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# BUSINESS DATA MANAGEMENT CAPSTONE PROJECT

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## Optimizing Business Model of a Local Grocery Shop

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## **Declaration Statement**

I am working on a Project Title “**Optimizing Business Model of a Local Grocery Shop**”. I extend my appreciation to **The Need Shop, Faridabad**, 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 through primary sources and carefully analysed to assure its reliability.

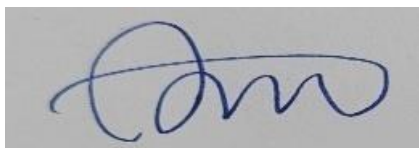
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the information 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 agree that all the recommendations are business-specific and limited to this project exclusively, and cannot be utilized for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this.

**Signature of Candidate:**



**Name: OM ARYAN**

**Date: 02-11-2024**

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## **Executive Summary**

The Need Shop is a small, locally run business. Based in Faridabad, Haryana, it specializes in selling daily use products such as food, beverages, household items, etc. The store serves the residents with a wide range of essential items. and mainly conducts business in a B2C format (business - to consumers) Grocery stores face a number of key challenges that impede growth and profitability.

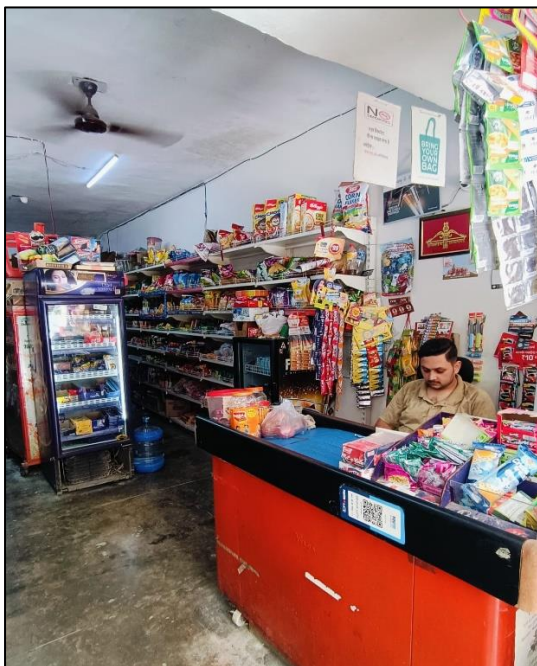
A key issue is increasing competition from online delivery apps and large supermarkets. This causes the number of customers to decrease and has a negative effect on sales. Stores also struggle with high prices from distributors, narrowing profit margins in terms of price. In addition to being difficult to compete It also addresses human resource challenges such as managing employees effectively. Coupled with high maintenance costs and increased utility costs, etc., these issues together put pressure on the profitability and operational efficiency of stores.

This project will explore a data-driven approach to demand forecasting. Optimize inventory to reduce overstock. Analysing sales trends to improve pricing strategies along with insights into customer behaviour will guide targeted marketing efforts. And tracking spending will identify areas to reduce costs.

This BDM capstone project allowed me to apply data-driven solutions to real-world business challenges. Its focus is on improving the operations of small grocery stores.

## **Organization Background**

The Need Shop was established in 2008 and is owned by Mr. Sunil Kumar as a small grocery store in Sector 21A, Faridabad, Haryana. It operates in the FMCG sector. It is located in a residential area and the main HUDA Market of the sector where people have easy access and can easily walk in and buy daily necessities and household goods.



## **Problem Statement**

- **Convergence of online delivery platforms and large supermarkets:** Increased convergence has led to a decrease in customer numbers and product sales indirectly.
- **Increased supplier costs:** Increased supplier product costs squeeze profit margins. and limit competitive prices
- **Human resources and operations challenges:** Ineffective personnel management High maintenance costs and increased utility costs causing a burden on operations which negatively affects the ability to make a profit.

## **Background of the problem**

During discussions with the shop owner, I explored in more detail some of the challenges that the owner of a grocery shop experiences in the course of the business. The owner stressed how internal and external factors alike have affected sales and profitability to a great extent.

