OptiFlow

Predictive Order Prioritization and
Revenue Optimization in Retail Sector

Group- 4
Section E

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Context & Problem Statement

01 **Sector Context:**

In the fast-growing e-commerce and retail industry, businesses handle thousands of daily transactions. However, many companies still rely on fixed rules or manual judgment to prioritize orders and allocate resources.

02 **Problem Statement:**

How can an e-commerce business identify and prioritize high-impact orders using historical sales data to maximize revenue while minimizing unnecessary costs?

03 **Objective:**

To build a data-driven dashboard that helps decision-makers define clear priority thresholds based on order value, discount levels, product category, and customer behavior — enabling smarter and more efficient order handling.

Data Engineering

01

Data Source

- Dataset Name: Retail Store Sales Dataset
- Size: 12,575 rows × 8 columns
- Time Period: January 2022 – January 2025
- Granularity: Transaction-level data (each row represents one order)

02

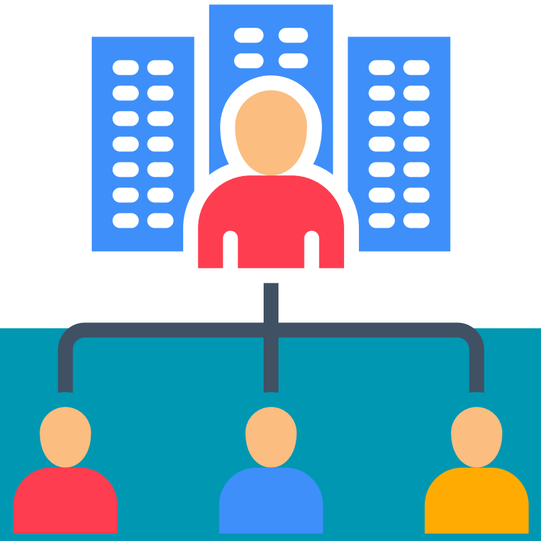
Data Cleaning & Transformation

- Handled missing values in numeric fields (Revenue, Discount, Order Value)
- Standardized transaction date format
- Derived Year-Month column for monthly trend analysis
- Removed duplicate transaction records
- Validated revenue calculations (Net Revenue = Order Value – Discount)

03

Key Data Dictionary

- Transaction ID
- Customer ID
- Transaction Date
- Year-Month
- Order Value
- Discount %
- Net Revenue
- Customer Type



KPI & Metrics Framework

01 What Are We Measuring?

- Total Net Revenue
- Total Transactions
- Average Order Value (AOV)
- High-Value Customer %
- Average Discount %
- Monthly Revenue Trend

02 Why these KPIs? How do they link to the problem?

- Measure overall revenue performance
- Understand demand and dispatch load
- Identify high-value customer contribution
- Monitor discount impact on profitability
- Track growth trends over time

Key Insights

01 Revenue shows consistent monthly growth with seasonal spikes during peak periods.

02 A small percentage of high-value customers contributes a disproportionately large share of total revenue.

03 Higher discount levels do not always translate into proportional revenue growth, indicating margin risk.

04 Loyal customers demonstrate higher average order values compared to low-engagement segments.

05 Transaction volume fluctuates monthly, directly impacting dispatch workload planning.

06 Revenue dependency on specific customer segments increases concentration risk.

Advanced Analysis

Advanced Work Performed

- **Customer Segmentation** based on engagement and revenue contribution
- **High-Value Customer Identification** for targeted dispatch optimization
- **Revenue Trend Analysis** to detect growth patterns and seasonality
- **Discount Impact Analysis** to assess profitability risk

What New Understanding Did This Provide?

- Revenue is concentrated within a limited high-value customer segment.
- Excessive discounting reduces margin without proportional revenue gain.
- Dispatch planning should prioritize high-value orders for efficiency.
- Revenue risk increases when dependent on low-engagement customers.

