

# Online Order Cancellations

Root Cause and Possible Solutions

By Mohit Gupta

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# Agenda

- **Executive Summary**
- **Assumptions**
- **Analysis Insights**
- **Conclusion**
- **Areas of Opportunity**
- **Q&A**

# Executive Summary

## Objective:

- Explore and analyze the online Orders and Cancellation data to identify possible sources for higher cancellation rates.
- Suggest appropriate solutions to each identified cause.

## Observations

1. Most cancellations occur on the same day.
  - Most of these are because of customer-initiated cancellations, who reject the substitute or face stock issues, which comprise 72% of same-day cancellations.
2. StoreBrand leads cancellations.
  - Non-Flavored Water leading category.
3. Alpine, IL being the most popular store in terms of orders, has the highest cancellations as well.
  - Out of Stock and Customer Cancellations driving it.
4. Non-flavoured water leads to around ~\$100K annually loss.
  - Out of Stock, Customer Cancellation, and Expiry causing it.

## Recommendations

1. Enhance real-time inventory updates and recommendation systems to show better alternatives, including size or quantity variations. Pilot returns, exchanges, or discounts to reduce cancellations.
2. Prioritize restocking high-demand items and implement safety stock alerts to prevent stockouts.
3. Optimize inventory management and demand forecasting, especially for high-volume locations and peak periods.
4. Diversify brand offerings to reduce reliance on in-house brands, improve substitutes, and attract more sellers. Leverage competitive pricing to boost margins, profitability, and customer satisfaction.

# Data exploration steps and observations

## Steps:

- **Dataset Integration:** Merge orders and cancellations to analyze trends over the same period.
- **Timing & Reasons:** Analyze cancellation timing and reasons to identify key patterns.
- **Product Impact:** Evaluate cancellations by product, brand, and category to find top contributors.
- **Geographical Analysis:** Investigate cancellations across locations to identify underperforming regions.

