Business Analytics Challenge - Stori Fintech Startup

Financial Projection and Collections Strategy Analysis

Executive Summary

This analysis examines the financial viability of a fintech startup offering two credit products (Contigo A and Contigo B) over a 12-month projection period. The study reveals critical profitability challenges in the base scenario and evaluates the impact of implementing a targeted collections strategy to improve business performance.

Key Findings:

- Without collections: Net income deteriorates from -$236K (month 1) to -$2.2M (month 12)
- With collections: 79% improvement in financial performance, reducing month 12 losses to -$466K
- Segmented collections strategy achieves 35.2x ROI over 12 months with 7,310 accounts recovered (targeting top 21.2% of DQ customers with contactability scores >0.70)

Part 1: Business State Analysis

Product Configuration and Market Context

The startup operates two credit products with distinct risk profiles:

Product	Loan Amount	Interest Rate	DQ Rate	Initial Customers	Monthly Growth
Contigo A (High Risk)	$1,000	15%	13.5%	5,000	25%
Contigo B (Low Risk)	$2,000	10%	8%	10,000	10%

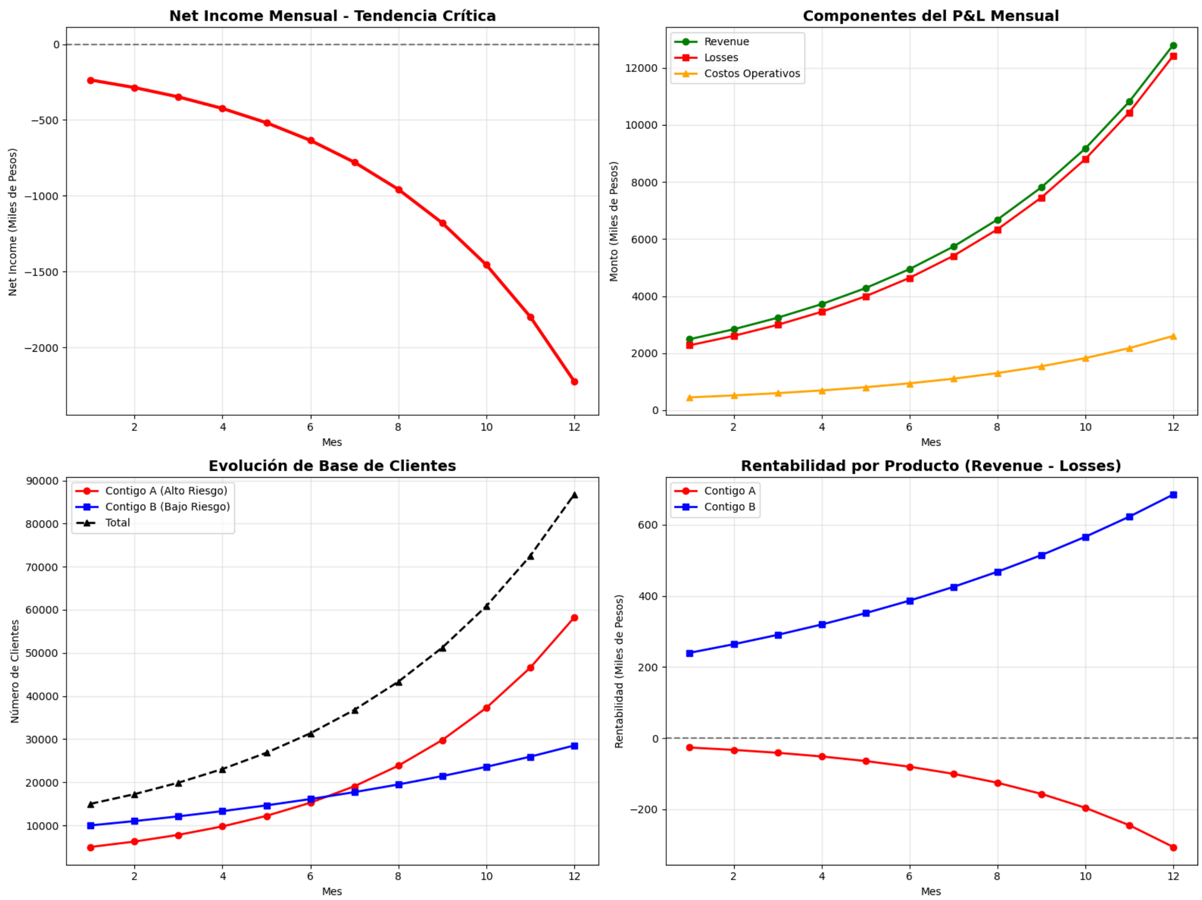
Additional Parameters:

