

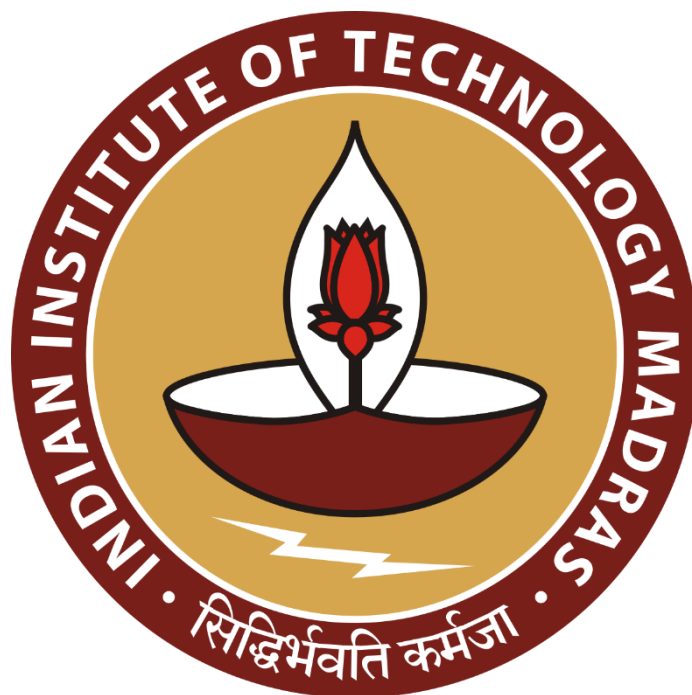
“Empowering Business Growth through Data-Driven Insights”

A Proposal report for the BDM capstone Project

Submitted by

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Declaration Statement

I am working on a Project titled “Empowering Business Growth through Data-Driven Insights”. I extend my appreciation to Pradeep Maan Trading Company, 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.

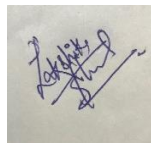
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

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:



Name: LAKSHIKA SHEORAN

Date: 26-06-2024

1 Executive Summary

The project focuses on a middle-sized business located at Loharu, Haryana. The business is B2C. Pradeep Maan Trading Company, founded in March 2023 with 1-2 employees, focuses on selling a variety of seeds, fertilizers and urea crucial for farmers in crop production. The company has shown steady profit growth, signaling a strong beginning in the business.

The major business issues that the organization is facing are related to a very nominal profit due to following reasons:

- Profit not as per expectations: It is caused due to expiry date of product, product damage, or can be some other reason which I further analyzed in mid-term and final report by doing analysis on data.
- Inventory issues: As I talked to the owner, I found that they unable to perform stock reorder as per demand. Sometimes, demand arise but stock out of order which cause loss or sometimes cause over inventory which leads to expiration issues, damages products. Either under inventory or over inventory both affects the problem in terms of overall profit.

The issues will be addressed by analyzing the data via different analytical approaches to obtain a fruitful outcome.

The expected outcome helps the organization reduce the money blockage in terms of inventory, which helps increase the profitability of the organization.

I can create pie charts and stacked histograms to extract valuable insights. Additionally, applying financial metrics such as gross profit, net profit, profit margins, and average inventory will further aid in problem-solving.

I have chosen to collect data for 8-10 specific products to ensure a conclusive data collection and analysis process. The variables collected include

- Cost Price
- Selling Price
- Quantity of products sold
- Quantity Bought from company

Using these, will compute key financial metrics such as

- Revenue, Expenditure, Gross Profit, Net Profit, Profit Margin, Average Inventory, Wastage due to damage, as well as ratios like Gross Profit Ratio and Net Profit Ratio.
- After making different type of charts will analyze the data and it will also help in solving the business problem which will help the business to grow.