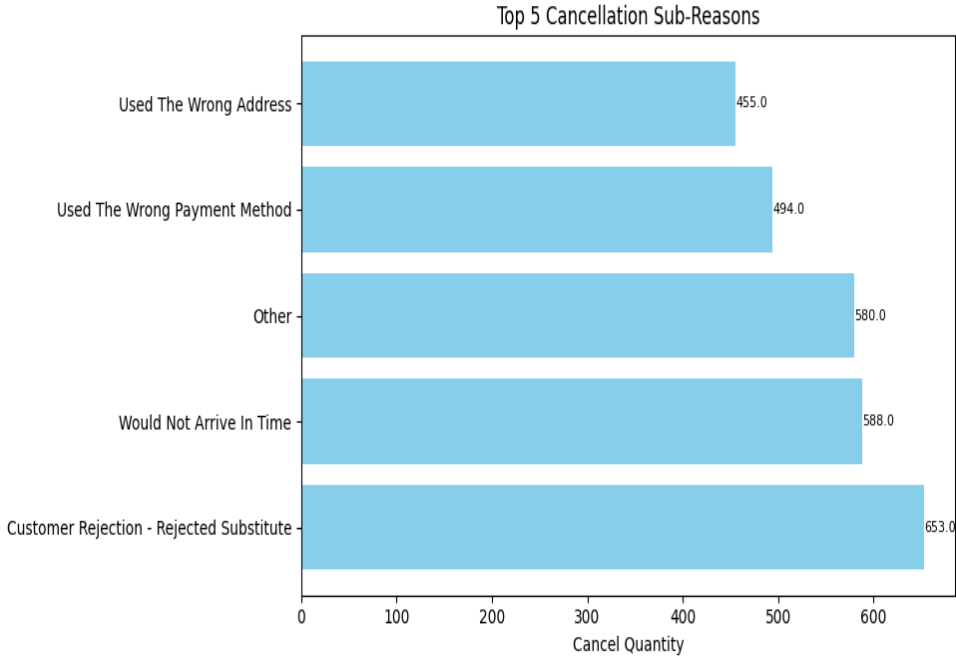
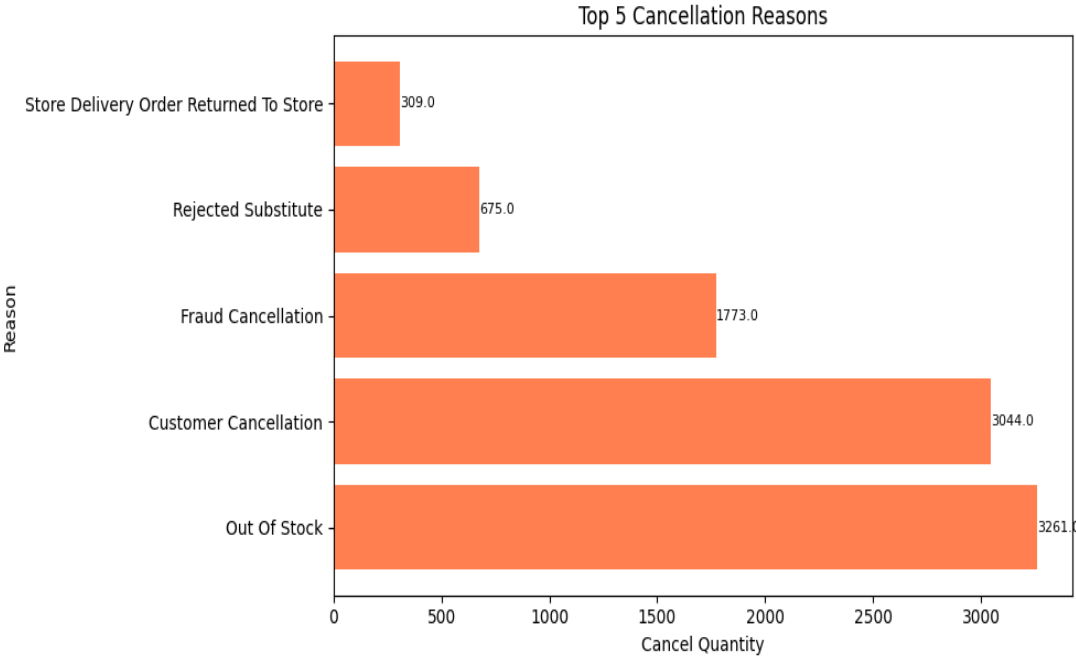
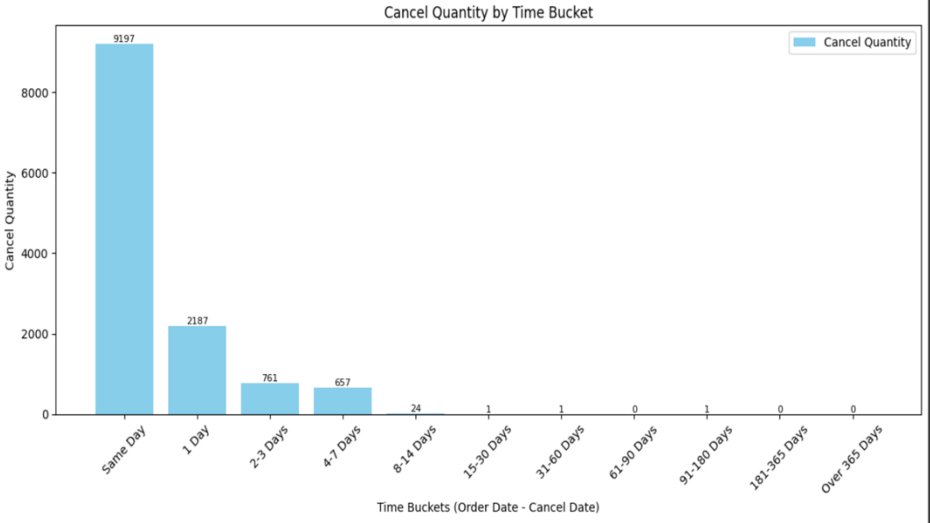
## Assumptions:

- **Cost Definition:** The \$\$ cost represents the total cost of all units for a single order.
- **Composite Key Creation:** A composite key (*STORE\_NUM*, *ORDER\_DT*, *ITEM\_ID*) links Orders and Cancellations datasets.
- **Amount Interpretation:** The *plcd\_amnt* and *cncl\_amt* reflect total quantities, not individual unit prices.

