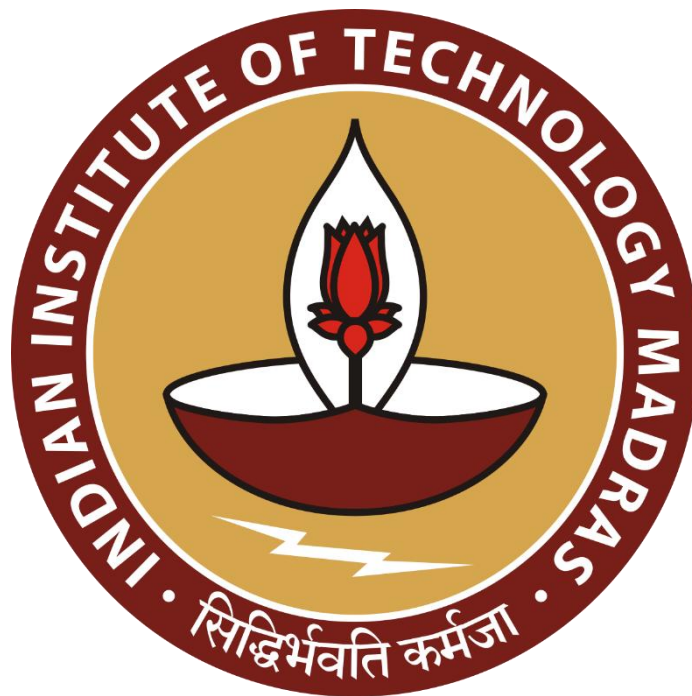# Battery Store Success Engine:

Analytics and Insights for Retail Growth

A Proposal report for the BDM capstone Project

Submitted by

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Declaration Statement

I am working on a Project titled "Battery Store Success Engine: Analytics and Insights for Retail Growth". I extend my appreciation to The Pivasa Battery, 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: Satwik Gupta

Date: 25/12/2024

1 Executive Summary

The project focuses on a small shop located at Bhikharipur Chunar Road, Chitaipur Chauraha, Varanasi, Uttar Pradesh 221005. The business operates in the B2C segment, providing high-quality batteries directly to end consumers at affordable prices. Its product range caters to diverse needs, including automotive batteries for cars, motorcycles, and commercial vehicles, as well as home energy solutions like backup power batteries and solar storage systems.

The shop faces challenges such as low profitability due to excessive inventory stock, which leads to increased storage costs and tied-up capital. Furthermore, the absence of data-driven pricing and marketing strategies makes it difficult for the business to remain competitive, impacting growth and sustainability.

The project aims to address these issues by employing analytical methods to extract actionable insights. Data will be analyzed to understand customer behavior, sales patterns, and demand trends. Tools like Pareto analysis, market basket analysis, and histograms will uncover key insights, while platforms such as Google Colab will enable advanced visualizations like heatmaps to optimize stock management. Simpler tasks will be managed using Microsoft Excel.

The expected outcome includes better inventory management, reduced capital blockage, and enhanced profitability, helping the business achieve sustainable growth and market competitiveness.

2 Organization Background

The battery shop, established six months ago at Bhikharipur Chunar Road, Chitaipur Chauraha, Varanasi, is owned by Mr. Arun Kumar Singh. Initially, the shop offered automotive batteries for cars, motorcycles, and commercial vehicles, along with battery water. However, due to growing demand, solar batteries were later added to the product lineup. Mr. Singh is dedicated to efficiently managing the business while working to expand his customer base. To support operations, he has hired a helper on a monthly salary who manages the shop in his absence. The shop also offers free home services for installing new batteries, inverters, and related products, enhancing customer convenience. With a vision for growth, Mr. Singh dreams of opening additional branches in the future, making his business more accessible to customers across different locations. His commitment to quality service and customer satisfaction underpins his aspirations for long-term success.

3 Problem Statement

1) The shop struggles to expand its customer base and improve market reach.

2) Revenue generation is limited as the owner is new to the business.

3) The shop needs to optimize stock levels by accurately forecasting demand to avoid both stockouts and overstocking.

4 Background of the Problem

The battery shop is encountering significant challenges in expanding its customer base and enhancing its market reach. As a new business, the owner is still navigating the complexities of the

industry. The shop struggles with low brand recognition and an insufficient marketing strategy, making it difficult to attract customers in a competitive market. The absence of an effective customer outreach plan and minimal digital presence further hinder the shop's visibility and growth potential.

