

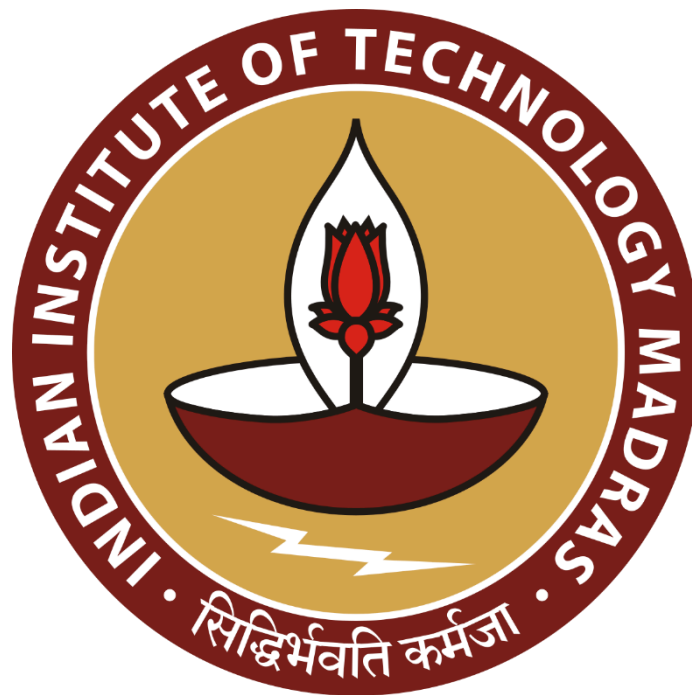
Optimizing Inventory Management and Sales Strategies in Fertilizer Shop

A Proposal report for the BDM capstone Project

Submitted by

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Declaration Statement

I am working on a Project titled “**Optimizing Inventory Management and Sales Strategies in Fertilizer Shop**”. I extend my appreciation to **IFFCO BAZAR**, 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.

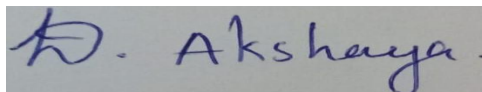
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

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:

A rectangular box containing a handwritten signature in blue ink. The signature appears to be "D. Akshaya" with a stylized initial "D" and a period.

Name: Dachevall Akshaya

Date: 04-04-2024

1 Executive Summary and Title

My Project focuses on the IFFCO BAZAR. It is a Fertilizer retail outlet located in Doulothabad, Hathnoora Mandal, Sangareddy District, Telangana State. It is operating as a B2C Business. IFFCO BAZAR serves as a local Agricultural Community by providing a wide range of fertilizer products. Primarily it is operating in the Agricultural Sector.

IFFCO BAZAR operates within the Agricultural Sector. The main customers of this business are farmers. Farmers use fertilizers to enhance soil health and optimize crop growth. This shop is situated near to Five Villages. This shop experiences high sales during the planting season and harvesting season when farmers require fertilizers and other products to prepare fields, support crop growth and maximize yields. Sales also fluctuate depending on Weather conditions. Government subsidies further stimulate purchases, leading to stockouts during the peak seasons. However due to limited product shelf life and improper storage this shop struggles with excess stock which can result in damage and waste. IFFCO BAZAR exclusively sells products manufactured by IFFCO , yet many customers are uneducated farmers , they are unaware of available products.

These issues will be addressed by doing the various analyses on the data collected from the shop. Analysis of sales trends, by using sales trends forecasting the future demand by using the various graphs. Categorizing products based on the sales volume and revenue.

Insights obtained from the analysis of the data will help the IFFCO BAZAR to know when to order the products and how much to order the products. This will help to avoid the stockouts and excess stock in the godowns. This analysis will increase the shop's performance and enhance its competitiveness compared to the shops.

