

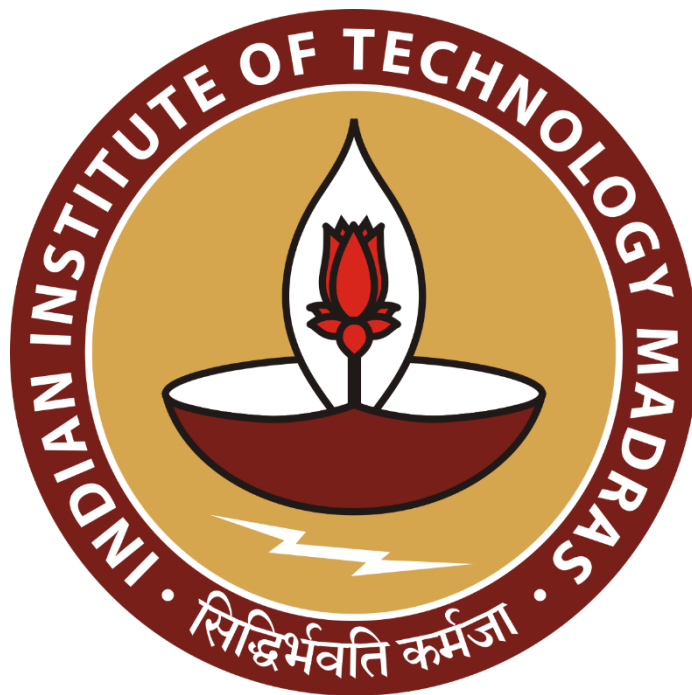
# **Enhancing Operational Efficiency and Cost Savings through Process Optimization at Prajwal Steel and Thibak Agency.**

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

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# **Enhancing Operational Efficiency and Cost Savings through Process Optimization at Prajwal Steel and Thibak Agency.**

## **1 Executive Summary and Title**

The organization under study is a B2B business that operates as an authorized distributor of [SHREE TNB POLYMERS LIMITED](#). Primary objective of the agency is to maintain inventory and establish a constant supply to associated dealers.

The organization faces several challenges that impact its operations and profitability. These challenges include issues with the credit system, price fluctuations, transportation for dealers, seasonality of sales, stock-outs, erratic demand, inventory optimization, and customer requirements mismatch. These challenges not only affect the organization's efficiency but also pose risks to customer satisfaction and overall business growth.

In order to tackle the challenges faced by the organization, there are several approaches that can be adopted. My aim is to provide practical solutions that will improve the overall performance of the agency. These solutions will involve leveraging data-driven insights, conducting credit analysis and implementing demand forecasting techniques..

## **2 Organization Background**

[Prajwal Steel Hardware and Thibak Agency](#) is a distribution agency specializing in the distribution of TNB Polymers' products. Led by owner Prakash More and managed by Prajwal More, the company has established itself as a cost-competitive player in the market. Started as a retail business in December 2020. In June 2021, they joined hands with TNB for distribution, marking a significant milestone for the company.

They specialize in distributing three categories of products: Drip Irrigation products, Sprinkler products, and PVC pipes. Currently, they hold the third position in terms of market share and have been consistently profitable. The company's sales figures showcase their growth trajectory. With a successful track record and a focus on expansion, the agency is poised for further growth in the industry.

## **3 Objectives**

- 3.1 The agency currently does not employ an efficient credit management system so there is a need to establish good credit policies.
- 3.2 Developing a robust pricing strategy based on market dynamics and customer demand.  
Forecasting price based on previous data.
- 3.3 Improve transportation and logistics systems to enhance dealer transportation efficiency, streamline logistics processes, and leverage technology for timely and cost-effective product deliveries.

- 3.4 Implementing quality control measures while flexible ordering can cater to erratic demand.
- 3.5 Develop and implement effective forecasting techniques and data analysis methods to optimize inventory management, reducing stock-outs during peak seasons and minimizing excess inventory during off-peak periods.

## **4 Background of the Problem**

The organization faces issues with credit management, which pose potential financial risks. The current credit system lacks clarity in policies and regular monitoring, leading to difficulties in effectively managing credit for both owner and dealers. These challenges can result in payment delays, cash flow issues, and increased credit risk exposure.

Price fluctuations from the mother company present challenges to the organization's profitability. The absence of a robust pricing strategy that considers market dynamics and customer demand patterns further compounds the problem. This leads to difficulties in maintaining competitive pricing, maximizing revenue, and adapting pricing strategies to changing market conditions.

The organization encounters inefficiencies in its transportation network, impacting dealer transportation efficiency. Inadequate logistics processes and limited utilization of technology contribute to delayed and costly product deliveries.

The organization grapples with the seasonality of sales, resulting in fluctuating demand and challenges in managing inventory levels effectively. Inadequate forecasting techniques and historical data analysis hinder the organization's ability to optimize inventory, leading to stock-outs during peak seasons and excess inventory during off-peak periods.

## **5 Problem Solving Approach (400 Words)**

### **1. Details about the methods used with Justification**

#### **Data Collection**

In the data collection phase, we will gather relevant information on credit management, market dynamics, transportation, and inventory management. This includes collecting data on customer credit behavior, market trends, pricing strategies of competitors, transportation processes, and historical sales data.

#### **Data Analysis Phase:**

During the data analysis phase, we will analyze the collected data using techniques such as statistical analysis, market research, time-series analysis and demand forecasting models. This will involve identifying patterns in the data.

#### **Inference Phase:**

Based on the data analysis, we will draw conclusions and make informed decisions to address the identified problems. This includes implementing an efficient credit management system with clear policies and monitoring mechanisms, developing a robust pricing strategy considering market dynamics and customer demand, optimizing transportation and logistics processes with the help of advanced technologies, and implementing demand forecasting techniques and inventory optimization models to manage seasonality and optimize inventory levels.