Organization Background

Name of Owner: Mr. Pardeep Maan

Name of Company: Pradeep Maan Trading Company

Address: Khera Village, Loharu, Haryana

- Pradeep Maan Trading Company, founded in March 2023 with 1-2 employees, focuses on selling a variety of seeds and urea crucial for farmers in crop production. The company has shown steady profit growth, signaling a strong beginning.
- Their vision is centered on expanding their business operations and attracting a larger customer base. This growth aspiration underscores their commitment to serving agricultural needs effectively. As they continue to thrive, maintaining competitive pricing and high product quality will be key priorities.
- By adhering to these principles and adapting to market demands, Pradeep Maan Trading Company aims to solidify its position in the agricultural sector and contribute positively to the farming community's requirements.



(Figure 1)



(Figure 2)

2 Problem Statement

From my interaction with the owner, I learned that the business is doing well overall, but there are some areas where it is experiencing losses.

- Profit not as per expectations: It is caused due to expiry date of product, product damage, or can be some other reason which I further analyzed in mid-term and final report by doing analysis on data.
- Inventory issues: As I talked to the owner, I found that they unable to perform stock reorder as per demand. Sometimes, demand arise but stock out of order which cause loss or sometimes cause over inventory which leads to expiration issues, damages products. Either under inventory or over inventory both affects the problem in terms of overall profit.

3 Background of the Problem

- I discussed with the owner of the Pradeep Maan Trading Company and had discussed various aspects which is causing the problem.
- There are two main reasons for profit loss: first, products becoming obsolete with seasonal changes, and second, overstocking items with low demand due to high prices or lack of brand recognition, leading to lower-than-expected profits.
- If there is a sudden change in climate, such as heavy rainfall during the rainy season, farmers may no longer need fertilizers, leading to reduced demand and sales for the company.
- It can be of online purchasing. Since there are many facilities on online, we can buy or sell anything and can order the product from anywhere. Farmers tend to order the product from online if there are discounts on online platform.

I have come to the conclusion that the best way to make use of the information, skills, and the tools that were taught in the BDM course is to identify appropriate workable solutions thorough analysis of the business.

4 Problem Solving Approach

1. About the Methods used with Justification

Firstly, collected the time series data which would be using for making trend lines by using pivot tables, I can create pie charts and stacked histograms to extract insights. Additionally, applying financial metrics like gross profit, net profit, profit margins, and average inventory will aid in problem-solving of business.

2. About the Intended data collection with Justification

I have chosen to collect data for 8-10 specific products to ensure a conclusive data collection and analysis process. The variables collected includes

- Cost Price

- Selling Price
- Quantity Sold
- Quantity Bought
- Opening Stock

Using these, I will compute key financial metrics such as

- Revenue
- Expenditure
- Gross Profit
- Net Profit
- Profit Margin
- Average Inventory, Wastage due to damage, as well as ratios like Gross Profit Ratio and Net Profit Ratio.

3. About the analysis tools with Justification

The analysis tools chosen are well-suited for handling time series data in Excel:

1. Pivot Tables: Ideal for summarizing, analyzing, and interpreting large datasets. They facilitate filtering and computing row/column-wise data efficiently, enabling quick insights into trends and patterns of the data.

2. Excel Functions: Functions like VLOOKUP, COUNTIF, COUNTIFS, and Boolean operators are essential for data manipulation, filtering, and performing calculations based on specific criteria. They enhance the accuracy and efficiency of data processing tasks.

3. Data Visualization Tools:

- Pie charts: Useful for showing proportions or percentages of a whole, such as revenue distribution among products.
- Stacked Histograms: Suitable for comparing distributions of multiple variables over time, revealing trends and patterns.
- Histograms: Effective for visualizing frequency distributions of numerical data, aiding in understanding data spread and outliers.
- Scatter plots: Helpful in examining relationships between variables, such as cost price versus selling price, to identify correlations.
- Heat maps: Useful for displaying data density and variations across different categories or time periods, providing a visual summary of trends and anomalies.

