

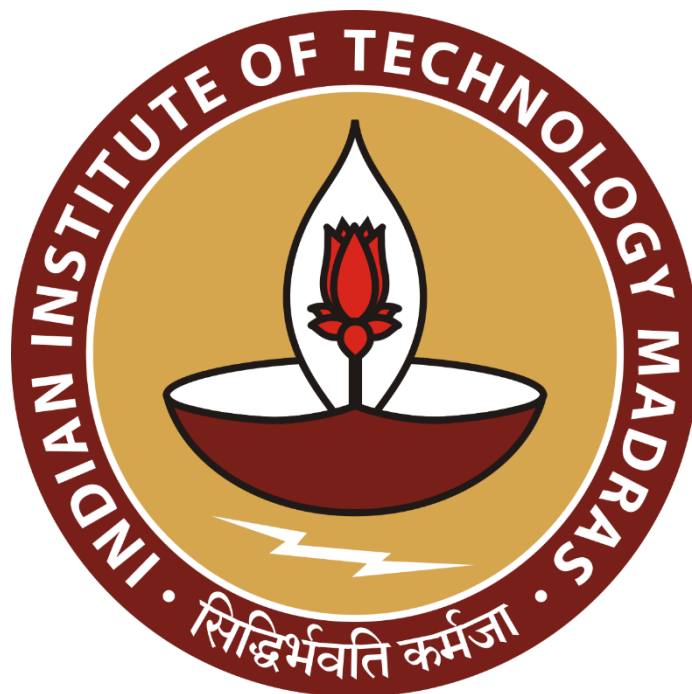
# **Data-Driven Revamp for 'Friends': Enhancing Inventory Management and Customer Engagement**

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

Submitted by

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### **Declaration Statement**

I am working on a Project titled **“Data-Driven Revamp for ‘Friends’: Enhancing Inventory Management and Customer Engagement”**. I extend my appreciation to Mr. Anurag Agarwal, for providing the necessary resources that enabled me to conduct my project.

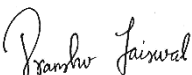
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

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: Pranshu Jaiswal

Date: 08/12/2023

# 1 Executive Summary and Title

**“Friends”** is a Business-2-Business wholesale shop in Kolkata mainly involved in selling stationary items. It was founded almost two decades ago by Mr. Anurag Agarwal and his wife Mrs. Manisha Agarwal with a vision of creating a business that serves as a reliable and indispensable partner for offices, schools, and businesses. They have been quite successfully at their job, until the pandemic arrived and resulted in the closure of offices and adoption of work from home culture which was a major blow to the business. A project has been proposed to the founding couple **“Data-Driven Revamp for ‘Friends’: Enhancing Inventory Management and Customer Engagement.”**

"Friends" faces several challenges, including inventory management issues, resulting in scarcity and oversupply. The lack of data-driven pricing strategies hinders optimal profitability and market stability. The manual collection of data through registers shuts the door on any data driven decisions. Not leveraging their loyal customers is also another issue which they have failed to address.

The problem-solving approach involves Pareto Analysis, Trend Analysis, Customer Segmentation, and Inventory Management. Data collection from sales transactions, inventory, and customer data is essential. Utilizing Excel tools, such as pivot tables and filters, will aid in effective analysis. The anticipated outcomes include enhanced profitability, streamlined inventory control, improved customer understanding, and better decision-making. Excel's versatility is chosen for its user-friendly interface, facilitating efficient data analysis and visualization.

# 2 Organization Background

Founded nearly two decades ago by Mr. Anurag Agarwal, **“Friends”** is a Business-2-Business wholesale shop located at 8 Camac Street Room Number 20, Kolkata, West Bengal, India. “Friends” is a family business spearheaded by Mr. Anurag Agarwal and his wife Mrs. Manisha Agarwal. They are deeply involved in day-to-day operations and oversee all aspects of the business. They are aided by a few workers who handle the delivery operations. These individuals and their support along with management of the Agarwals contribute to the smooth running of shop. **Friends** mainly caters the needs of offices and schools and specialize in offering a wide range of stationary along with other office and household accessories.

In the pre-pandemic days, their revenues used to go up to ₹ 20 lakhs per month. However, it all changed due to the pandemic which led to the closure of many offices and the paradigm shift of office work too remote work. This has led to a decline in their revenues to less than ₹ 15 lakhs per month and even now they have not managed to reach their earlier highs.



Fig 1.1 “Friends” shop in Camac Street, Kolkata, West Bengal

### 3 Problem Statement

After a multiple meetings and conversations with Mr. Anurag Agarwal, I am of the opinion that “Friends” is facing these problems in these respective fields:

1. *Inventory Management:* Lack of planning of inventory leads to shortage of regularly sold products and excess inventory of infrequently sold products, leading to excess inventory cost and on the other hand also leads to customers dissatisfaction.
2. *Price Optimization:* Their inability to incorporate data-driven strategies that consider market fluctuations, competitor pricing and customer preferences prevents them from achieving better profit margins and a more stable market position.
3. *Data Collection:* Their manual approach to data by writing down in a register notebook, prevents them from doing any kind of analysis and make data driven decision.

