Zepto Sales & Inventory Analytics (SQL + Power BI)

Project Title: Zepto Sales & Inventory Analytics (SQL+POWER BI)
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1. Introduction

The Zepto Sales & Inventory Analytics (SQL + Power BI) project represents a comprehensive data-driven initiative aimed at optimizing sales performance, pricing efficiency, and inventory management within a dynamic retail environment. Leveraging SQL for in-depth data cleaning, transformation, and exploratory analysis, and Power BI for visualization and executive reporting, this project analyzes over 4,000 SKUs across 10 major product categories to identify key revenue drivers and operational inefficiencies.

The analysis focuses on uncovering how discount structures, product pricing, and stock availability influence overall business performance. Using structured SQL queries and interactive Power BI dashboards, the project translates complex datasets into actionable insights that can support strategic decisions on pricing, inventory allocation, and category prioritization. This integration of technical rigor and business intelligence demonstrates the analytical thinking and problem-solving approach expected from professional data analysts in multinational organizations.

2. Business Problem Statement

Zepto faced challenges in understanding how pricing, discounts, and inventory dynamics impact overall sales and profitability across its diverse product categories. Management needed clear insights to identify revenue-driving segments, assess the real impact of discounts, and detect high-value products frequently going out of stock.

This project leverages SQL for detailed data analysis and Power BI for visual storytelling to uncover patterns in revenue, discount performance, and stock

efficiency. The ultimate goal is to enable data-driven decisions that optimize pricing strategy, inventory planning, and profit growth.

3. Methodology: Step-by-Step Process

Tools Used: SQL (PostgreSQL), Power BI

Approach: Data Cleaning → Data Analysis → Visualization
Data cleaning handled price standardization, removal of zero-priced records, and null handling. SQL queries uncovered key business insights, later visualized in Power BI dashboards.

3.2. Phase 2: Data Analysis (SQL Logic)
- **Objective:** To extract insights from the structured data to answer key business questions.
- **Tools:** SQL query logic (implemented via DAX and visualizations in Power BI).
  - **Key Questions Analyzed (Examples):**
    1. Find the top 5 best-value products based on the discount percentage.

name character varying (150)	mrp numeric (8,2)	discountpercent numeric (5,2)
Dukes Waffy Strawberry Wafers	45.00	51.00
Dukes Waffy Orange Wafers	45.00	51.00
Dukes Waffy Chocolate Wafers	45.00	51.00
Chef's Basket Durum Wheat Elbow Pasta	160.00	50.00
Ceres Foods Fish Mustard Instant Liquid Masala	220.00	50.00

2. What are the Products with High MRP but Out of Stock

name character varying (150)	mrp numeric (8,2)
Patanjali Cow's Ghee	565.00
MamyPoko Pants Standard Diapers, Extra Large (12 - 17 kg)	399.00
Aashirvaad Atta With Mutigrains	315.00
Everest Kashmiri Lal Chilli Powder	310.00

3. Calculate Estimated Revenue for each category

category character varying (120)	total_revenue numeric
Fruits & Vegetables	10846.00
Meats, Fish & Eggs	20693.00
Biscuits	25007.60
Beverages	55051.00
Dairy, Bread & Batter	55051.00
Health & Hygiene	64180.00
Home & Cleaning	122661.00
Ice Cream & Desserts	224385.00
Chocolates & Candies	224385.00
Packaged Food	224385.00
Personal Care	270849.00
Paan Corner	270849.00
Munchies	337369.00
Cooking Essentials	337369.00

4. Find top 5 products where MRP is greater than ₹500 and discount is less than 10%.

name character varying (150)	mrp numeric (8,2)	discountpercent numeric (5,2)
Dhara Kachi Ghani Mustard Oil ...	1250.00	8.00
Saffola Gold (Jar)	1240.00	0.00
Dhara Filtered Groundnut Oil (Jar)	1050.00	1.00
Fortune Rice Bran Health Oil (Jar)	1050.00	1.00
Dhara Filtered Groundnut Oil (Jar)	1050.00	0.00

5. Identify the top 5 categories offering the highest average discount percentage.

category character varying (120)	avg_discount numeric
Fruits & Vegetables	15.46
Meats, Fish & Eggs	11.03
Ice Cream & Desserts	8.32
Chocolates & Candies	8.32
Packaged Food	8.32

6. Find the price per gram for products above 100g and sort by best value.
7.

|	name character varying (150)	weightingms integer	discountedsellingprice numeric (8,2)	price_per_gram numeric
1	Tata Salt	1000	24.00	0.02
2	Onion	1000	21.00	0.02
3	Shubh kart - Nirmal sugandhi mogra wet dhoop zipper 20 sticks	1160	28.00	0.02
4	Onion	3000	57.00	0.02
5	Aashirvaad Iodised Salt	1000	19.00	0.02
6	Vicks Cough Drops Menthol	1160	20.00	0.02
7	Beetroot	500	13.00	0.03
8	Baby Potato	500	16.00	0.03
9	Potato	3000	84.00	0.03
10	Carrot	500	15.00	0.03

