

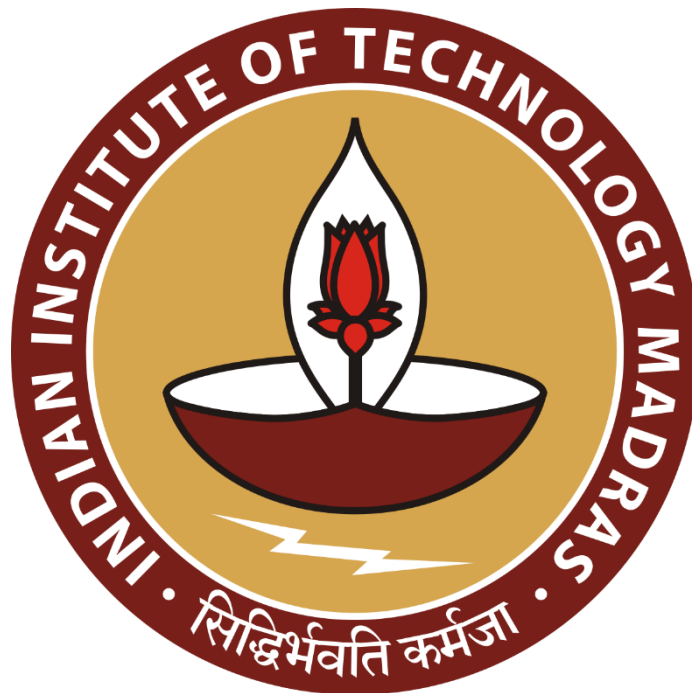
# **Improving Pharmacy Performance through Data Analysis**

## **A Proposal report for the BDM capstone Project**

Submitted by

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### **Declaration Statement**

I am working on a Project titled “Improving Pharmacy Performance through Data Analysis”. I extend my appreciation to **Apollo Pharmacy**, 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.

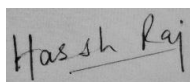
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

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 black ink that reads "Harsh Raj".

Name: Harsh Raj

Date: 05/07/2024

## **1 Improving Performance at Apollo Pharmacy**

The project focuses on Apollo Pharmacy located at Panchmukhi, Patna, Bihar. The business is B2C and deals in the segment of pharmaceuticals.

The major business issue that the shop is facing is ineffective discount strategies and inventory management issues which lead to reduced profitability and customer dissatisfaction. According to the billing staff of this store, discounts are a major competitive factor in this segment.

The issue will be addressed by analysing sales data, inventory records, discounts being given and some sort of customer behaviour via different analytical approaches to identify optimal discount strategies and inventory levels. By understanding the relationship between discounts, sales, and inventory turnover, Apollo Pharmacy can make data-driven decisions to enhance its overall performance. The expected outcome is a set of recommendations for Apollo Pharmacy to be implemented to increase sales, improve inventory turnover, and enhance customer satisfaction.

## **2 Organization Background**

Apollo Pharmacy is a subsidiary of Apollo Hospitals Enterprise Limited, a leading healthcare provider in India. It is one of the largest retail pharmacy chains in India, with a network of over 3,000 stores across the country. This branch of Apollo Pharmacy located at Panchmukhi, Patna is operational since around 5 years. It offers a wide range of products, including prescription medicines, over-the-counter drugs, health supplements, personal care items, and medical equipment. The company is committed to providing high-quality healthcare products and services to its customers. Since, it is located at one of the main markets of the city, there are also other options in the pharmacy/medical store category for people to go to in the same area, which increases competition.

### **3 Problem Statement**

- 3.1 Objective 1: To assess the competitive landscape of discounts offered by similar pharmacies(online/offline) and determine optimal discount strategies to attract and retain customer while maintaining profitability.
- 3.2 Objective 2: To determine optimal inventory levels for different product categories at Apollo Pharmacy.

### **4 Background of the Problem**

Apollo Pharmacy operates in a highly competitive market, where pricing and inventory management play a crucial role in attracting and retaining customers. Since, there are such other pharmaceutical stores in the area which are offering more discounts, ineffective discount strategies can lead to lost revenue and missed opportunities to increase sales. Poor inventory management is an internal problem that can result in stockouts, overstocking, and increased holding costs, ultimately impacting profitability. Stockouts may lead to customer dissatisfaction which may give them opportunity to look at other stores and this will make lose loyal customers. While, more discounts given by other stores becomes an external problem which also leads to lost customers. Consumers will prefer the stores which gives more discounts, even nowadays some online pharmaceutical platforms are skyrocketing by giving more and more discounts without facing the problem of physical stores which allow them give more discount, hence, Apollo Pharmacy faces a decline in customers because of more discounts offered at other offline and online stores. By addressing these challenges, Apollo Pharmacy can improve its operational efficiency, enhance customer satisfaction, and gain a competitive advantage in the market.