2 Organization Background

The business that I am working with is IFFCO BAZAR (Indian Farmers Fertilizer Cooperative Limited). It is one of India's largest cooperative societies primarily operating in the agricultural sector. IFFCO BAZAR outlets operate under the brand name of IFFCO BAZAR and are owned by IFFCO Ltd. The specific IFFCO BAZAR outlet chosen for the Capstone Project is located in Doulothabad, which is near to my village, and it is managed by Nenavath Rajesh. He is an employee of IFFCO. He Started this business in the year 2017. It is an organized B2C Business. This Shop contains two godowns and one main office. Two workers are working in this shop. Shop is equipped with two systems for generating sales bills and for maintaining the daily sales data. The employee maintains everyday sales data and he submits daily sales reports to the company. The employee orders the fertilizers based on the requirements and replenishes the stock by sending an email to the company, which then supplies products to the shop. Company provides salary to the employee and gives incentives. In this outlet it sells Bio-Fertilizers, Nano-Fertilizers, Pesticides, Water Soluble Fertilizers, Cattle feed, gardening products, Sprayers. The objective is to provide modern retail experience to the India Farmers by delivering Agricultural inputs under one roof.

3 Problem Statement

- 3.1 Enhance inventory efficiency by analyzing sales trends and optimizing stock levels.
- 3.2 To identify effective strategies for improving sales and inventory management .
- 3.3 Strategies to educate customers on new eco-friendly products produced by IFFCO.

4 Background of the Problem

IFFCO BAZAR is operated by a single employee, the primary goal is to deliver quality products to farmers in the required quantities and at the right times, particularly during planting and harvesting season and soil cultivation seasons. However stockouts occur frequently during peak seasons, leading to missed sales opportunities . Since the shop exclusively sells IFFCO company products, stockouts result in lost customers. Who opt to purchase from other shops in that area. Despite the demand, the employee faces constraints in ordering additional inventory due to the exclusive partnership with IFFCO company. so there is a need to optimize the inventory management to avoid stockouts during peak seasons. In general IFFCO produces eco-friendly products and conducts field research before releasing them into the market. They provide training to the employees on the product usage and information to tell the customers. However, the shop's customers, primarily uneducated farmers, pose a challenge. Even Though this shop employee is trying to convey the product details and uses but due to lack of knowledge of the farmers he is unable to sell the new products more. Improper storage and environmental conditions sometimes lead to stock damage and product wastage. Due to inefficient inventory checks, sometimes they consider the damaged products as stock and this time he loses the sales. These stock outs occur due to high customer demand and limited product availability. It leads to missed sales opportunities, customer trust in shops, and revenue loss. Mostly this shop faces issues when the urea shortage occurs. This shortage due to farmers finds better-than-expected start to the winter cropping season can lead farmers to purchase urea well in advance because urea is commonly used as fertilizer for all types of crops.

5 Problem Solving Approach

IFFCO BAZAR is facing stock outs during the peak seasons such as pre-sowing period (just before the start of each cropping season) and post-harvest period (after crop harvesting farmers focus on soil replenishment and preparing the land for next season). To solve this problem I will collect data from the owner related to past sales data. The owner is willing to give the 3 months data. I will collect 3 months data for the analysis. Which includes attributes like Fertilizer name, Batch number, Quantity of sale, Price and Closing Stock in packets. I think this data will help to solve the problem.

