
BUSINESS DATA MANAGEMENT

Capstone Project Proposal



Optimizing Inventory and Operations for Sustainable Growth in a Family-Run Grocery Business

Submitted By :-

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Declaration Statement :

I am working on a Project titled "**Optimizing Inventory and Operations for Sustainable Growth in a Family-Run Grocery Business**". I extend my appreciation to Jai Maa Jhandewali Store, for providing the necessary resources that enabled me to conduct my project.

I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the principles of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I understand that all recommendations made in this project report are within the context of the academic project taken up towards course fulfillment in the BS Degree Program offered by IIT Madras. The institution does not endorse any of the claims or comments.



Signature of Candidate: (Digital Signature)

Name: Sumit Kumar

Date: 02-12-2024

Executive Summary :

Jai Maa Jhandewali Store, located in Pitampura, Delhi, is a family-run grocery business providing essential products like biscuits, namkeens, packed milk, spices, and other groceries. Established by Mr. Satyam Prakash two years ago with an initial investment of Rs. 7 lakh, the store has recently started generating profits after recovering the initial investment in 1.5 years. However, the store faces challenges with inventory management, space constraints, and limited growth potential due to reliance on family members for daily operations and the lack of automated systems.

To address these issues, the store will focus on optimizing inventory management by analyzing sales and purchase data, improving space utilization, and introducing scalable operational processes. Additionally, the introduction of home delivery services will help the store compete with quick-commerce platforms. The project will use tools like Microsoft Excel, inventory management software, and customer surveys to collect and analyze data on sales, inventory, space usage, and customer preferences. The expected outcomes include optimized inventory, improved space efficiency, enhanced profitability, and the development of a more scalable and competitive business model.

Organization Background :

Jai Maa Jhandewali Store is a family-run grocery store located in VP Block, Pitampura, North West Delhi, 110034. The store, owned by Mr. Satyam Prakash, operates as a B2C establishment providing essential daily-use products, including biscuits, namkeens, packed milk, soft drinks, spices, and groceries such as pulses, rice, and wheat.

The store was established two years ago with an initial investment of Rs. 7 lakh and is closely integrated with the family home, enabling it to cater effectively to the surrounding residential community. While the business took approximately 1.5 years to recover its initial investment (excluding inventory costs), it is now profitable.

Currently, Mr. Satyam is pursuing a Master's degree while managing the store with the help of his family. Jai Maa Jhandewali Store aims to address critical business challenges such as inventory management, product assortment optimization, and customer retention strategies to enhance its growth and community impact.

Problem Statement :

- **Inventory Management Issues:** Difficulty in maintaining optimal stock levels, managing fluctuations in sales for perishable and seasonal products, and avoiding wastage or missed sales opportunities.
- **Space Constraints:** Limited physical space restricts efficient inventory storage, product range expansion, and the ability to identify and manage slow-moving products effectively.
- **Limited Business Growth:** Reliance on family-run operations, lack of automated systems for tracking sales and inventory, and physical limitations hinder scalability and operational efficiency.


Problem Background :

Inventory Management Issues:

The store deals with a diverse range of SKUs, including products with varying shelf lives—some perishable and others with extended longevity. Tracking the availability of these products becomes challenging for Mr. Satyam due to the limited time he can dedicate to the business alongside his academic commitments. This often results in inefficiencies, such as overstocking or stockouts, particularly for high-demand or seasonal items. The lack of an automated inventory system exacerbates this issue, increasing the risk of financial losses due to wastage or missed sales opportunities.

Space Constraints:

Operating from a single room attached to the family home, the store faces significant space limitations. To avoid clutter in the shop, some inventory is stored inside the house, making it



inefficient and cumbersome to locate and manage SKUs. This spatial constraint also restricts the ability to expand the product range or introduce new items, ultimately impacting customer satisfaction. The inefficient use of space complicates the overall inventory management process, creating further challenges in maintaining order and accessibility.

Limited Business Growth:

The family-run nature of the store presents barriers to scalability and growth. With all operational responsibilities shared among family members, there is a high likelihood of miscommunication and inconsistencies in daily operations, which can lead to financial losses or customer dissatisfaction. Additionally, the absence of professionalized systems, such as sales tracking and inventory management software, limits the potential for streamlining operations and expanding the business. To stay competitive, the store could consider introducing home delivery services, which would help it compete with quick-commerce platforms and retain a loyal customer base.

Problem Solving Approach :

Methods Used with Justification

To address the challenges faced by Jai Maa Jhandewali Store, a combination of analytical and observational methods will be used. Sales data analysis will identify trends, high-demand products, and seasonal variations to optimize stock levels and reduce wastage. Pricing and **profit margin analysis** will help prioritize high-margin products and ensure competitive pricing strategies. **Inventory turnover analysis** will track stock movement and highlight inefficiencies in replenishment cycles. Process mapping will uncover operational bottlenecks, and competitor benchmarking will provide insights into gaps and opportunities, such as introducing home delivery to tackle competition from quick-commerce platforms. These methods aim to create a comprehensive understanding of the store's operations and customer preferences to drive informed decision-making.