### **5 Problem Solving Approach**

To achieve the project objectives and address the challenges faced by Apollo Pharmacy, a systematic and data-driven approach will be taken:

### 1. **Competitive Analysis:**

**Data Collection:** Collecting data on discounts offered from other competing pharmacy stores including online ones. This will involve visiting those stores and reviewing their discounts, and also conducting online research.

**Data Analysis:** Comparing the types of discounts like percentage-based discounts, fixed amount discount or buy-one-get-one. Estimate the impact of these discounts on customer footfall and sales at competitor stores.

### 2. **Sales and Inventory Analysis:**

**Collecting Data:** Gathering historical sales data, inventory history, and pricing information from Apollo Pharmacy for a relevant period. This data will include details on products sold, their quantities, prices, discounts and inventory levels.

**Preparation and Cleaning of Data:** Assuring accuracy of data and its consistency by identifying and managing missing values and inconsistencies. Accumulating data to appropriate levels (daily, weekly, or monthly) for analysis.

#### **Statistical Analysis:**

This will involve analysing the relationship between discounts offered and sales by Apollo Pharmacy.

Identifying those product categories or consumer segments which are most receptive to different types of discounts.

Analysing inventory for different product categories and identifying slow-moving i.e. overstocked items.

Using forecasting techniques to predict demand for various products based on historical sales data and seasonality.

### 3. **Optimization and Recommendation:**

**Optimizing Discounts:** Based on the competitive analysis and Apollo Pharmacy's sales data, will develop optimized discount strategies. This will involve recommendation specific discount types, discount amounts, and their timing for different product categories.

**Optimizing Inventory:** Using demand forecasts and inventory analysis to find ideal inventory levels for each product category. This will help in minimizing stockouts and over-stock of inventory and improving customer satisfaction.

#### 4. Utilizing Tools:

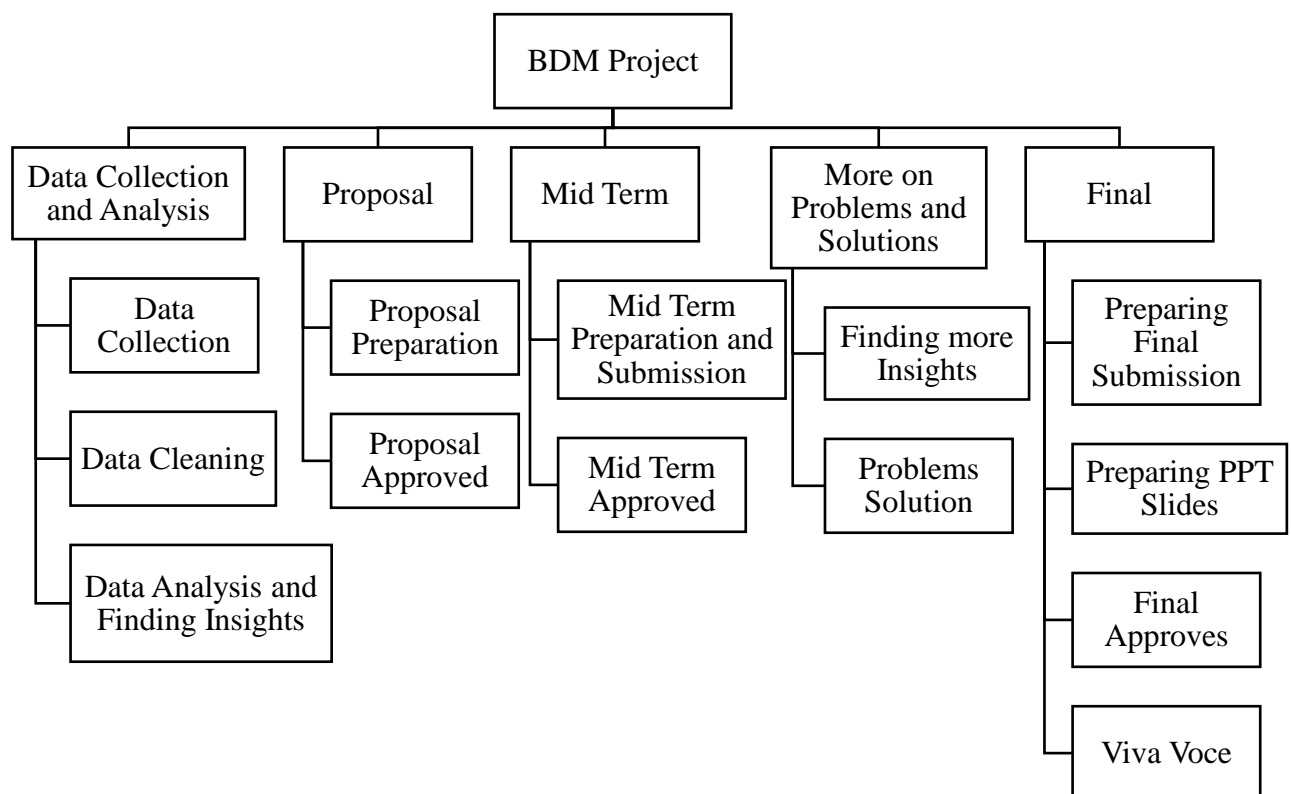
**Analysing Data:** Using Excel or Python for data cleaning, statistical analysis, visualizing, and forecasting.