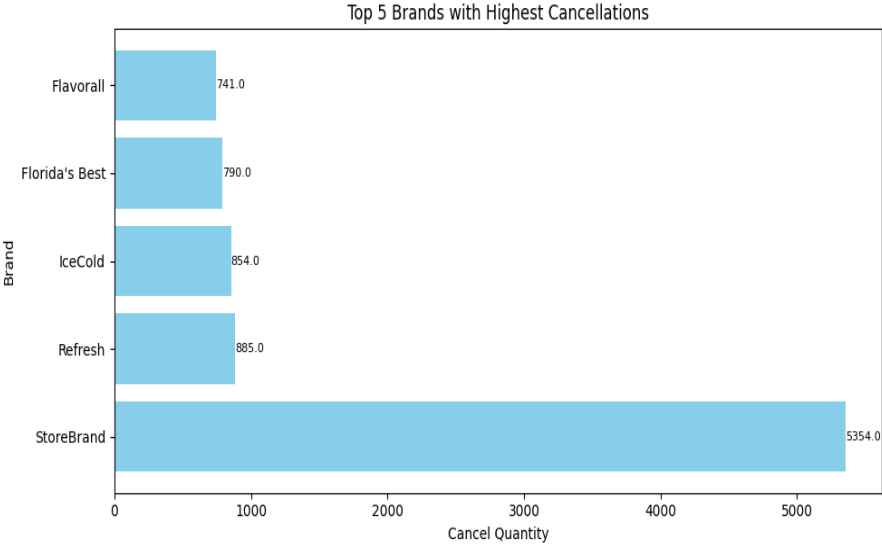
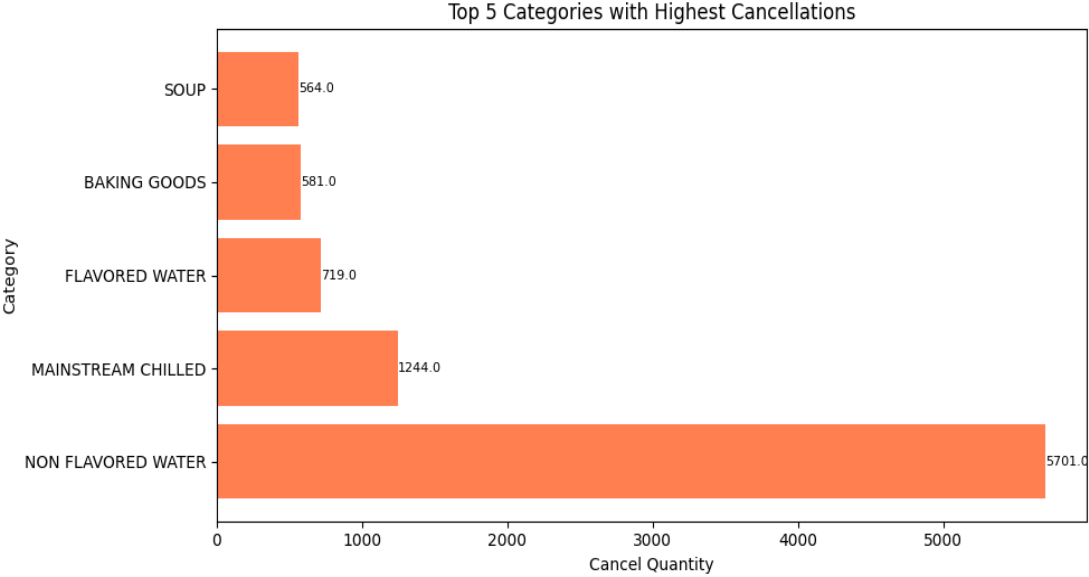
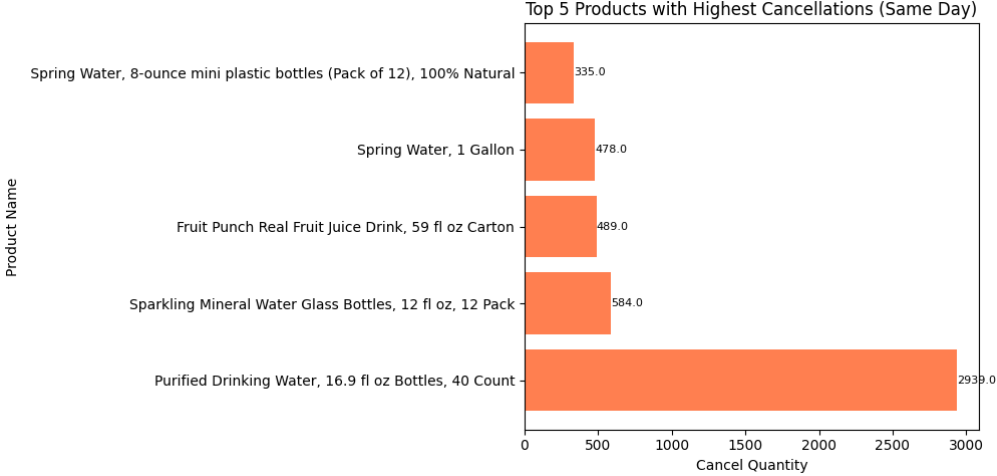
## Data Cleaning & Discrepancies:

- **Data Period Mismatch:** The tables contain data from different periods.
- **Left Join:** An inner join was performed to match cancellations with corresponding orders.
- **Missing Order ID:** The absence of an "Order ID" complicates linking orders to cancellations.
- **Composite Key:** A composite key was created, but an Order ID would simplify identifying canceled orders.
- **Missing Product Names:** Some products in the dataset lacked names.
- **Duplicate Products:** Duplicate entries were found for products with both active and discontinued statuses.

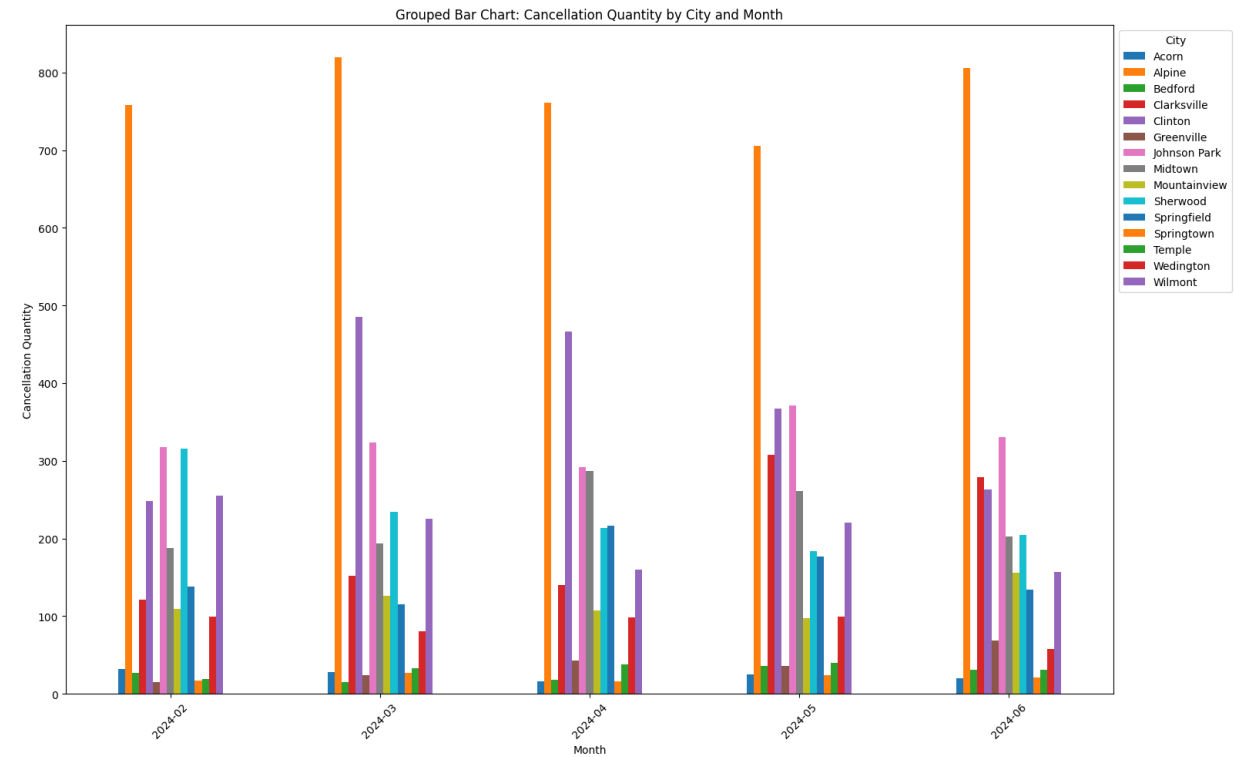
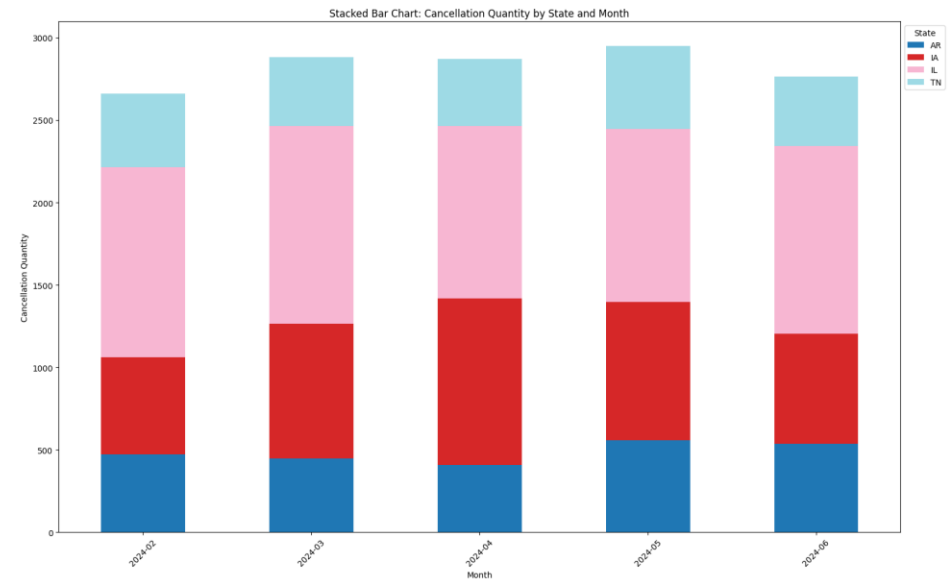
Key Insights on Cancellation  
Patterns and Root Causes  
Driving Revenue Loss