- Monthly operational cost per account: $30
- Revenue recognition: Interest collected from paying customers
- Losses: Principal amount from delinquent accounts

Question 1: Factors Against Profitability

The analysis identifies several critical factors threatening startup profitability:

1. **Aggressive Growth Strategy**: 25% monthly growth in high-risk segment (Contigo A) accelerates loss accumulation
2. **High Delinquency Rates**: 13.5% DQ rate for Contigo A creates unsustainable loss ratios
3. **Operational Cost Scaling**: Linear cost scaling with customer base (from $450K to $2.6M by month 12)
4. **Revenue vs. Loss Growth Imbalance**: Losses grow 5.5x vs. revenue growth of 5.1x over 12 months



Question 2: Profitability Analysis and Trends

Financial Deterioration Timeline:

Month	Total Revenue	Total Losses	Operational Costs	Net Income	Customer Base
1	$2,488,750	$2,275,000	$450,000	-$236,250	15,000
6	$4,943,046	$4,636,630	$940,890	-$634,474	31,363
12	$12,802,062	$12,422,905	$2,602,140	-$2,222,983	86,738

Major Trends Driving Changes:

- **Customer Base Explosion**: Total customers grow 5.8x (15K to 87K)
- **Contigo A Dominance**: High-risk customers grow 11.6x vs. 2.9x for low-risk
- **Loss Rate Acceleration**: Losses grow faster than revenue due to compounding DQ effects
- **Product Performance Divergence**: Contigo A shows -$306K profitability vs. +$685K for Contigo B by month 12

Question 3: Required Changes for Sustainability

Strategic Recommendations:

1. **Immediate Actions:**
    - Reduce Contigo A growth rate from 25% to 15% monthly
    - Implement collections strategy (detailed in Part 2)
    - Lower DQ rate target for Contigo A from 13.5% to 10%
2. **Medium-term Adjustments:**
    - Increase interest rates for Contigo A to 18-20%
    - Enhance credit scoring to improve customer selection
    - Accelerate Contigo B growth to offset high-risk exposure
3. **Long-term Structural Changes:**
    - Develop intermediate risk products between A and B
    - Implement variable operational costs based on risk profile
    - Build automated collections and risk management systems

Implementation Difficulties:

- Market acceptance of higher interest rates
- Regulatory constraints on collections practices
- Technology investment requirements for risk management
- Potential reduction in market share due to slower growth

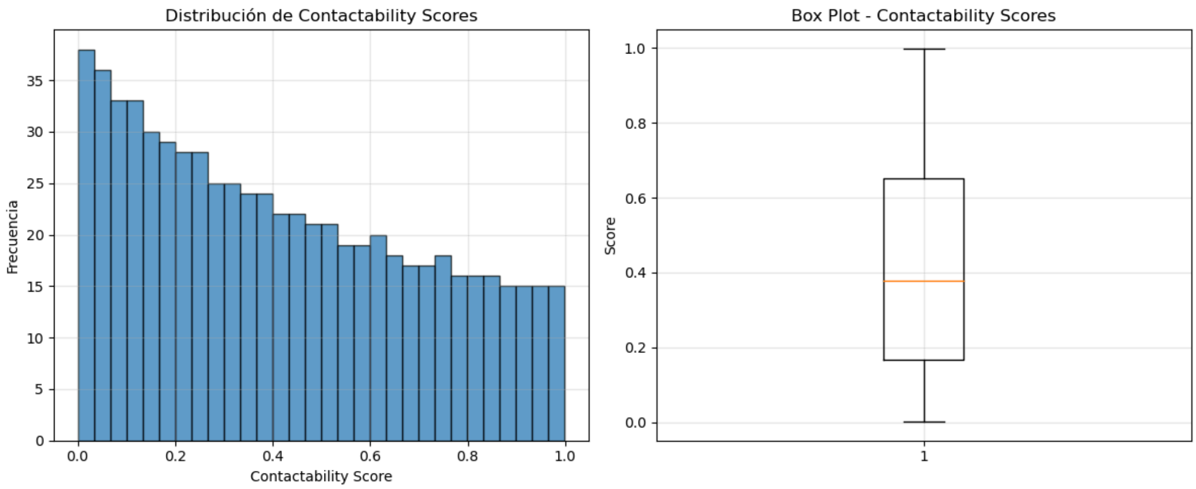
Part 2: Collections Strategy Analysis

Campaign Overview and Data Analysis

The collections team targets Contigo A customers with a phone-based recovery strategy. Analysis of contactability scores reveals:

Contactability Score Distribution:

- Total DQ customers: 675
- Average score: 0.419
- Score range: 0.001 to 0.999
- Median score: 0.378



Campaign Parameters:

- Cost per call: $30
- Payment probability (if contacted): 75%
- Payment probability (if not contacted): 0%
- Target: Recover 175+ accounts to achieve 10% DQ rate

Question 1: Campaign KPIs and Results

Stochastic Simulation Methodology:

The campaign results were generated using a two-stage binomial probability model:

1. **Contact Success**: For each customer i, contact outcome ~ Binomial(1, contactability_score_i)
2. **Payment Success**: For contacted customers, payment outcome ~ Binomial(1, 0.75)

Expected recoveries = Σ(contactability_score_i × 0.75) ≈ 675 × 0.419 × 0.75 = 212 accounts

Simulation Results (All 675 DQ Customers):

KPI	Value
Accounts Recovered	281 of 675
Total Debt Recovered	$323,150
Interest Revenue	$42,150
Total Campaign Cost	$20,250
Remaining DQ Losses	$394,000
Collections Income	$302,900
Success Rate	41.6%
Campaign ROI	15.0x

Question 2: Business Impact Analysis

Performance Comparison:

Metric	Without Campaign	With Campaign	Difference
Interest Revenue	$648,750	$690,900	+$42,150
DQ Losses	$675,000	$394,000	-$281,000
Operative Cost	$150,000	$170,250	+$20,250
Net Income	**-$176,250**	**+$126,650**	**+$302,900**

Strategic Justification:

- **Goal Achievement**: Recovers 281 accounts vs. 175 required (161% of target)
- **Financial Transformation**: Converts $176K loss into $127K profit
- **Exceptional ROI**: 15.0x return justifies implementation
- **Product Viability**: Makes Contigo A segment sustainable

Recommendation: IMPLEMENT the collections campaign

Question 3: Campaign Improvements

Optimization Opportunities:

1. **Segmented Targeting**: Focus on customers with scores >0.7 for higher success rates
2. **Multi-channel Approach**: Combine calls with SMS/email for better coverage
3. **Timing Optimization**: Call at optimal hours based on customer profiles
4. **Incentive Programs**: Offer payment plans or discounts for immediate settlement
5. **Automation**: Deploy chatbots for initial contact to reduce costs

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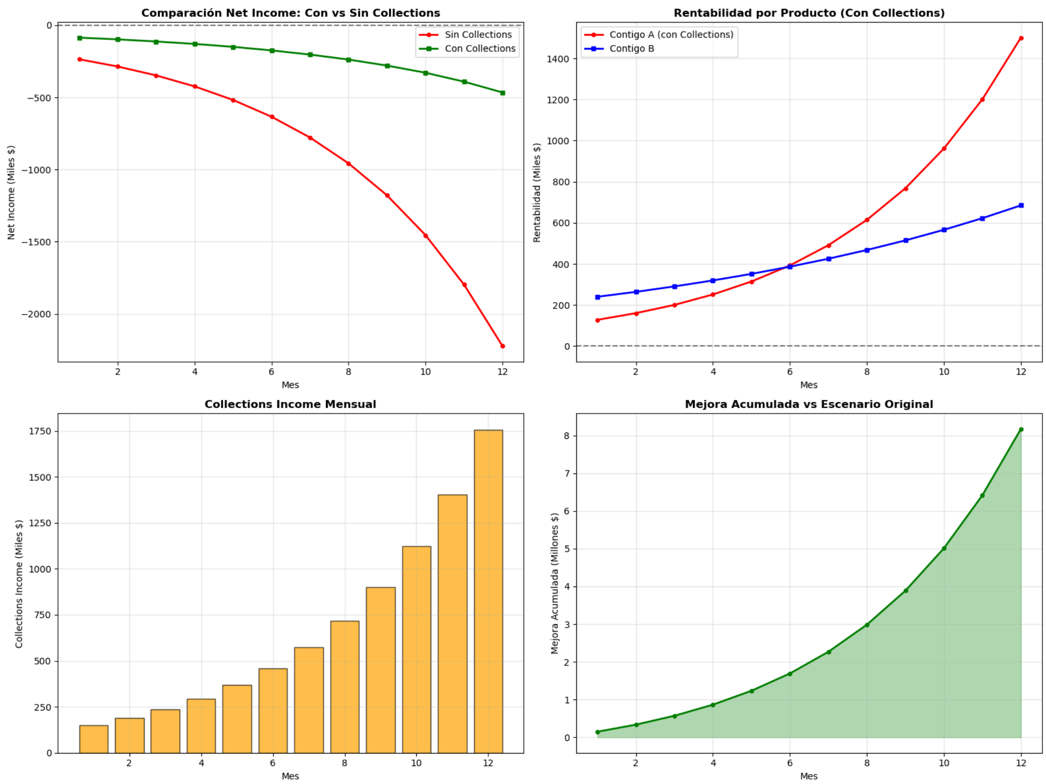
Part 3: Integrated 12-Month Projection with Collections