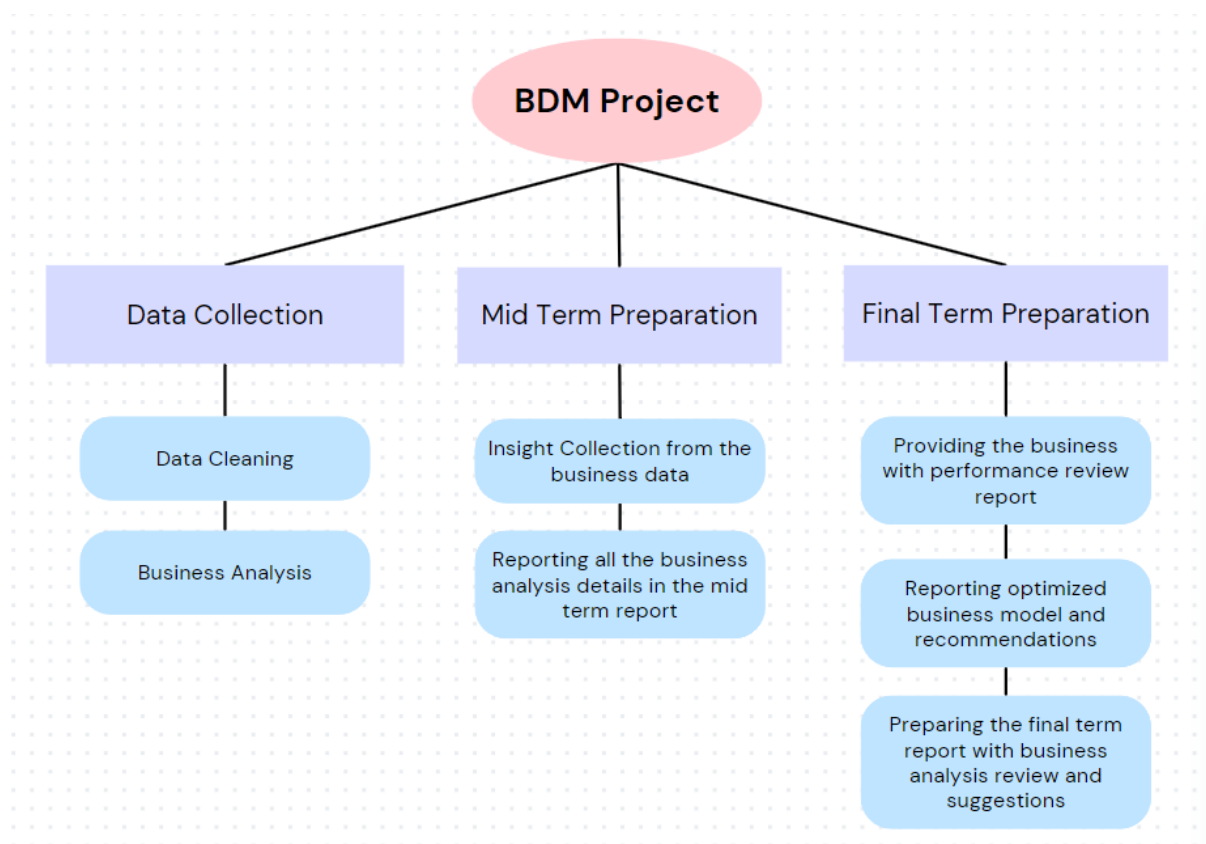
- The rise of delivery apps and large chain stores, competition is fierce leading the decline of physical shoppers, and their sales as well. Shopping for groceries online seems to be the ultimate solution for these customers since they enjoy more options at better prices for this service. There is a great threat posed by the changing shopping patterns to the small and local grocery shops.
- The store suffers from high prices charged by the distributors for the goods, which limits the potential profit that can be made and the ability to set competitive prices. Consequently, the customers might go in search for better prices in another store. There are also the internal problems such as staff turnover and poor management of the workforce which leads to wastage of resources. Other costs such as high charges incurred for upkeep and high-power costs add strain to the finances and restrict the shop from allocating money for any promotion or customer involvement activities.