**Visualization:** Creating informative graphs and charts for findings and recommendations effectively.

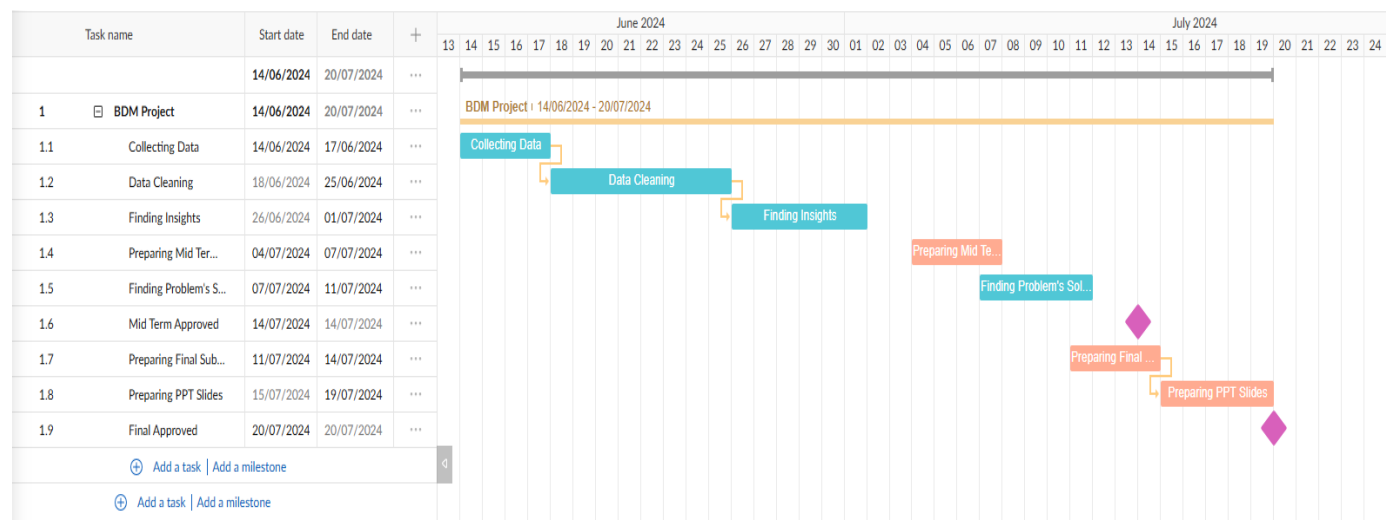
By following this approach, the project directs to provide Apollo Pharmacy with data-driven insights and recommendations to work on to optimize its pricing and inventory methods, conclusively enhancing competitiveness and profitability in the market.

## 6 Expected Timeline

### 6.1 Work Breakdown Structure:



## 6.2 Gantt chart:



## 7 Expected Outcome

It is expected from the project to deliver a broad analysis and useful recommendations to Apollo Pharmacy and focusing on optimized discounted pricing and inventory methods. The outcomes include:

In detail understanding of the discount strategies used by competing pharmacies in the local and online market will help Apollo Pharmacy emphasizing its position comparative to its competitors and identifying essentialities for improvement.

Data-driven recommendations to implement effective discount strategies considering the impact of discounts on sales, profitability, and customer behaviour, while maintaining a balance between attracting customers and maintaining financial feasibility.

Identification of optimal inventory levels for different product categories will help in minimizing stockouts and overstocks, which will help in cost reductions and improved product availability resulting in higher customer satisfaction. Also, inventory management will contribute to organized operations, reduced holding costs.

Overall, this project will help Apollo Pharmacy with the knowledge and methods to enhance its competitiveness, profitability, and customer satisfaction in the retail pharmacy ground.