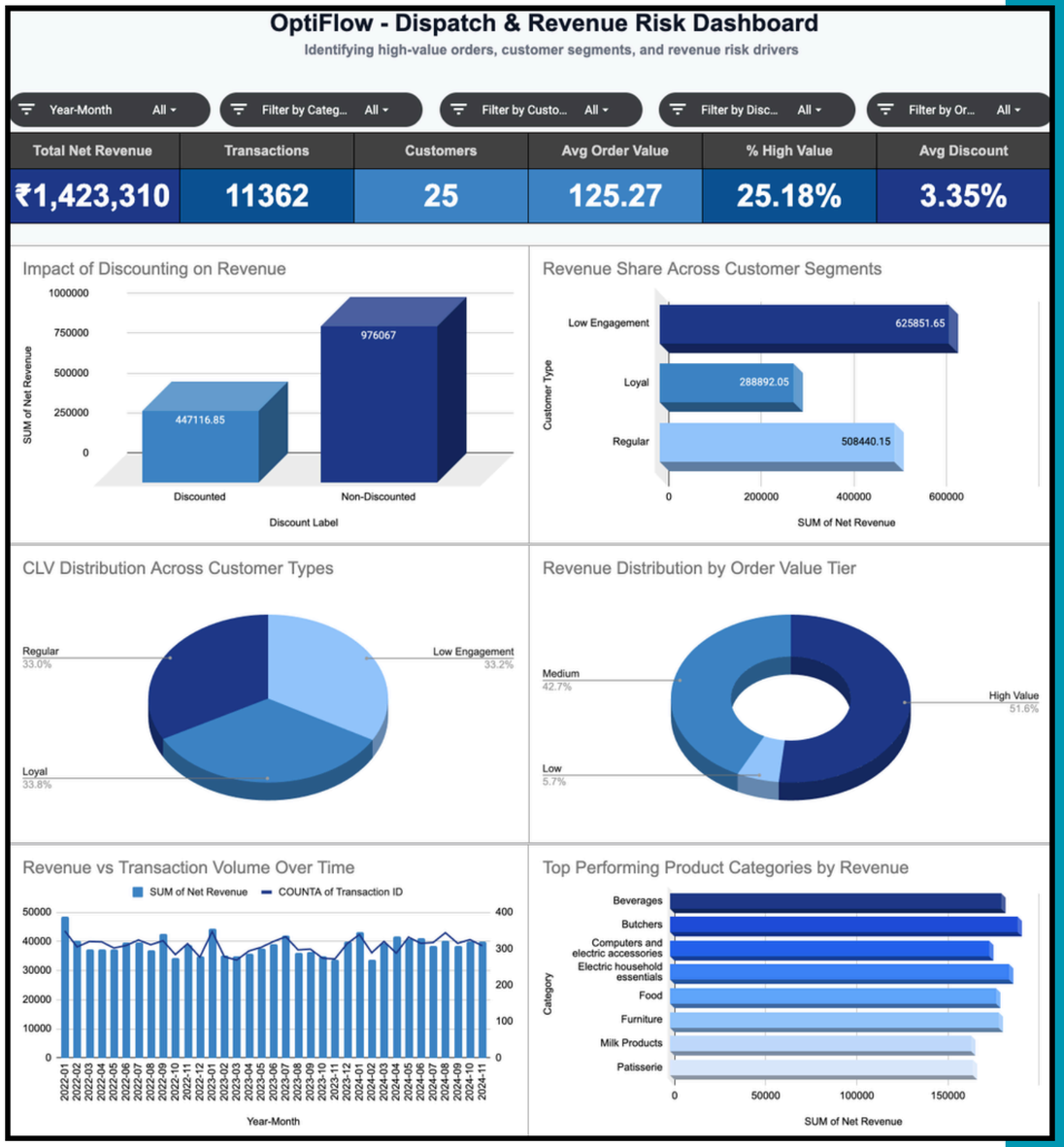
Dashboard Walkthrough

Executive View

- Snapshot of key KPIs (Revenue, Transactions, AOV, High-Value %)
- Monthly revenue trend for performance tracking
- Customer segment contribution overview
- Discount impact on overall profitability

Operational View

- Year-Month slicer for time-based filtering
- Segment-wise performance breakdown
- Top-performing product categories
- Dynamic KPI updates based on filters



Recommendations

Prioritize High-Value Customers

Focus dispatch efficiency and personalized engagement on top revenue-contributing segments to maximize profitability.