Enhanced Business Model

The integrated analysis combines the base business projection with optimized collections strategy applied monthly to Contigo A customers.

Collections Engine Configuration:

- Segmented approach: Target top 21.2% of DQ customers (highest contactability scores > .70)
- Expected success rate: 94.4% for high-score segment
- Monthly application throughout 12-month period



Financial Impact Analysis

12-Month Comparison Results:

Month	Net Income (Original)	Net Income (With Collections)	Improvement	Improvement %
1	-$236,250	-$86,440	+$149,810	+63%
6	-$634,474	-$174,904	+$459,570	+72%
12	-$2,222,983	-$466,283	+$1,756,700	+79%

Collections Performance Metrics

Monthly Collections Evolution (First 6 Months):

Month	DQ Customers	Customers Called	Accounts Recovered	Success Rate	Collections `Income
1	675	143	134	93.7%	$149,810
2	843	178	168	94.4%	$187,860
3	1,054	223	210	94.2%	$234,810
4	1,318	279	263	94.3%	$294,080
5	1,647	349	329	94.3%	$367,880
6	2,059	436	411	94.3%	$459,570

12-Month Aggregated Results:

- Total Collections Income: $8,174,000
- Total Collections Cost: $232,500
- Total Accounts Recovered: 7,310
- Overall ROI: 35.2x

Product Performance Transformation

Contigo A Profitability Evolution (With Collections):

- Month 1: $127,850 (positive profitability achieved)
- Month 12: $1,501,063 (exceeds Contigo B profitability)

The collections strategy successfully transforms Contigo A from a value-destroying segment to the most profitable product in the portfolio.

Strategic Recommendations and Next Steps

Key Conclusions

1. **Collections as Business Enabler**: The collections strategy is not just beneficial but essential for business viability, improving 12-month performance by 79%

2. **Optimized collections strategy:** achieves consistent 35.2x monthly ROI through targeted segmentation, significantly outperforming the 15x ROI of unsegmented campaigns
3. **Product Portfolio Rebalancing**: Collections transforms Contigo A from liability to competitive advantage

Implementation Strategy

Phase 1 (Months 1-3): Pilot Implementation

- Deploy segmented collections for high-score customers
- Monitor success rates and optimize calling strategies
- Invest in basic automation tools

Phase 2 (Months 4-6): Scale and Optimize

- Expand to medium-score segments if ROI remains positive
- Implement multi-channel communication
- Develop predictive models for optimal timing

Phase 3 (Months 7-12): Full Automation

- Deploy AI-powered chatbots for initial contact
- Implement real-time decision engines
- Scale collections to support continued 25% growth

Risk Factors and Mitigation

Key Risks:

- Customer fatigue from intensive collections
- Regulatory compliance requirements
- Technology infrastructure investments
- Market saturation of contactable customers

Mitigation Strategies:

- Gradual escalation protocols to maintain customer relationships
- Legal compliance framework development
- Phased technology investment with measurable ROI gates
- Continuous expansion of customer base to maintain pipeline

Final Business Impact

The integrated analysis demonstrates that while collections significantly improves financial performance, the underlying business model still requires additional structural changes for long-term sustainability. Collections buys critical time and cash flow improvement (reducing 12-month losses from $2.2M to $466K) but must be combined with:

- DQ rate reduction initiatives
- Product mix optimization
- Operational efficiency improvements
- Enhanced credit risk management

Recommendation: Implement collections strategy immediately while developing comprehensive business model improvements for sustainable long-term growth.