2. Intended Data Collection with Justification

The data collection process will focus on three main areas: sales, inventory, and customer behavior. **Sales data**, including daily, weekly, and monthly figures, will be collected to analyze trends and product performance. **Pricing data**, such as selling prices, cost prices, and discounts, will be examined to calculate profit margins and identify high-margin SKUs. **Purchase data**, including quantities, supplier details, and restocking frequencies, will inform inventory planning and supplier reliability. Additional data on space utilization and customer feedback will help address inefficiencies in storage and align product offerings with customer preferences. Finally, competitor data on product range, pricing, and services will highlight areas for improvement and differentiation.

3. Analysis Tools with Justification

A combination of digital tools and software will be employed to streamline the analysis. **Microsoft Excel** will be the primary tool for organizing and analyzing sales, purchase, and inventory data through pivot tables, charts, and statistical functions. Excel-based tracker will help visualize stock levels and turnover rates. Additionally, visualization tools like **Tableau** or Power BI will create interactive dashboards for better insights into sales and inventory performance. These tools will enable efficient data processing, analysis, and presentation of actionable insights.

Expected Timeline :

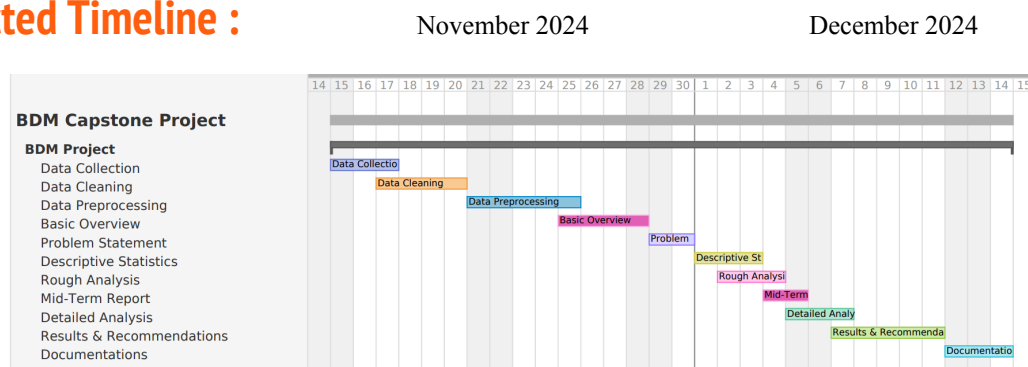


Image 1 :Gantt Chart

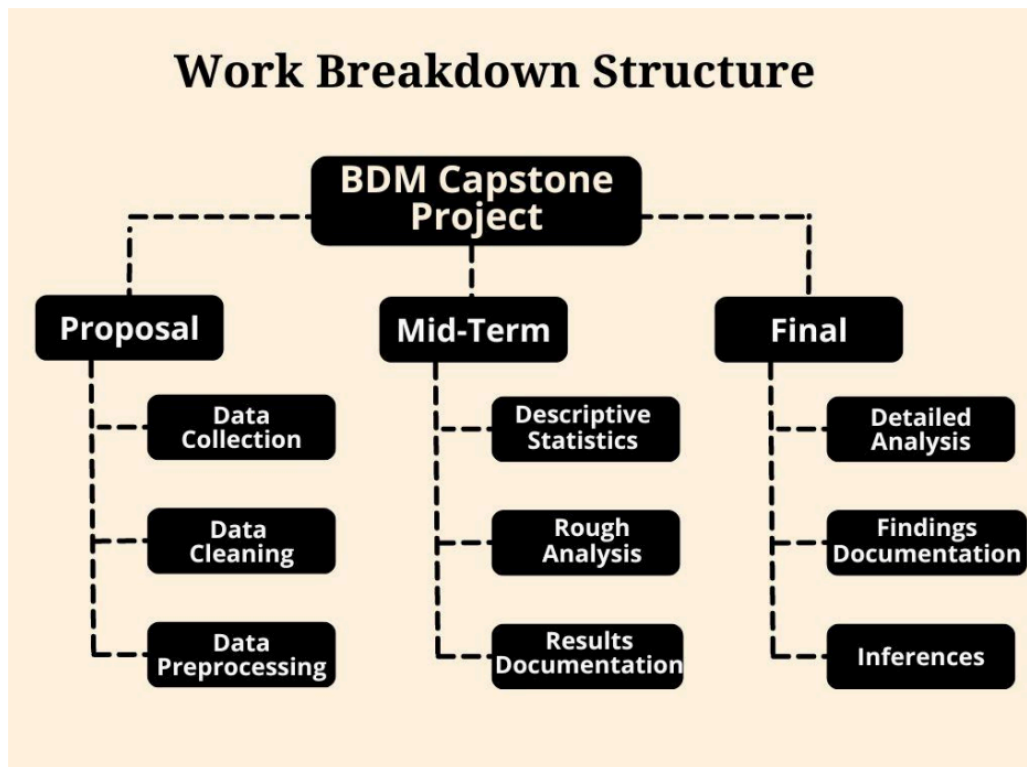


Image 2 : Work Breakdown Structure

Expected Outcomes :

- Improved stock levels and reduced overstocking or stockouts, ensuring better product availability and reduced wastage.
- Identification of high-margin products and implementation of competitive pricing strategies to maximize profits.
- Efficient use of available space, reducing clutter and enabling better product organization.
- Streamlined processes and automated systems to reduce dependency on family members and increase operational efficiency.
- Introduction of home delivery services to compete with quick-commerce platforms and enhance customer retention.
- Informed decisions based on sales, customer preferences, and competitor insights, leading to targeted product offerings and marketing strategies.