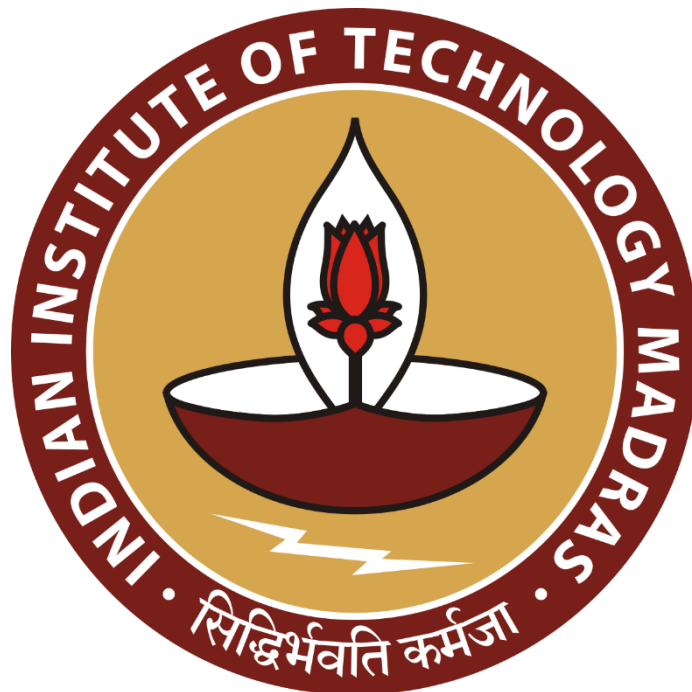# Leveraging Data-Driven Solutions to Resolve Inventory and Payment Challenges at Prapti Seva LLP

A Proposal report for the BDM capstone Project

Submitted by

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Contents

Declaration Statement

I am working on a Project titled "**Leveraging Data-Driven Solutions to Resolve Inventory and Payment Challenges at Prapti Seva LLP**". I extend my appreciation to [**Prapti Seva LLP**], 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: (**Digital Signature**)

Name: ISHAN GAJANAN TARE

Date: 13th June, 2025

1 Executive Summary and Title

Prapti Seva LLP is a mid-sized wholesale and retail enterprise based in Pune, Maharashtra, operating in both B2B and B2C segments. The company deals in personal and household devices, and construction equipment, conducting all transactions digitally to ensure transparency and efficiency.

However, the business faces two key challenges. The first is inventory management inefficiencies caused by inconsistent data entry and lack of real-time tracking. These issues result in frequent stock mismatches, stockouts, and delayed deliveries, adversely affecting customer satisfaction and operational effectiveness. The second challenge is cash flow disruption due to delayed payments from B2B clients, which hampers procurement cycles, strains working capital, and impacts daily operations.

To address these challenges, this project adopts a comprehensive data-driven approach. It begins with collecting and integrating data from invoices, purchase orders, and sales records to ensure accurate and consistent inputs. Descriptive analytics will analyze existing issues, while predictive analytics will help forecast inventory demands and client payment behaviors. Continuous monitoring of key performance indicators like inventory turnover and Days Sales Outstanding (DSO) will allow timely interventions. Practical tools including Excel and Power BI will support data analysis, reporting, and visualization.

The anticipated outcomes are enhanced data accuracy, reduced inventory errors, minimized stockouts, improved cash flow management, and greater operational efficiency. This will enable Prapti Seva LLP to better meet market demands and maintain financial stability, supporting long-term business growth and improved customer service.

2 Organization Background

Prapti Seva LLP is a for-profit enterprise established on March 18, 2020, and is headquartered in Pune, Maharashtra. The company is led by Designated Partners Ramakant Bidwai Gopalrao and Vishal Ramakantrao Bidwai, with its registered office located at Flat C 304, Leon Orbit, S. No. 16, H. No. 4+5, Rahatani, Pimpri, Pune–411017. Specializing in the wholesale and retail distribution of household and personal goods, and construction equipment, Prapti Seva LLP caters to both B2B and B2C segments, serving a wide range of customers across diverse industries. They currently employ approximately 20–25 staff across sales, logistics, administration, and digital operations. Business hours typically run from 9:30 AM to 7:00 PM, Monday to Saturday.

A key strength of the company lies in its adoption of digital tools to manage operations and maintain organized transaction records. However, as the volume and complexity of transactions have grown, the company has observed the need to further strengthen data accuracy and streamline invoicing workflows. Challenges around manual data entry and reconciliation have occasionally affected operational efficiency and compliance processes, highlighting the importance of robust data management practices. Despite these hurdles, Prapti Seva LLP remains committed to improving its internal systems to enhance service delivery, maintain regulatory compliance, and support its vision of becoming a trusted and reliable distribution partner in its domain.

3 Problem Statement

3.1 Inventory Management Inefficiencies and Stockout Challenges

Prapti Seva LLP faces frequent inventory mismatches due to inconsistent data entry and lack of real-time tracking. These issues lead to stockouts, delayed deliveries, and reduced customer satisfaction, impacting both B2B and B2C operations.

