

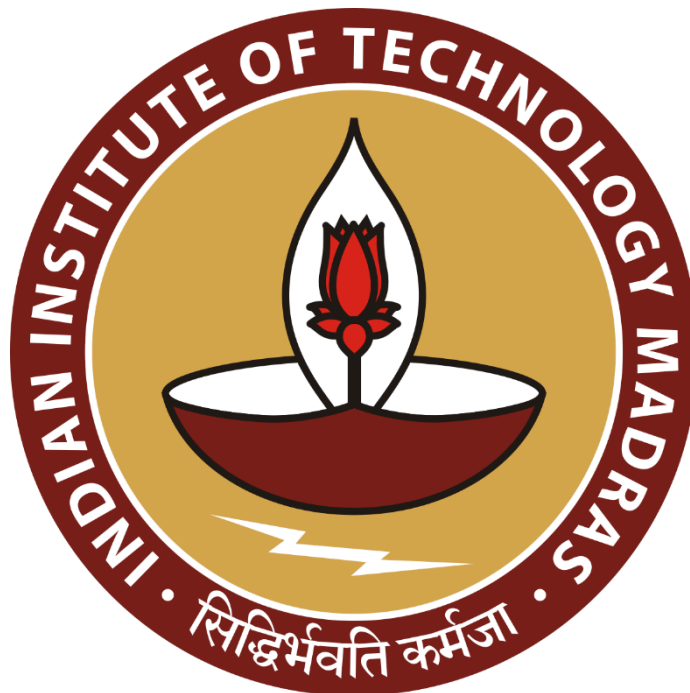
**Maximising Profitability: A Multi-headed approach for enabling Multi-Channel sales
and Inventory Optimisation for T.R Departmental**

A Proposal report for the BDM capstone Project

Submitted by

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Declaration Statement

I am working on a Project titled “*Maximizing Profitability: A Multi-Headed approach for enabling Multi-Channel sales and Inventory Optimisation for T.R Departmental*”. I extend my appreciation to **T.R Departmental** 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 analysed to assure its reliability.

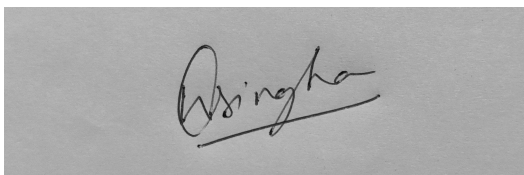
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

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 fulfilment 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)**

A digital signature in black ink, appearing to read 'Wsingha', is displayed on a light gray background.

Name: Watham Sabyasachi

Date: 05/04/2024

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1. Executive Summary and Title

I am working on a project titled as *“Maximizing Profitability: A Multi-headed approach for enabling multi-channel sales and inventory optimisation for T.R Departmental”* that focuses on a mid size convenience store located in Hengrabari, Guwahati. It is a B2C business that deals in items of everyday use, such as essential goods, pantry staples, etc.

The business currently experiences an issue of profit maximisation owing to two main factors: increased competition from online markets the likes of Reliance supermart and JioMart, and operation costs consuming a large portion of the profits, among others.

To tackle this, I will be employing various methods that includes, but not limited to:

1. Identification of profit leaks
2. Analysis of customer behaviour
3. Inventory optimization and management

After the successful analysis of the data, expected outcomes can be a data-driven approach that may reveal cost-cutting opportunities, improved inventory management, increased profitability, and understanding the local vs online benefits.

2. Organisation Background

The business that I am collaborating with for my project is T.R Departmental. Despite its name, it is a local grocery cum convenience store that deals in everyday essentials and commodities. The store was **established by Mr. Ohab Ali in the year 1995** in a lesser known area in Guwahati, Assam and on a shoestring budget of Rs 500. Until then, the store's location, situated deep within the market area, limited its visibility to potential customers, resulting in lower foot traffic and sales. It was then relocated to Hengerabari, Guwahati in 2020 prior to the COVID-19 pandemic for good measure. The store operates with a staff of one as the current workload of checkout and bagging can be handled effectively by a one-man-team, including managing of daily

arrivals of everyday stocks. It experiences a varying amount of customer traffic, with some days seeing a higher volume of customers throughout.

3. Problem Statement (Listed as objectives)

During the discussion of the store's background and current challenges, the following came to light as major issues that required attention:

- a. Experiencing marginal profitability:
Fixed costs and operational costs take up a large portion of the profits made, and this in turn puts the store at a difficult position with context to their profit making capacity
- b. Online competition significantly eating away chunks of store profits:
Customers have begun to prefer going online to order goods and groceries in bulk.

4. Background of the problem

Ever since the relocation of the store, T.R. Departmental has enjoyed positive profitability. Sales and profits even increased during the COVID-19 pandemic due to the store's optimal positioning near a residential apartment building and optimal proximity to surrounding residential areas. This advantageous location gave rise to customer queues forming even before opening hours.

However, the post-pandemic period has witnessed a gradual decline and eventual stagnation in the store's profit generation. The cause of which being a decrease in customer foot traffic, with customers gradually shifting towards alternative shopping locations.