### **2. Details about the intended data collection with Justification**

The intended data collection for this project involves gathering information from multiple sources, including diaries and external factors. The following sources will be utilized:

**DC (Delivery Challan) Book:**

The DC book contains raw bills related to orders and purchases from dealers. It provides valuable information on the quantity, type, and timing of purchases. Analyzing this data will help identify patterns in customer orders and determine the demand for different products.

**Stock Diary:**

The Stock Diary maintains records of current available stock and unstructured information about previously sold items. This data is crucial for understanding inventory levels, stock turnover, and identifying popular products. Analyzing the Stock Diary will enable us to optimize inventory management and prevent stock-outs or excess inventory.

**Excel Sheet:**

The Excel sheet serves as an additional source of stock data, although it is only updated at the end of each month. While it may provide a snapshot of stock levels, it may not capture real-time changes. However, it can still provide insights into monthly trends and sales patterns.

**Sundry Creditors Diary:**

The Sundry Creditors Diary is a crucial source for understanding the credit owed to dealers and the payment timeline. Analyzing this data will allow us to assess credit management efficiency and identify any potential issues that may impact cash flow and financial stability.

**External Factors:**

In addition to the diaries, data on external factors will also be collected to gain a comprehensive understanding of the sales environment. These external factors may include:

- Weather conditions: Information on rainfall, temperature, and seasonal variations can help identify correlations between weather patterns and sales trends.
- Crop patterns: Understanding crop cycles and planting seasons can provide insights into the demand for specific products.
- Government policies: Monitoring government policies related to agriculture, subsidies, and incentives can help anticipate changes in demand and market dynamics.

### 3. Details about the analysis tools with Justification

To analyze the collected data, a combination of tools will be utilized:

**Microsoft Excel:** Excel will be used for data organization, sorting, filtering, and basic statistical calculations. It provides a user-friendly interface for transforming and visualizing data.

**Statistical Software:** Dedicated statistical software such as R, or Python with statistical packages will be employed for advanced statistical analysis. These tools offer a wide range of statistical functions, modeling techniques, and data visualization capabilities.

**Data Visualization Tools:** Tools like Tableau or Power BI will be used to create interactive dashboards, charts, and graphs. These tools enhance data presentation and facilitate better understanding of insights.

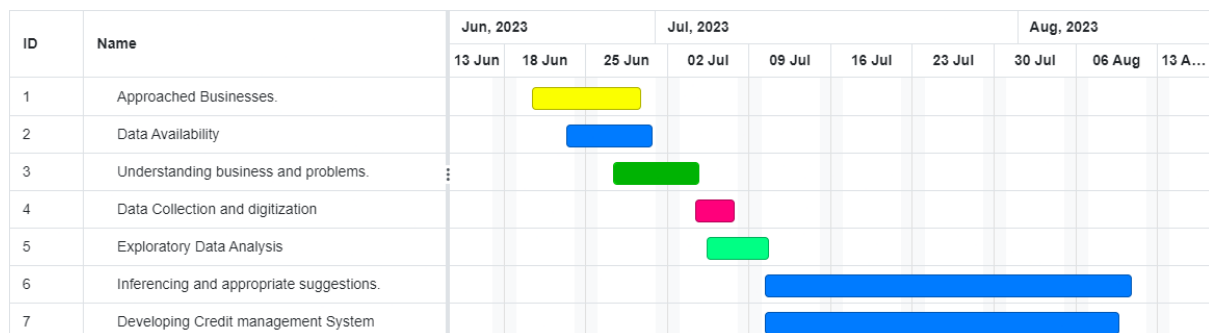
**Data Scraping :**By scraping data from the mother company's website, we can gather up-to-date pricing information, compare it with historical data, and identify trends and patterns in pricing over time. This data will provide valuable insights into how prices fluctuate, react to market conditions, and respond to competitive pressures.

## 6 Expected Timeline

### 6.1 Work Breakdown Structure (WBS):

1. Project Initiation: Define objectives, identify stakeholders, establish timeline, allocate resources.
2. Data Collection: Gather data from various sources, convert handwritten data into digital format.
3. Data Analysis: Clean and preprocess data, conduct statistical analysis, demand forecasting, and pricing pattern analysis.
4. Problem Identification and Recommendations: Identify challenges, analyze data for insights, generate recommendations.
5. Implementation of Recommendations: Implement credit management system, develop pricing strategy, improve transportation and logistics, optimize inventory management.
6. Reporting and Documentation: Prepare project reports, create visual presentations, document implemented strategies.
7. Project Review and Closure: Assess project objectives, collect feedback, document lessons learned, formalize project closure.

### 6.2 Gantt chart



## 7 Expected Outcome

### 7.1 Improved inventory management and product sales analysis:

Better inventory planning based on data-driven insights. Identification of top-selling products and understanding demand patterns. Enhanced control over stock levels to minimize stock-outs and excess inventory.

### 7.2 Enhanced understanding of customer distribution and preferences:

Improved understanding of customer demographics and market segments. Identification of customer preferences and purchasing behavior. Tailoring distribution strategies and marketing efforts based on customer insights.

### **7.3 Streamlined transportation and logistics processes:**

Improved efficiency in dealer transportation and product deliveries. Integration of technology solutions for real-time tracking and routing optimization. Reduction in transportation costs and improved customer satisfaction.

### **7.4 Enhanced credit management and reduced financial risks:**

Implementation of clear credit policies and monitoring mechanisms. Improved credit analysis and risk assessment. Reduction in payment delays and cash flow issues, leading to improved financial stability.