3.2 Cash Flow Disruptions Due to Delayed B2B Payments
Prapti Seva LLP faces recurring cash flow issues as B2B clients delay payments beyond agreed timelines. This hampers procurement cycles, affects working capital, and disrupts day-to-day business operations.

4 Background of the Problem

Prapti Seva LLP is a digitally operated B2B and B2C wholesale and retail business dealing in household goods and construction equipment. The company initially operated smoothly using basic digital systems, but as the scale of operations grew, key issues began to surface. Two major problems that evolved over time are inventory mismatches and cash flow disruptions.

Inventory-related issues primarily arise from inconsistent or incorrect data entries during purchase and sales updates. While this was manageable at a smaller scale, growing product categories and transaction volumes led to delayed or missed entries, causing discrepancies between actual and recorded stock. This results in stockouts, order cancellations, and lost sales. In some cases, staff resort to manual checks or duplicate entries, further complicating the system.

The second challenge is delayed payments from B2B clients. Initially, credit-based transactions posed minimal risk, but with business expansion and a lack of structured follow-up or automated reminders, payment delays became common. This hampers cash flow, affecting procurement, payroll, and overall operations.

These operational and financial inefficiencies—developed progressively rather than from the start—now hinder business growth, reduce customer satisfaction, and require a comprehensive data-driven solution for sustainable management.

5 Problem Solving Approach
1. Strategic Data Collection and Integration

Focuses on consolidating accurate, real-time data from inventory, sales, and finance systems to build a reliable foundation for analysis and decision-making.

1. **Unified Inventory System:** A centralized inventory master sheet will be created to consistently record every product's details such as product ID, description, quantity received, quantity sold, and current stock levels. This system will ensure real-time tracking of stock movements and reduce reliance on manual data entry that often causes discrepancies.

2. **Financial Data Integration:** Payment history, outstanding receivables, invoice details, and credit terms of B2B clients will be extracted from accounting and billing software. This integrated dataset will enable a comprehensive view of the company's cash flow and identify payment delays that impact operations.

2. Descriptive Analytics for Operational Insights

Uses historical and real-time data to identify existing inefficiencies, recurring problems, and trends in inventory and cash flow.

1. Analyze stock levels, frequency of stockouts, and discrepancies between recorded and physical stock to pinpoint inefficiencies.

2. Examine accounts receivable aging reports to highlight overdue payments and client payment behavior.

3. Predictive Analytics for Future Planning

Applies forecasting models to anticipate future inventory needs and payment behaviors, enabling proactive business planning.

1. Use historical sales and seasonal data to estimate future stock needs and avoid both stockouts and overstocking.

2. Predict which clients are likely to delay payments using payment history data.

4. Continuous Monitoring and Performance Optimization

Establishes a feedback-driven system to track performance metrics, refine processes, and ensure ongoing operational improvement.

1. Conduct periodic physical stock checks and compare with system data to catch discrepancies early.

2. Track KPIs such as stock accuracy, order fulfillment rate, inventory turnover, and days sales outstanding (DSO).

3. Continuously refine reorder points, invoice verification processes, and credit control based on data insights.

5. Essential Tools and Technologies for Solution Implementation

Outlines key software and platforms that support data processing, visualization, forecasting, inventory control, and customer relationship management.

1. **Microsoft Excel / Google Sheets:** For data cleaning, organizing, and detailed reporting using pivot tables and conditional formatting.

2. **Power BI / Tableau:** To create interactive dashboards that visualize inventory trends, payment status, and key performance indicators in real-time.

3. **Time Series Forecasting Tools (e.g., Excel, Power BI, or Python libraries like Prophet):** For predicting sales trends and inventory demand.

4. **Customer Relationship Management (CRM) Software (e.g., HubSpot, Zoho CRM):** To monitor client payment behaviors, automate payment reminders, and manage credit control.

5. **Enterprise Resource Planning (ERP) or Inventory Management Systems:** To centralize stock records, automate stock level alerts, and support seamless inventory updates.

6. **Automated Alert Systems:** Custom scripts or built-in software features to notify staff about low stock levels or overdue payments, ensuring timely action.