Revenue generation is also limited due to the owner's inexperience in the battery sector. The lack of established industry connections, insufficient customer trust, and a lack of familiarity with optimal pricing strategies are key factors affecting financial performance. Additionally, inventory management issues, such as overstocking and understocking, are compounding these difficulties.

Accurate demand forecasting is a critical challenge, as overstocking ties up valuable capital in unsold products, while stockouts lead to lost sales and dissatisfied customers.

Internal Problems:

- Owner's inexperience in managing the business and formulating effective market strategies.
- Inefficient stock management and lack of demand forecasting systems.

External Problems:

- A competitive market with established businesses.
- Limited local visibility and a lack of effective marketing initiatives

5   Problem Solving Approach

To address the challenges faced by the battery shop, a well-structured problem-solving approach can be implemented. The following strategies outline potential solutions to the shop's core issues:

1. **Expanding Customer Base and Enhancing Market Reach**

- **Digital Presence:** Establish a strong online presence by creating a website and setting up social media profiles on platforms like Facebook and Instagram. Running targeted ads on these platforms can help reach a broader audience and showcase the shop's products and services.
- **Local SEO and Online Listings:** Improve the shop's visibility on search engines by optimizing for local SEO. Register the business on online directories such as Google My Business and Justdial to make it easier for potential customers to find the shop.
- **Referral Programs:** Launch a referral program to motivate existing customers to refer new clients. Offering incentives for successful referrals will help grow the customer base through word-of-mouth marketing.
- **Partnerships with Local Businesses:** Collaborate with nearby car service stations, auto repair shops, and other complementary businesses. These partnerships can create cross-promotion opportunities and increase customer outreach.

2. **Revenue Generation and Pricing Strategy**

- **Promotions and Discounts:** Introduce time-limited offers, such as discounts and bundle deals on automotive and solar batteries. This will attract budget-conscious customers and help increase sales volume.

- **Customer Loyalty Programs:** Implement a loyalty program that rewards repeat customers with discounts or exclusive offers. This will encourage return business and help build long-term customer relationships.

3. **Data Analysis Tools**

- **Microsoft Excel:** Excel is an ideal tool for small businesses with limited programming knowledge, offering an accessible interface for data manipulation, visualization, and pattern recognition.
- **Google Colab:** For more advanced data analysis, Google Colab allows the use of Python and its powerful libraries to create complex visualizations, such as heatmaps, which go beyond the capabilities of Excel, offering deeper insights into sales and inventory trends.

By implementing these strategies, the shop can enhance its market presence, optimize pricing strategies, and improve data-driven decision-making, ultimately boosting revenue and fostering growth.