Each tool is chosen based on its ability to handle specific aspects of data analysis and visualization efficiently in Excel, ensuring comprehensive exploration and interpretation of the time series data collected.

5 Expected Timeline

5.1 Work Breakdown Structure:

TASKS	STARTING DATE	ENDING DATE	DURATION
Data collection	23-06-2024	23-06-2024	0
Proposal	23-06-2024	30-06-2024	7
Proposal finalize	30-06-2024	02-07-2024	2
Data cleaning	02-07-2024	06-07-2024	4
Mid term	06-07-2024	12-07-2024	6
Mid term finalise	12-07-2024	15-07-2024	3
Final report	15-07-2024	24-07-2024	9
Final report finalise	24-07-2024	27-07-2024	3

5.2 Gantt chart

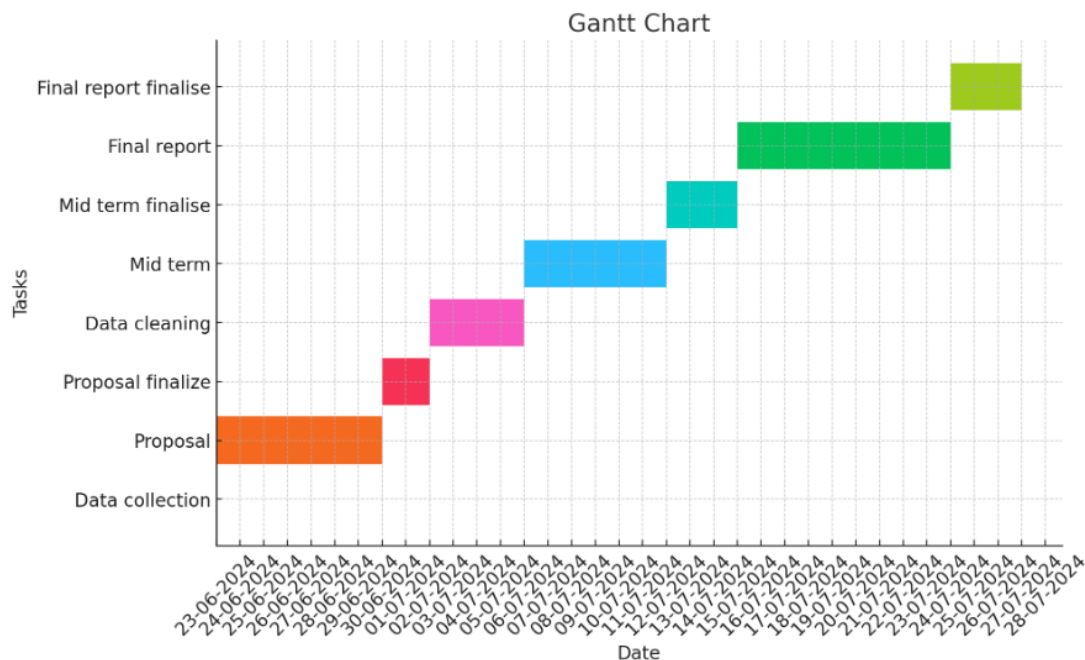


Figure 3 Expected timeline for completion of project.

6 Expected Outcome

After analyzing the business data, I will explain the importance of my approach to help them leverage it for increased overall profits.

- Addressing the identified issues will foster business growth and help achieve their vision of expanding into different parts of Haryana. By implementing data-driven solutions, the business can optimize its operations and resolve inventory management challenges, ensuring better stock control and reduced costs.
- Furthermore, this approach will support the strategic planning for new branch openings, enhancing market reach and customer satisfaction. Regular training and workshops will be conducted to ensure all stakeholders understand and effectively use the new problem-solving framework.
- Continuous monitoring and refining of these strategies will ensure long-term success, allowing the business to adapt to changing market conditions and maintain a competitive edge. Overall, this comprehensive plan will drive business growth, efficiency, and profitability, leading to successful expansion in Haryana.