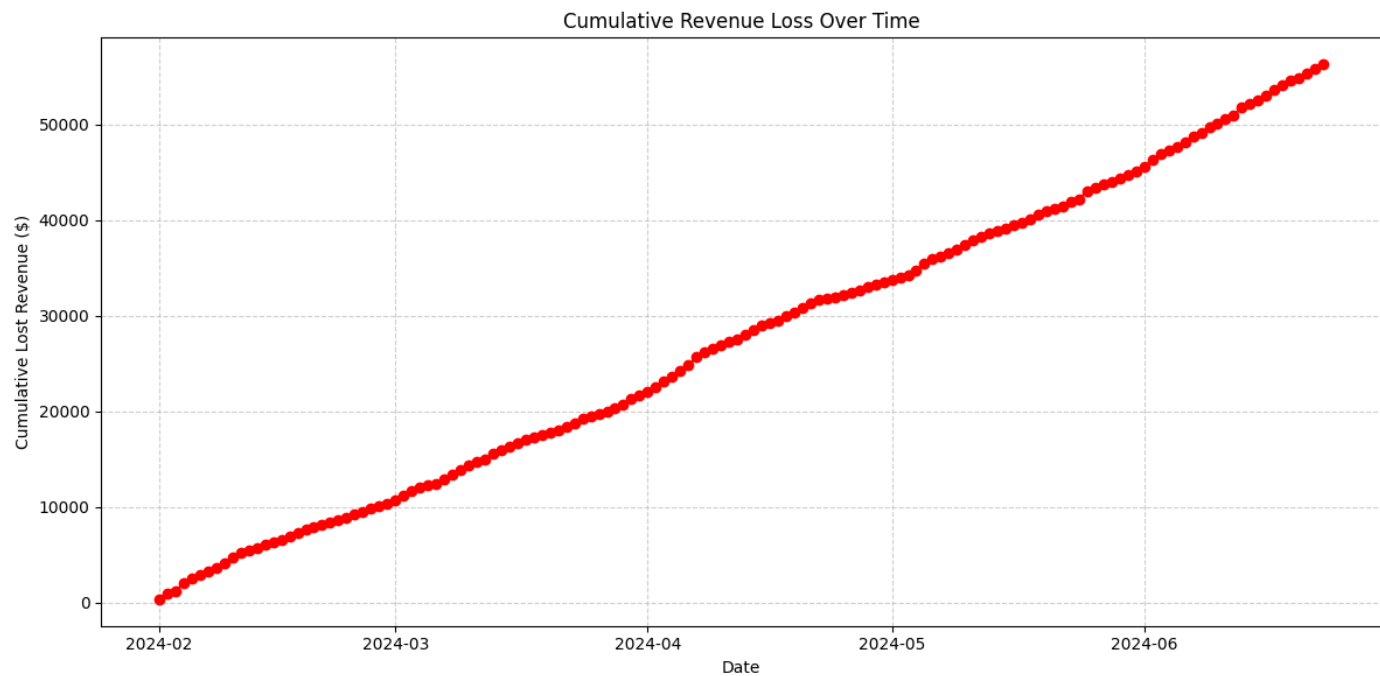
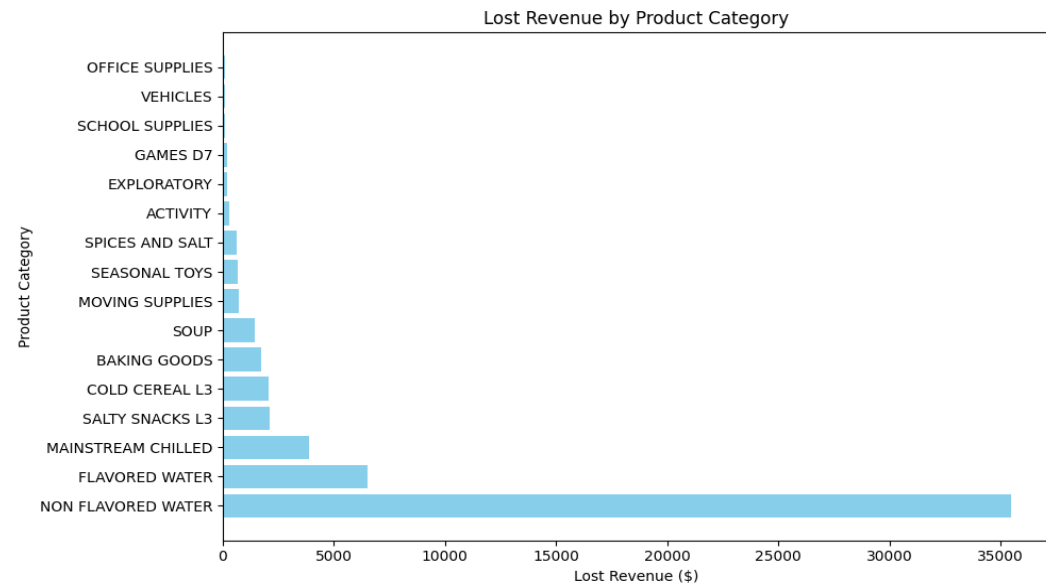
Key Insights on Product, Category, and Brand-Level Cancellations