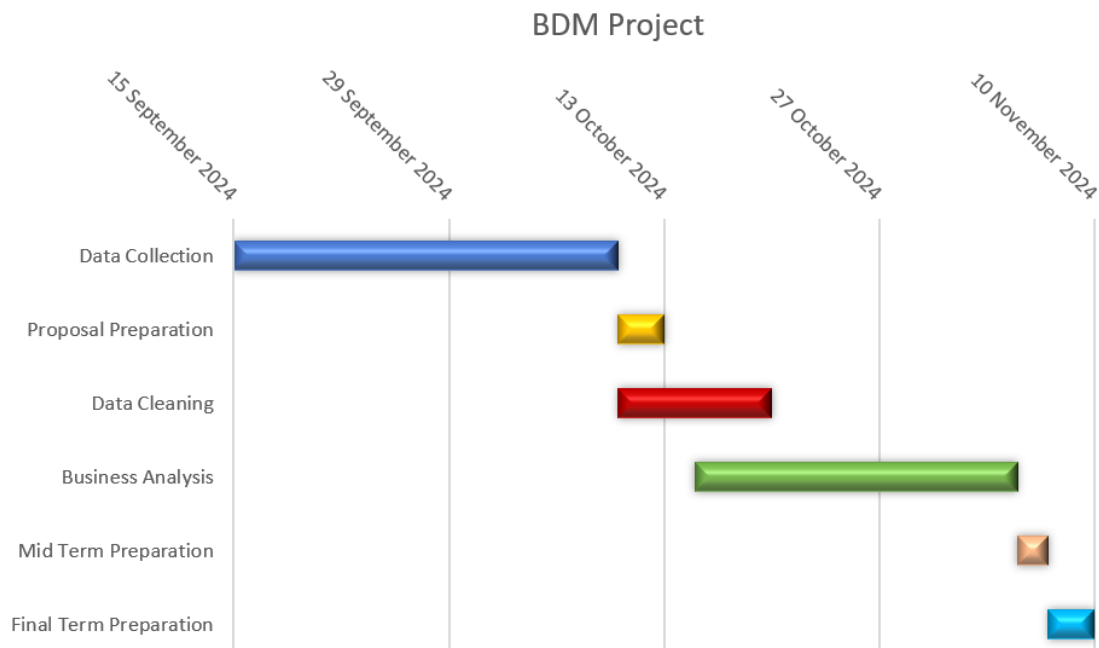
## **Problem Solving Approach**

- **Intended Data:** In order to understand completely about the challenges faced by the grocery shop, I undertook multiple conversations with the owner of the shop and, in the course of those dialogues, managed to collect multiple forms of information. I gathered some specific information for analysis, such as the cost price and selling price of the different products. Also, I obtained data concerning how much of each item was sold and information on budgeted quantities of sales which I used to evaluate the stock performance. All the data needs to be properly organized into a .csv file for further analysis to take place.
- **Methods Used:** After several meets with the proprietor of the shop, it was easy to explain the requiring solution from the business and its problems. The owner of the shop gave unorganized data which must be structured for further analysis. Some of the methods to overcome the business problems are:
  - Perform market pricing research in order to modify the prices of the products while sustaining a fair profit level on the sales of the goods and services.

- Engage with distributors to negotiate better pricing or explore alternative suppliers to reduce costs.
  - Establish an e-ordering platform or deploy delivery apps to support the shop in expanding its customer horizons and delivering more of its services.
  - Check out fixed and variable operating costs to see whether there are cost-effective options such as energy savings or improved service provision agreements.
  - Assist employees through orientation programs about the quality service, which might help in improving their efficiency thereby reducing the turnover.
- Analysis Tools: A mixture of Python Libraries and Excel operations could be used. In Pandas Python, data manipulation purpose can be served by using data frames whereas for some numerical methods NumPy may be used and Matplotlib/Seaborn may be employed for plotting graphs. In Excel, Pivot Table technique may be applied for data summarization, and then placing a formula to determine resultant profit between costs and pricing.

## Expected Timeline





## **Expected Outcome**

- **Competitive Positioning:** Enhanced strategies to counter competition from online delivery apps and supermarkets, leading to increased customer retention.
- **Reduced Operational Costs:** Improved operations and better negotiation with suppliers leading to reduced cost of the products, overall reduced expenses, and therefore improved profit margins.
- **Improved Inventory Efficiency:** When the inventories are kept well managed, they usually decline less stock which results in the problem of blocked capital, and thus eases cash flow.
- **Strengthened Workforce Management:** Improvements through training and operational changes will enhance staff efficiency, resulting into a more efficient labour-force operation, and reducing maintenance costs.