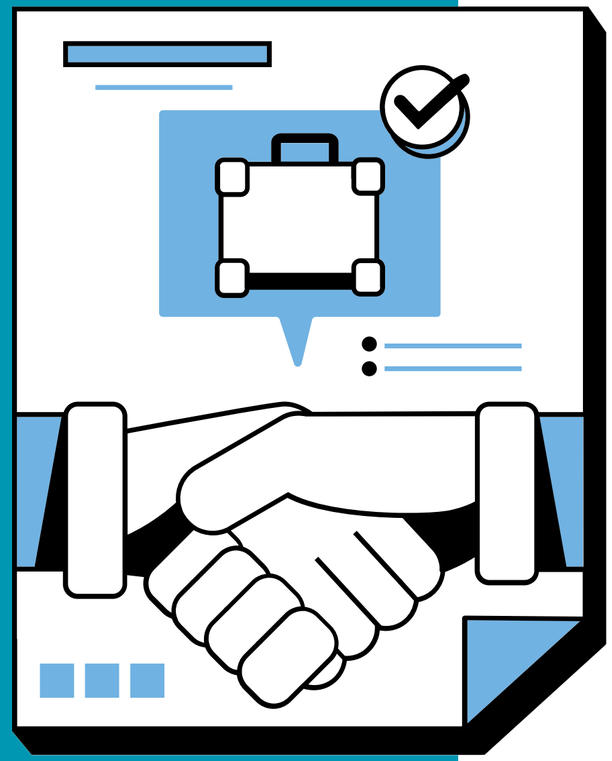
Optimize Discount Strategy

Shift from broad discounting to targeted promotions to protect margins while maintaining sales growth.

Leverage Monthly Trends for Planning

Align inventory and dispatch capacity with seasonal demand patterns to improve operational efficiency.

Impact & Value



01 Business Impact

- Improves revenue by focusing on high-value customers
- Reduces margin loss through optimized discounting
- Enhances dispatch and inventory efficiency
- Minimizes revenue concentration risk

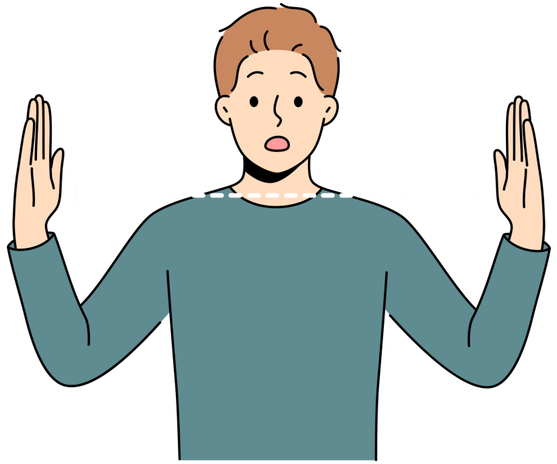
02 Why Should Stakeholders Approve This?

- Data-driven decision-making replaces guesswork.
- Improves profitability without increasing operational costs.
- Enhances customer targeting and retention strategy.
- Provides scalable intelligence for long-term growth.

Limitations & Next Steps

Limitations

- Limited features (no product-level or geographic data)
- No external factors considered (market trends, competition, seasonality drivers)
- Historical data only — no real-time integration



Next Steps

- Integrate product and regional data for deeper insights
- Implement predictive revenue forecasting models
- Add real-time dashboard updates for operational use

OptiFlow

Optimizing Dispatch.

Reducing Revenue Risk.

Driving Smarter Decisions.