## 4 Background of the Problem

“Friends” has been struggling with several challenges. The **lack of data-driven pricing strategies** is a significant hurdle, causing less-than-optimal profit margins and a compromised market positioning. Simultaneously, **inefficient inventory management** techniques contribute to both stockouts and excess inventory, thereby impacting the overall efficiency of the supply chain. Furthermore, the underutilization of customer insights serves as a hindrance to targeted marketing initiatives and the enhancement of customer loyalty.

Similar to any other business, the COVID-19 pandemic severely impacted “Friends”, once boasted revenues of around ₹20 lakhs per month, now struggles below ₹15 lakhs. The closure of offices and schools, their primary customers, led to a negligible sale of their stationary products. Post-pandemic, many offices opted for permanent work-from-home, resulting in a significant loss of customers. Furthermore, the absence of competitions organized by offices and schools left many trophies unsold. These obsolete trophies are now occupying valuable space, leading to inventory issues. The pandemic has not only affected their present sales but also poses challenges for their future operations.

Moreover, “Friends” has been **underutilizing customer insights**, which hampers its ability to launch targeted marketing initiatives and enhance customer loyalty. Understanding their loyal customers and rewarding them for their preferences is crucial for any business to tailor its offerings and build strong customer relationships.

## 5 Problem Solving Approach

### 5.1 Problem-solving strategies:

- 5.1.1 *Pareto Analysis:* This analysis will help identify the products and sales channels that generate the most revenue. By focusing efforts and resources on these areas, the business can maximize profitability.
- 5.1.2 *Trend Analysis:* By examining sales data, I can identify patterns and seasonal trends in customer demand. This information will aid in making informed decisions about inventory levels and production planning.
- 5.1.3 *Customer Segmentation:* I propose to use data-driven methods to segment customers based on their preferences, buying behavior, and historical data. This will enable the Agarwals to launch targeted marketing initiatives and enhance customer loyalty with extra incentives to the regular customers.
- 5.1.4 *Inventory Management:* This will help reduce instances of stockouts and excess inventory, thereby improving the efficiency of the business’s supply chain.

### 5.2 Intended Data Collection:

- 5.2.1 *Sales Transactions:* This data is crucial for comprehending the revenue generated by various products.
- 5.2.2 *Inventory Data:* This data is essential for effective inventory management, determining the stock levels and excess inventory of unsold goods.
- 5.2.3 *Customer Data:* This data allows the business to provide special rewards to the old customers, thereby enhancing customer satisfaction and loyalty.

### 5.3 Tools to be used:

- 5.3.1 *Trend Analysis:* Using Excel's pivot table to analyze the sales and identify the underlying patterns and customer demands will help the Agarwals to make well informed decisions.
- 5.3.2 *Pareto Analysis:* Using Excel's functions to create a Pareto chart for visually identifying the best products revenue wise. This will help the Agarwals to advance ordering to prevent stockouts.
- 5.3.3 *Customer Segmentation:* Using Excel's filters to identify the customer behavior and find out their most loyal customers.
- 5.3.4 *Inventory Management:* Using Excel's formulas to efficiently manage inventory.

I decided to go through with Excel because of its versatility with easy-to-use interface. It can handle a wide range of tasks from data analysis, creating pivot tables, creating high-level charts and graphs for visualisations. These features can make the business gain effective insights to understand patterns and trends, organize proper inventory management and enhance customer satisfaction using the data.

## 6 Expected Timeline

Since "Friends" purges the records after 2 months, I only managed to collect the data of 2 months. Also, due to the lack of digital records, a few days will be required to collect and sort the data from the register.

# BDM Capstone Project

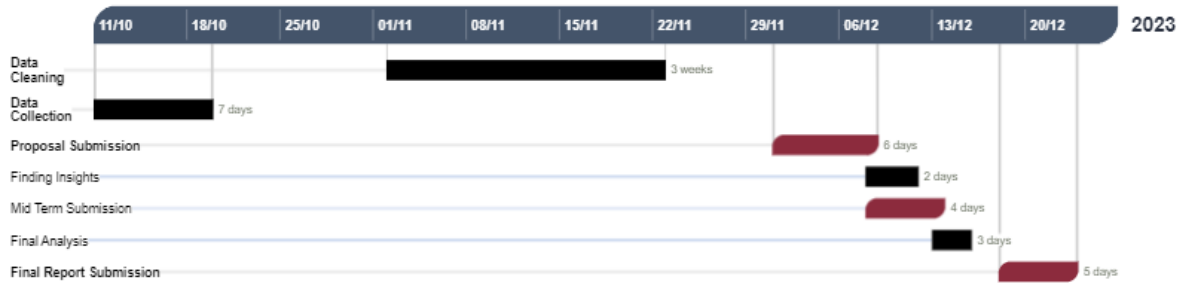


Figure 2: Gantt Chart of the BDM Capstone Project

## 7 Expected Outcome

The problem-solving approach applied by me aims to improve profits, manage inventory well, proper customer satisfaction. The exact expected outcomes are as follows:

- 7.1.1 *Profitability enhancement:* Pricing strategies are optimized leading to increased profitability.
- 7.1.2 *Smart inventory control:* Smooth inventory turnover and few examples of stockouts.
- 7.1.3 *Improved customer understanding:* Creating precision in marketing efforts for higher customer satisfaction and loyalty.
- 7.1.4 *Better Decision Making:* Extracts insights from trend analysis to inform and improve decision making.