7. What is the Total Inventory Weight Per Category

category character varying (120)	total_weight bigint
Meats, Fish & Eggs	48016
Biscuits	84431
Fruits & Vegetables	91794
Health & Hygiene	142904
Dairy, Bread & Batter	143735
Beverages	143735
Paan Corner	348187
Personal Care	348187
Home & Cleaning	373161
Ice Cream & Desserts	490797
Chocolates & Candies	490797
Packaged Food	490797
Munchies	1404654
Cooking Essentials	1404654

SQL Analysis & Insights:
• Removed zero-priced and duplicate entries to improve data integrity.
• Identified **Top 10 discounted products** and **High MRP items that were out-of-stock**.
• Computed **Total Revenue by Category** and **Total Inventory Weight**.
• Grouped products into **Low, Medium, Bulk** weight categories.
• Calculated **Top 5 categories by average discount** (avg. > 30%).
These insights highlighted key revenue drivers and areas of inefficiency in product mix.

3.2. Phase 2: Visualization & Insights (Power BI)
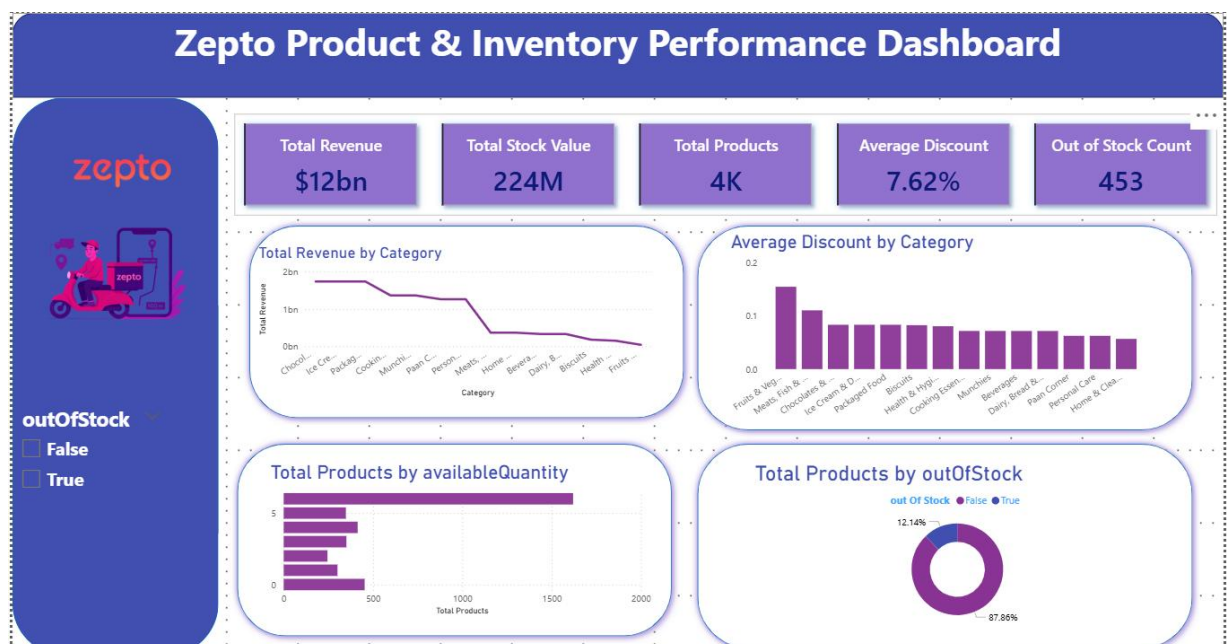
The Power BI dashboard provides an interactive overview of Zepto's sales and stock performance:
• **Total Revenue:** $12B across all categories.
• **Total Stock Value:** 224M units.
• **Average Discount:** 7.62%.
• **Out-of-Stock Count:** 453 items (≈12%).
• **Top Categories:** Beverages, Packaged Food, and Personal Care dominate revenue.
• **Key Insight:** Discounts above 10% are common in Fruits & Veggies but don't significantly increase revenue

Business Recommendations:
1. **Optimize Discounts:** Reduce flat discounts in low-performing categories; introduce targeted promotions.
2. **Stock Management:** Maintain 20% buffer stock for fast-moving bulk items to prevent lost sales.
3. **Pricing Strategy:** Reprice high-MRP, low-discount items to improve competitiveness.4. **Category Prioritization:** Focus on high-revenue segments like Beverages and Packaged Food for sustained growth.
The Zepto Product & Inventory Analytics project demonstrates how integrated SQL and Power BI analysis can translate raw data into actionable insights. This analysis identifies key business levers—pricing, discount optimization, and stock efficiency—that directly impact profitability and customer satisfaction.

6. CONCLUSION

The analysis delivers clear, actionable insights to enhance Zepto's product performance and inventory efficiency. By optimizing discount strategies, prioritizing high-revenue categories, and maintaining buffer stock for fast-moving items, the company can drive higher revenue, reduce out-of-stock risks, and improve customer satisfaction. Targeted pricing and stock management decisions informed by this analysis enable Zepto to maximize profitability, streamline operations, and strengthen its competitive position in the retail market.

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