- ❖ After collecting the data from the owner, I will utilize the Excel tool for preprocessing and analysis. Utilize the row/column-wise operations for cleaning the data. By using Pivot Tables I can summarize the collected 3 months sales data based on the Product type or specific criteria and Filter the data. By using Pivot Table summarized data I can easily generate Line Chart and other charts for visualizing the sales trends. Basic Excel functions such as SUM, COUNT, COUNTIF, VLOOKUP, AVERAGE, SUMIF, etc used for data manipulation.
- ❖ For Visualizing the data, I will employ Tools like histograms and Line Charts to represent sales trends and inventory performance. From this we can understand when the sales are high and when they become low. That means we can see demand fluctuations based on Seasonal patterns and market trends. Using the sales Historical data for predicting the future demand, it may be helpful to improve the inventory management.
- ❖ ABC Analysis helpful to categorize fertilizers like fast-moving, slow-moving, high revenue fertilizers, Low Revenue fertilizers, (High-value fertilizers, Moderate-value fertilizers, Low-value fertilizers). For doing the Revenue analysis use the Line Graphs and Pie Charts from these we can visualize the Revenue Growth patterns, Revenue distribution among different segments of fertilizers.
- ❖ I will perform Inventory Turnover Analysis on the data. Inventory Turnover ratio tells the number of times IFFCO BAZAR sells and replaces its stock of goods during a particular season. For this I need to calculate the Cost of fertilizers Sold and Average Inventory for a particular season. High Inventory Turnover generally means that fertilizers are sold faster and low Turnover rate indicates weak sales and excess Inventories.
- ❖ I will perform Pareto Analysis on the sales data and revenue data. It helps to find which type of fertilizers are essential for making high revenue and which fertilizers are selling high. It helps to keep track of sufficient inventory in the godowns.
- ❖ Most of the customers of this shop are uneducated farmers, so I will give suggestions to the shop owner on how to explain the newly released products. The owner should provide guidance on how to use the product properly, including any precautions that should be taken, information on its environmental friendliness, and how it works. The owner should interact with the farmers, explaining in simple language. After his discussion if one farmer purchases the product finds it beneficial, because others in that area also follow the same farmer. This approach can help to increase both customers and sales.