6 Expected Timeline
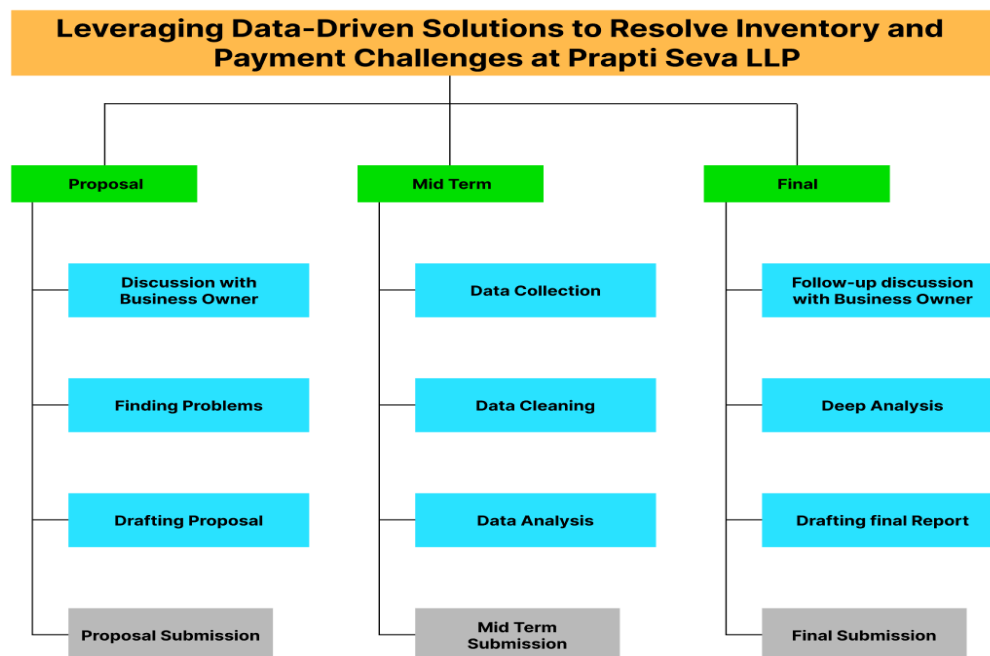
6.1   Work Breakdown Structure

Figure 6.1.1: Work Breakdown Structure
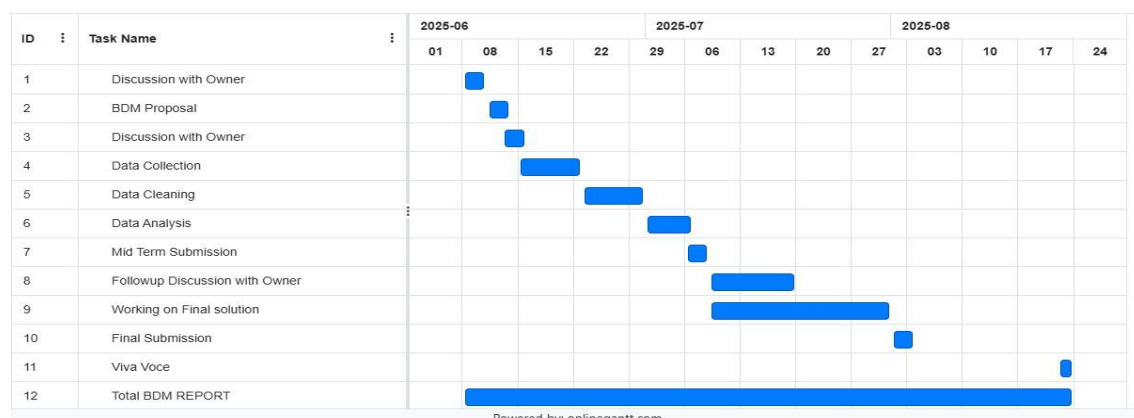
6.2   Gantt Chart

Figure 6.2: Gantt Chart

7 Expected Outcome

Implementing this structured, data-driven approach is anticipated to deliver the following measurable improvements for Prapti Seva LLP:

1. **Improved Inventory Accuracy**
   Through centralized data tracking and real-time updates, the company will significantly reduce inventory mismatches and discrepancies, ensuring that stock records match physical availability. This will lead to smoother operations across both B2B and B2C channels.

2. **Reduction in Stockouts and Overstocking**
   Demand forecasting using predictive analytics will help maintain optimal stock levels. This minimizes losses from missed sales opportunities due to stockouts and prevents capital being tied up in excess inventory, ultimately improving operational efficiency.

3. **Streamlined Cash Flow and Working Capital Management**
   With better monitoring of B2B client payment patterns and predictive identification of potential delays, the business can proactively manage receivables. This will help maintain a steady cash flow, ensuring smoother procurement and daily operations.

4. **Data-Backed Decision Making**
   Dashboards and automated reports will empower the management with actionable insights for procurement, sales, and credit control. This data visibility will support faster and more accurate decision-making at all levels.

5. **Enhanced Financial Compliance and Documentation**
   The digitized and integrated system will ensure all invoices, payments, and inventory records are updated and verifiable. This will support timely and accurate GST and Income Tax filings, reducing risks of fines or non-compliance.

6. **Minimized Manual Errors and Redundancy**
   Using automation and validation checks at the data entry stage will eliminate the need for maintaining duplicate records across departments. This will save time, reduce manpower costs, and increase operational consistency.

Sustainable Operational Improvements
By continuously tracking key performance indicators (KPIs) and adapting processes based on real-time insights, Prapti Seva LLP can ensure that improvements are not one-time fixes but part of a long-term, scalable strategy.