Improving Instamart Profitability: A Business Analytics Case Study

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Interactive Dashboard: https://instamart-profitability-engine-wvrtjo8lurq5sppk5j7udg.streamlit.app/#swiggy

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1. Problem Statement

Quick-commerce (Q-commerce) businesses like Swiggy Instamart operate on thin margins due to high last-mile delivery costs, dark store overheads, and discount-heavy growth. Despite massive scale, achieving Contribution Margin (CM2) positivity is the industry's primary challenge.

The Business Question: How can Instamart improve profitability per order while continuing to scale volumes?

2. Analytical Approach

I developed the Instamart Profitability Engine, an interactive analytics tool to simulate the unit economics of the Q-commerce model.

- KPIs Analyzed: AOV (Average Order Value), Delivery Cost per Order, Discount Burn, and Fixed Cost Absorption.

- Simulation Logic: The engine models how changes in delivery fees, AOV, and operational costs impact the bottom line in real-time.

3. Key Strategic Insights

- AOV is the Strongest Lever: A ₹50–₹70 increase in AOV (via cross-selling) has a significantly higher impact on profitability than a 20% increase in order volume.

- Cost Efficiency vs. Fees: Reducing delivery costs by ₹10 through batching is 2x more sustainable for customer retention than increasing delivery fees by ₹10.

- Scale Paradox: High volume without a healthy contribution margin actually accelerates "burn." Profitability requires a shift from volume-led growth to margin-led growth.

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4. Strategic Recommendations

1. Incentivize High-AOV Baskets: Use tiered delivery pricing (e.g., lower fees for orders above ₹500) and AI-driven "Smart Bundling" to increase items per basket.

2. Optimize Delivery Densities: Prioritize "Demand Clustering" and multi-order batching during peak hours (e.g., IPL match nights) to dilute the last-mile cost per order.

3. Dynamic Discounting: Move away from flat discounts to "Margin-Aware" discounting that triggers only for high-margin categories or repeat customers with high LTV.

5. Technical Execution

- Tools: Developed using Python (Pandas) for financial modeling, Plotly for business visualizations, and Streamlit for the executive UI.

- Advanced Features: Includes a simulated XGBoost Demand Forecast and a Sensitivity Matrix to test the "Break-even" point for individual dark stores.

6. Why This Case Study Matters

This project demonstrates my ability to bridge the gap between technical data analysis and executive business strategy. By focusing on CM2 positivity, I am addressing the most critical business goal for Swiggy Instamart in 2026. It reflects a commitment to building data-driven solutions for real-world operational challenges.

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