6 Expected Timeline

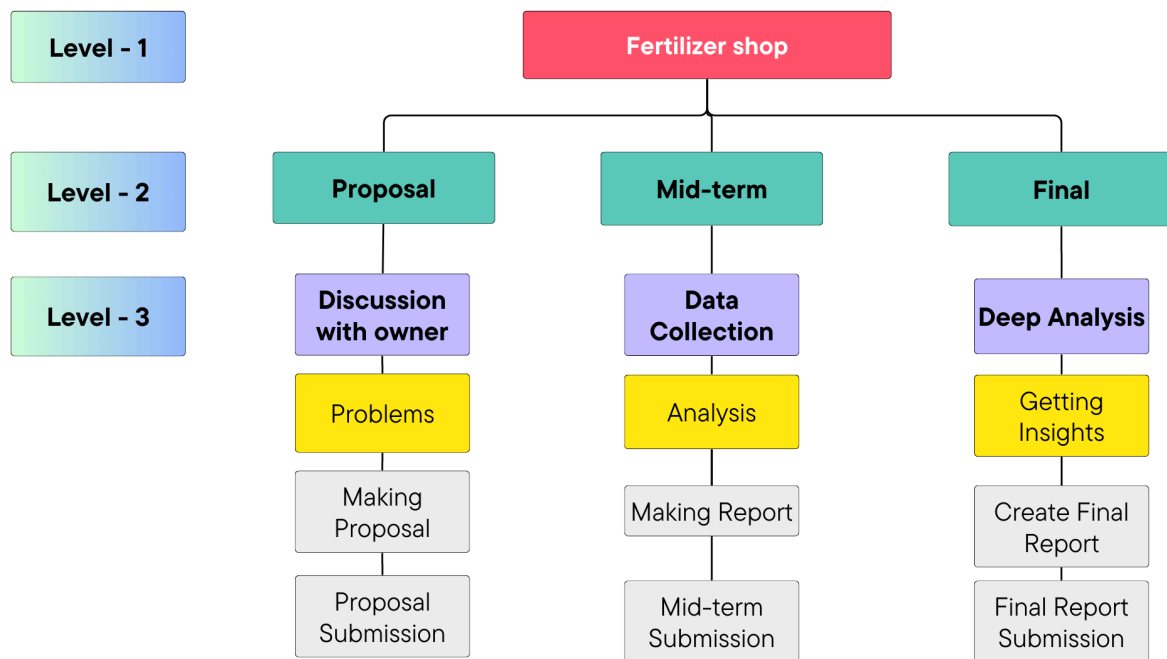


Figure 1: Work Breakdown Structure for Project

Gantt chart

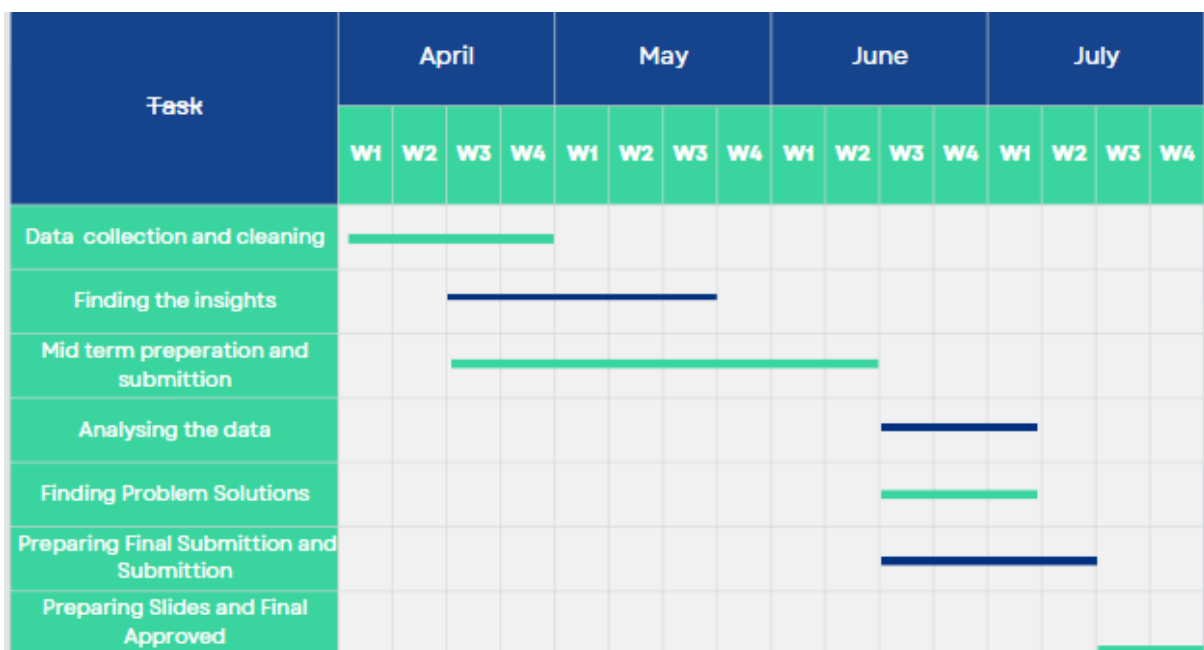


Figure 2: Expected Timeline for completion of the Project

7 Expected Outcome

- Better Inventory planning and understanding of which products are more sold.
- Increase Customer satisfaction: Fewer stockouts mean customers find products available when they need. In this way customer utility will increase.
- Increase the number of customers for this shop. By providing the right fertilizers in time.
- Reduction in Lost Sales: we can reduce the lost sales by proper inventory tracking.
- Owner can supply needed fertilizer to farmers promptly.
- Better understanding of the sales patterns. Identifying peak and low sales periods.
- Improved Inventory, knowing when to order specific fertilizers.
- Enhance the Brand reputation (IFFCO Products) through correct inventory management.
- Improved inventory planning, understanding which products sell more and which products are used by the most of the farmers.
- Understanding the Seasonal sales patterns, how the sales are during the Kharif and Rabhi season. Try to make use of the farmer's new eco-friendly products produced by the IFFCO.
- Estimate of Revenue Generation during the specific periods. Estimate the quantity of products sold.
- Innovate new ideas for customer interaction and engagement. Encourage farmers to use environmentally friendly fertilizers.
- Potential increase in Revenue and Profitability. Try to Improve Overall business Performance and reputation through a Data-Driven process.