

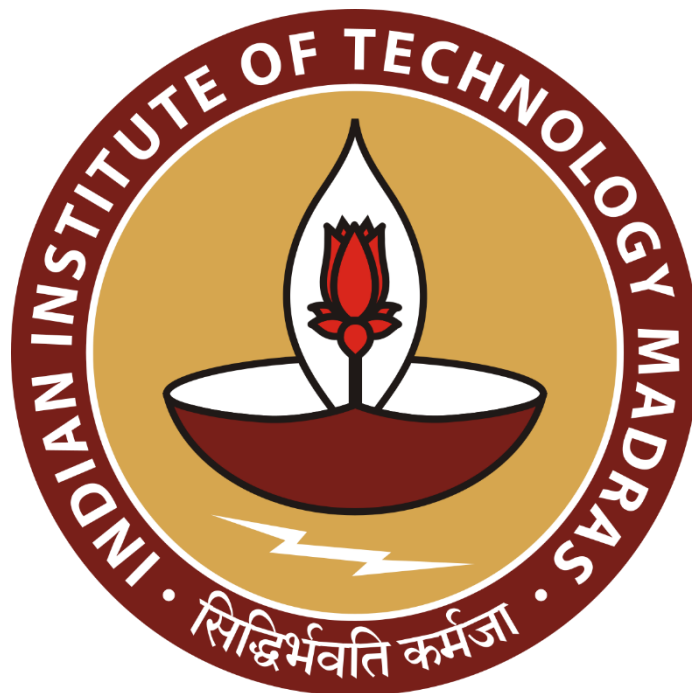
A Proposal Report for the BDM Capstone Project

# Strategic Capital and Inventory Optimization to Drive Business Performance.

Submitted by

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## **Declaration Statement**

I am working on a Project Title Strategic Capital and Inventory Optimization to Drive Business Performance. I extend my appreciation to, **SATHANA ELECTRICAL** 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 analyzed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis has 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: **T. AISWARYA**

Date: 02/03/2025

# 1 Executive Summary and Title:

This project focuses on Sathana Electrical, a retail hardware and electronics shop based in **Tiruvannamalai**, owned by **Thavamani**. The business operates under a **B2C** (Business-to-Consumer) model, selling a wide range of products directly to individual customers.

One of the primary concerns is that a significant portion of capital is locked in excess inventory, leading to cash flow constraints and supplier payment delays. Inefficient inventory tracking results in overstocking of slow-moving products, while fast-selling items often go out of stock, leading to lost sales and reduced customer satisfaction. This mismanagement directly impacts the shop's ability to maintain a steady revenue stream.

To address these challenges, inventory management will be enhanced through the implementation of digital tracking systems, demand forecasting, and stock rotation techniques like **FIFO/LIFO**. These measures are expected to reduce **overstocking** by **15-20%** and minimize **stockouts**, which currently cause a potential revenue loss of **₹2,00,000** per month. Additionally, sales growth strategies such as online sales integration, structured credit policies, and targeted seasonal promotions can help increase revenue by **10-20%**.

By leveraging data-driven insights, this study aims to develop effective strategies to optimize inventory management, improve cash flow, and enhance overall business operations, ensuring long-term financial stability and sustainable growth.

## 2 Organization Background:

**Sathana Electrical** is a leading retail hardware and electronics store located in **Tiruvannamalai**, serving a wide range of customers with high-quality **electrical and plumbing products**. Founded six years ago with an initial investment of **₹8,00,000**, the business has shown consistent growth and now operates with a dedicated team of **four employees**. Through strong industry partnerships and reliable service, Sathana Electrical has established itself as a channel partner of **Aquatek** and **Finolex** while maintaining a prominent retail presence with **Parryware** products.

The store caters to both retail customers and bulk buyers, making it a trusted supplier for building construction engineers and contractors. Currently, Sathana Electrical handles **10 to 12** bulk

orders per month from construction professionals while also serving daily walk-in customers for their hardware and electrical needs. With an average **monthly sale of ₹20,00,000**, the shop has become a key player in the local electrical retail market.

Recognized for its commitment to quality and reliability, Sathana Electrical became a registered member of the Tiruvannamalai Electrical Association on March 31, 2021. Moving forward, the business aims to further optimize its inventory management, expand its sales channels, and enhance customer service to sustain its upward growth trajectory.

### 3 Problem Statement:

#### Capital Allocation Issues

- A significant portion of capital remains locked in excess inventory, causing **cash flow constraints** and supplier payment delays.
- Inefficient financial tracking leads to poor **capital utilization**, preventing investment in high-demand products.

#### Overstocking & Stockout Challenges

- Overstocking leads to **higher holding costs**, reducing profit margins and limiting available capital.
- Frequent stockouts result in **missed sales opportunities**, impacting revenue and customer satisfaction.

#### Limited Sales and Business Growth

- The business is overly dependent on **in-store sales**, missing opportunities in **online and bulk orders**.
- Delayed customer payments **disrupt cash flow**, forcing reliance on credit and supplier discounts.

