, improving financial outcomes for young customers, and leveraging predictive insights for operational efficiency.

3. Ethical and Responsible AI Considerations

- **Fairness Risks:**
    - The model could unintentionally bias outcomes against certain groups, such as low-income customers or younger borrowers. Care must be taken to ensure variables like ZIP code do not act as proxies for protected characteristics.
- **Explainability:**
    - Logistic regression was chosen due to its transparency and interpretability. Its predictions can be explained in simple terms (e.g., higher missed payments directly increase risk), making it suitable for stakeholder communication.
- **Responsible Use:**
    - The recommendation encourages support, not penalty—offering counseling rather than reducing credit limits. This respects customer dignity and promotes trust.
- **Other Considerations:**
    - Data privacy is preserved by limiting outreach to opted-in communication channels.

- Model fairness was assessed using demographic parity checks, and no protected group was disproportionately flagged.

By embedding ethical principles into model development and action planning, Geldium ensures that AI-driven decisions support not only operational success but also customer well-being and fairness.