The store's operational expenses, including electricity bills, rent, and staff salaries, are covered by the profits generated.

Additionally, an unexpected change in consumer preferences towards online shopping and home delivery has resulted in a decline in physical store visits. While the owner has attempted to implement similar delivery services, they acknowledge the difficulty of competing with the big players.

5. Problem solving approach

The data to be used primarily is sales data and if available, data of daily stocks replenishment too.

a. Data Acquisition and Cleaning:

Extract relevant sales data from the store's software to understand historical sales trends and customer behaviour patterns. Load the extracted data into Google Sheets and perform necessary cleaning tasks to ensure data accuracy and consistency.

b. Sales Analysis:

Conduct a comprehensive analysis of the cleaned data to identify high-performing and low-performing product categories and individual items. Making full utilisation of pivot tables within Google Sheets to categorise and summarise sales data for conducting further analysis.

c. Statistical Methods:

Methods such as Time-series analysis and customer segmentation to forecast future trends and group customers based on their purchase habits.

d. Inventory Optimization:

Techniques like ABC analysis and EOQ model to help with dividing products based on demand and to develop optimum order quantities.

e. Explore Online Delivery Options:

Research and evaluate various online delivery platforms and services suitable for the convenience store's offerings and target clientele. Conduct a cost-benefit analysis to weigh the potential returns from online sales against the additional operational costs associated with online delivery.

6. Expected Timeline

TASK	START DATE	END DATE
Data Collection	29/03/2024	31/03/2024
Data Cleaning	03/04/2024	04/04/2024
Finding Insights	07/04/2024	02/06/2024
Preparing Mid-Term submission	04/06/2024	08/06/2024
Finding Insights while waiting for approval	09/06/2024	14/06/2024
Mid-term approved	15/06/2024	16/06/2024
Finding solutions - Final Stretch	17/06/2024	05/07/2024
Preparing final submission	06/07/2024	12/07/2024
Preparing slides	14/07/2024	19/07/2024
Final submission approved	20/07/2024	21/07/2024

Figure: Work Breakdown Structure

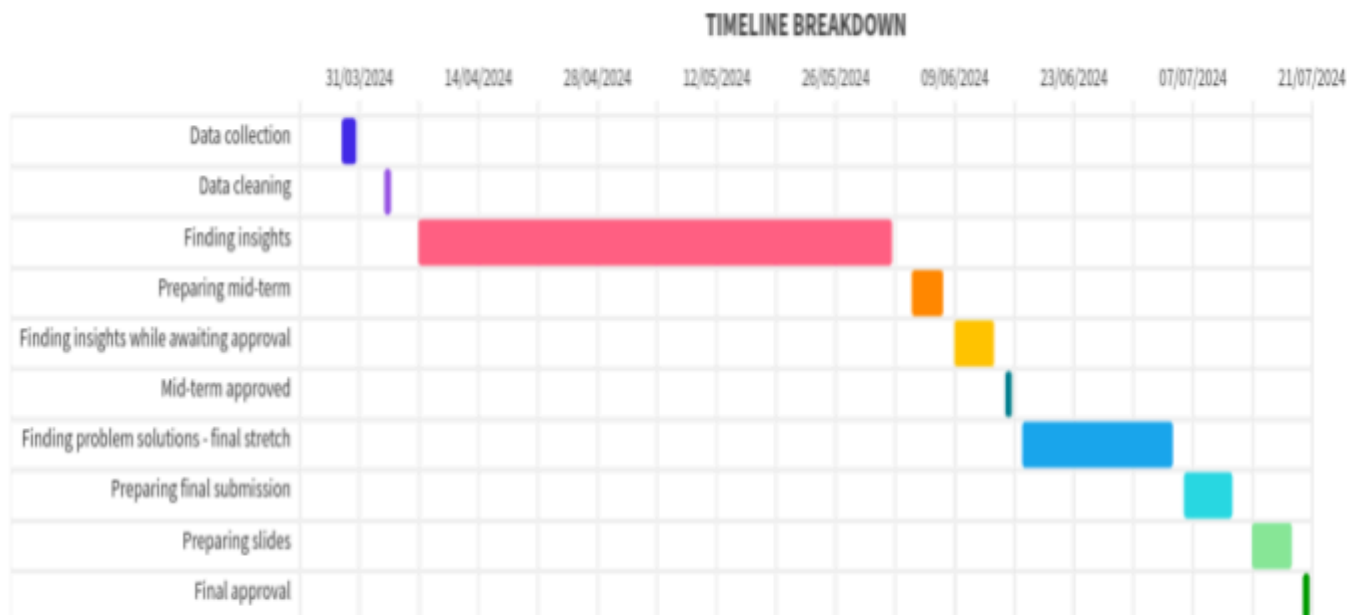


Figure: Gantt Chart corresponding to timeline

7. Expected Outcomes

- a. Increased Profitability due to optimised management of inventory, and data-driven strategies will increase profit margins.
- b. Customer satisfaction due to understanding customer preferences and thorough analysis.
- c. Optimised inventory thanks to techniques like ABC analysis and EOQ, will enable cost cutting on lesser selling products and facilitate efficient stocking of demandable items