## 4 Background of the Problem:

Sathana Electrical offers a wide range of products, including **electronic items, plumbing materials, lighting solutions, and hardware essentials**. Despite its steady growth, the shop faces several challenges related to **capital allocation, inventory management, and sales expansion**, which impact its financial stability and profitability.

One of the major issues is **capital allocation**, where a significant portion of the business's funds is tied up in excess inventory. This results in **cash flow constraints**, making it difficult for the owner to **pay suppliers on time, invest in fast-moving products, and expand operations**. Poor financial tracking further exacerbates the problem, leading to **inefficient utilization of available funds**.

Additionally, **inventory mismanagement** creates further operational hurdles. The shop frequently experiences **overstocking of slow-moving products**, leading to **higher holding costs and reduced profit margins**. Conversely, **fast-selling items often run out of stock**, causing **missed sales opportunities and dissatisfied customers**. The lack of **demand forecasting and real-time stock tracking** contributes to these inefficiencies.

Moreover, the shop heavily relies on **in-store sales**, limiting its revenue potential. **Delayed customer payments** disrupt cash flow, forcing the business to depend on credit and supplier discounts. The **absence of structured seasonal promotions and online sales integration** further restricts business growth. Addressing these challenges through **data-driven inventory management, improved capital allocation, and diversified sales strategies** is essential for **long-term sustainability and increased profitability**.

## 5 Problem Solving Approach:

### Details About the Intended Data Collection with Justification

To address the core challenges faced by **Sathana Electrical**, data collection will focus on **capital allocation, inventory management, and sales trends**. The primary data sources will include:

1. **Sales and Inventory Logs** – Historical sales data, stock levels, and inventory turnover rates will be collected to identify **high-demand and slow-moving products**.
2. **Supplier Payment and Credit Records** – Tracking supplier payment schedules, credit terms, and delayed payments will help **analyze cash flow constraints and capital allocation efficiency**.
3. **Customer Purchase and Payment Trends** – Analyzing **delayed payments from customers**

and their impact on business liquidity will provide insights into **optimizing credit policies**.

4. **Seasonal Sales Performance Data** – Monthly revenue variations will be tracked to **identify peak sales months** (January–March) and low-demand periods for better **stock planning and promotions**.

A **minimum six-month data collection period** is essential to capture trends across different seasons, **ensuring data-driven decision-making for inventory optimization, capital management, and business expansion**.

## Details About the Analysis Tools with Justification

To analyze the collected data effectively, we will utilize:

- **Microsoft Excel & Google Sheets** – These tools will be used for **data organization, basic trend analysis, and visualization** through pivot tables, graphs, and charts.
- **Python (Pandas, NumPy, and Matplotlib)** – Python will allow for **in-depth analysis**, such as forecasting **future stock demands**, evaluating **capital utilization trends**, and identifying inefficiencies in inventory management.
- **Inventory Management Software (Zoho Inventory or QuickBooks)** – These tools can help **track stock levels in real-time**, reducing stockouts and overstocking issues.
- **Financial Management Tools** – Software like **Tally or QuickBooks** can be integrated to **monitor cash flow, supplier payments, and customer dues**, helping improve capital allocation strategies.

These tools will help to **analyze historical trends, optimize inventory, and enhance financial tracking for better business efficiency**.

## Details About the Methods Used with Justification

The following methods will be employed to tackle operational inefficiencies:

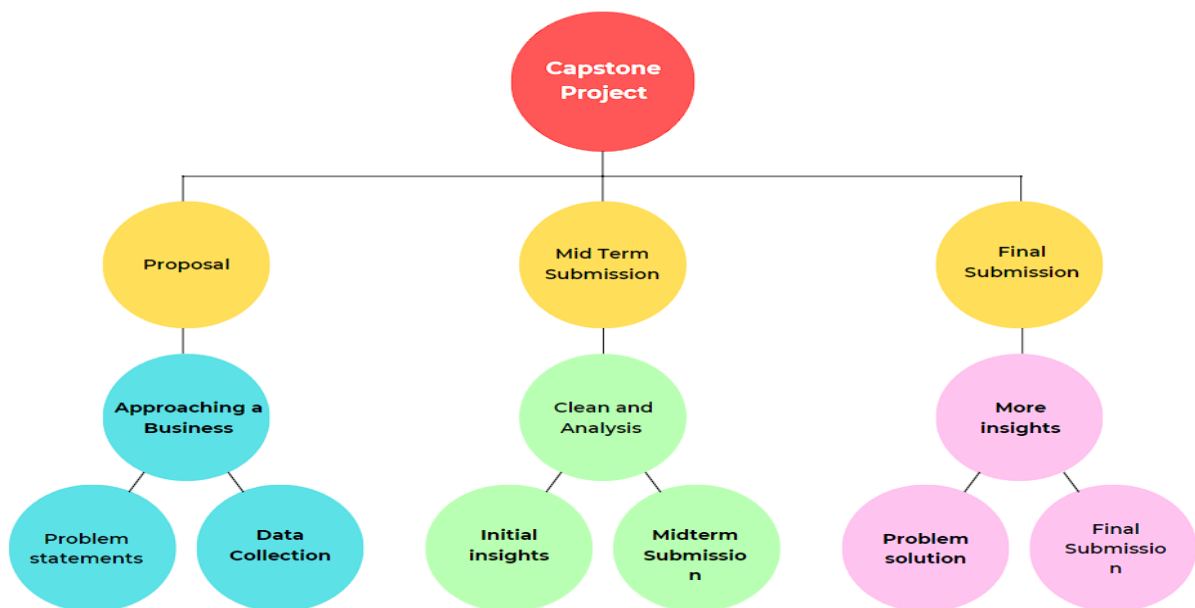
1. **Inventory Standardization and Categorization** – Stock data will be categorized into **fast-moving, slow-moving, and obsolete products** to **prevent excess inventory accumulation and reduce financial strain**.
2. **Sales and Demand Forecasting** – Analyzing past **sales trends using predictive analytics** will help forecast **future stock demand**, ensuring **optimal inventory levels** to **avoid stockouts and excess stock**.
3. **Capital Allocation and Liquidity Analysis** – Supplier payment records and credit terms will be assessed to **identify cash flow bottlenecks** and improve **capital utilization strategies**.