6 Expected Timeline

6.1 Work Breakdown Structure:
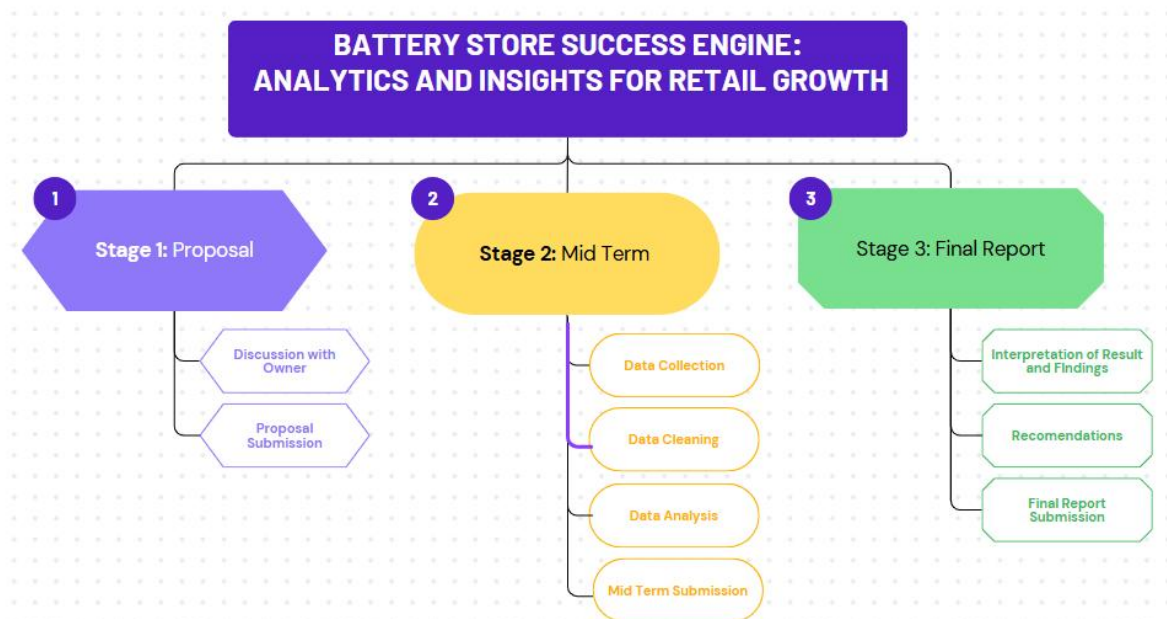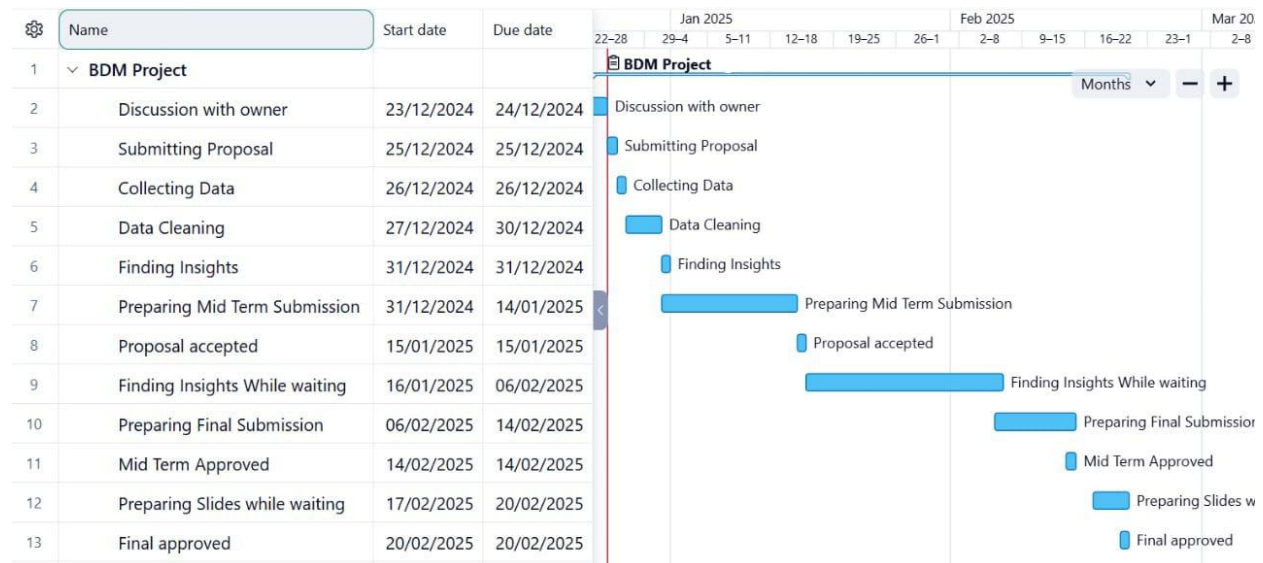
6.2   Gantt chart

Figure 1 Expected timeline for completion of project.

7   Expected Outcome

1. **Optimized Inventory Management:** Accurate forecasting and demand analysis will help the shop maintain ideal stock levels, minimizing overstocking and stockouts. This will improve cash flow and customer satisfaction by ensuring availability of high-demand products.

2. **Better Sales Insights:** Analyzing sales trends will reveal best-selling products and customer preferences, enabling the owner to focus on high-demand items and improve overall profitability.

3. **Reduced Returns and Increased Trust:** Identifying the reasons behind product returns will help address quality issues or mismatched expectations, reducing return rates and building stronger customer trust.

4. **Targeted Marketing Strategies:** Customer data analysis will offer insights into demographic trends, allowing the shop to design marketing strategies that effectively target specific customer segments.

5. **Improved Revenue Growth:** Implementing optimized pricing, promotional offers, and loyalty programs will boost sales, enhance customer retention, and drive steady revenue growth.

These outcomes will set the foundation for sustainable growth and support future expansion plans.