Geographical Trends in  
Cancellations Across States  
and Cities



## Revenue Loss Analysis by Product Category and Over Time





# Conclusion

## **Summary of Findings:**

The analysis highlights key drivers of cancellations, including same-day cancellations (70%), rejected substitutes, and inventory gaps, particularly for high-demand products. Locations such as Alpine, IN, face significant challenges due to stockouts and poor demand planning during peak events.

## **Impact of Issues:**

These challenges result in up to \$40K in revenue losses from the top 20% of products, reduced customer satisfaction, and operational inefficiencies. Over-reliance on **StoreBrand** further limits customer options and contributes to cancellations.

## **Proposed Solutions:**

By implementing real-time inventory updates, better demand forecasting, and diversifying brand offerings, cancellations can be reduced, customer experience improved, and revenue losses mitigated.

## **Path Forward:**

Addressing these pain points will streamline operations, boost customer trust, and ensure sustained growth through improved profitability and satisfaction. The next step is to pilot these recommendations and track performance metrics to validate impact.

# Data exploration steps and observations

- **Refine Data Quality and Monitoring**

Train teams on accurate data entry and implement validation tools.

Set up dashboards to monitor KPIs like inventory accuracy and cancellation rates.

- **Standardize Product Data**

Remove redundant product entries and ensure each product ID has a single, standardized name.

Fill in missing product names for accurate item-level analysis.

- **Enhance Product Lifecycle Management**

Archive discontinued products while retaining historical order records.

Implement workflows for systematic product deactivation.

- **Validate Negative Inventory Levels**

Investigate negative inventory to identify stock discrepancies or data errors. Conduct physical inventory counts every six months, implement daily inventory reporting by revenue and stock, and use ABC classification to prioritize high-value and fast-moving items.

Thank you!

Questions?