4. **Customer Payment Behavior Analysis** – Tracking **delayed payments from customers** will help structure **better credit policies** and introduce **early-payment incentives** to improve cash flow.
5. **Supplier Coordination & Order Planning** – Establishing **just-in-time (JIT) inventory practices** and **stronger supplier relationships** will allow on-demand restocking, **reducing overstocking costs**.
6. **Sales Growth Strategies and Revenue Diversification** – The shop will explore **online sales platforms**, **seasonal promotions**, and **bulk order partnerships** to **increase sales** and **reduce dependency on in-store purchases**.

By integrating these methods, **Sathana Electrical** can **improve financial stability**, **optimize stock management**, and **expand business opportunities** for long-term growth.

## 6 Expected Timeline

### 6.1 Work Breakdown Structure:



*Figure 1: Work Breakdown Structure*



## 6.2 Gantt chart:

### BDM

### project

Project start: **Mon, 2/24/2025**

Display week: **1**

PROJECT LEVEL: 1

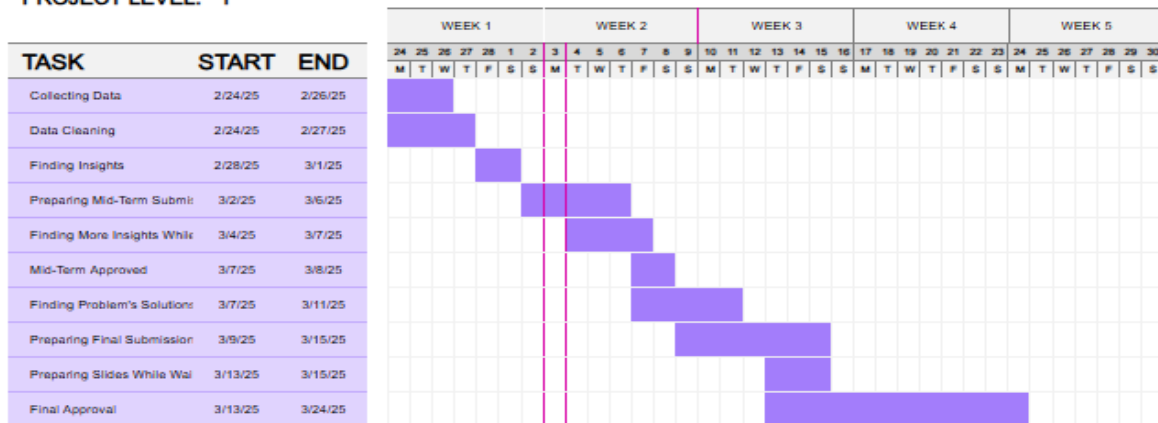


Figure 2: Expected timeline for completion of project.

## 7 Expected Outcome

- The analysis of sales and inventory data at **Sathana Electrical** is expected to yield several key outcomes that will significantly improve business operations and financial performance.
- **I. Improved Sales and Customer Satisfaction:** By identifying customer preferences, peak sales periods, and high-demand products, the store can tailor its sales strategies to better meet customer needs. This will result in increased sales, enhanced customer satisfaction, and a stronger market presence.
- **II. Optimized Inventory Management:** Through data-driven inventory planning, the store will reduce **overstocking by 15-20%** and minimize **stockouts**, ensuring that fast-moving products are always available. This will improve operational efficiency, lower holding costs, and reduce financial strain.
- **III. Effective Capital Allocation:** Sales analysis will provide insights into **profitability trends** and the **return on investment** for different products. This will allow the business to allocate resources more efficiently, ensuring that capital is invested in **high-demand, high-margin products**, ultimately increasing profitability.
- **IV. Efficient Old Stock Management:** Implementing strategies to **track and clear slow-moving stock** will help reduce **wastage and excess inventory costs**. This will free up working capital, allowing for more strategic investments in new and in-demand products, leading to **higher revenue and sustainable**