Addressing Stock-Turnover Disparity at Kirtan Hardware: An Inventory and Sales Optimization Approach

A Proposal report for the BDM capstone Project

Submitted by

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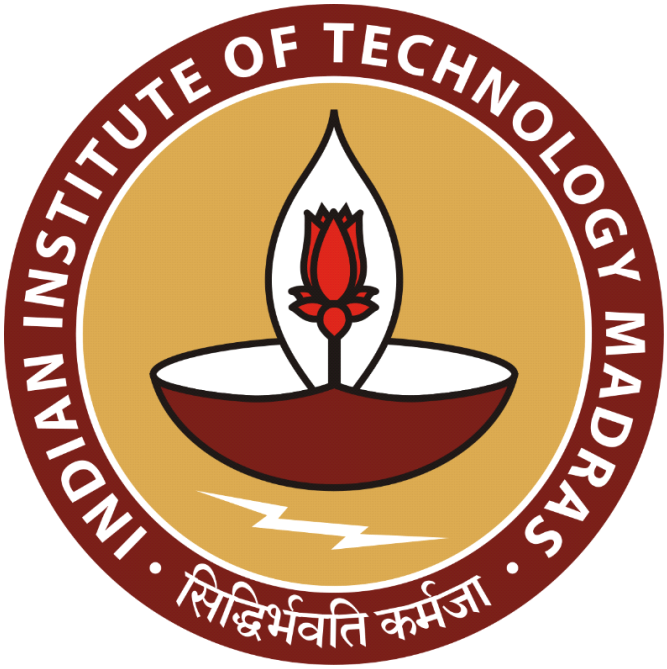

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Declaration Statement

I am working on a Project titled "**Addressing Stock-Turnover Disparity at Kirtan Hardware: An Inventory and Sales Optimization Approach**". I extend my appreciation to **Kirtan Hardware, Hyderabad, Telangana** for providing the necessary resources that enabled me to conduct my project.

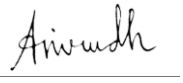
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through primary sources and carefully analyzed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis 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 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: Anirudh Pabbaraju

Date: 13/1/2025

1) Executive Summary and Title (200 Words)

Addressing Stock-Turnover Disparity: Optimizing Inventory Utilization and Sales Efficiency at Kirtan Hardware

The project focuses on Kirtan Hardware, a leading wholesale hardware supplier operating across South India, in **Hyderabad, Opp to Deccan Engg College Lane, Telangana**. The business is owned by **Rajesh Patel, Kirit Amipara** and it primarily serves B2C customers and sells the hardware products to retail shops (B2B) and specializes in cabinet handles, curtain brackets, sofa legs, kitchen accessories, and more, with exclusive rights to the **Bluetouch** brand in the region.

Despite rapid expansion from **10 outlets** in **2016** to **180 outlets** in **2024**, the company is facing a significant stock-turnover imbalance. A initial **₹10 lakh** investment in inventory yielded **₹15 lakh** turnover, but now in 2024 **₹1 crore** investment in inventory now yields a turnover of only **₹45 lakh**, highlighting inefficiencies in stock utilization and sales strategies. This disparity has created challenges in managing unsold inventory, blocking capital, and reducing profitability.

The issues will be addressed by leveraging data-driven techniques such as trend analysis, root cause analysis, statistical modelling, and predictive analytics. Tools like Tableau and regression algorithms will help identify consumption trends and optimize inventory levels. Correlating stock data with sales performance will enable actionable recommendations to improve both inventory and sales efficiency

2) Organization Background (150 Words)

Kirtan Hardware, a wholesale hardware furniture supplier based in Hyderabad, is known for its exclusive distribution rights for the **Bluetouch** brand across South India. Founded in 2016 by **Rajesh Patel** in partnership with **Kirit Amipara**, the company initially started with 10 outlets and has expanded to **180 outlets by 2024**. The products offered include Cabinet Handles, Main Door Handles, Conceal, Kadi and Knob, Curtain Brackets, Support, Sofa Legs, Khuti, Stands, and Kitchen Jali, primarily made from metals like **Zinc, Aluminum, and Stainless Steel.** The company caters to both retail (B2B) and walk in customers (B2C) with normal and bulk orders. The products are manufactured in **Gujarat** and distributed across the entire South Indian region. The number of employees in **Kirtan Hardware** shop are **4** now !

Despite its success, the company faces a challenge in stock management as the turnover growth has not scaled proportionally with its increased stock investment. Kirtan Hardware also operates its own website for wholesale trading and uses **Technosis software** for maintaining records of purchases and outgoing products. Their expansion has been substantial, but optimizing stock-to-turnover efficiency remains a critical concern for sustainable growth. Along with retail shops Interior Designers, Carpentars, Architects are also the clients for **Kirtan Hardware**

3) Problem Statement (Listed as objectives) (100-120 Words)

Addressing Stock-Turnover Disparity: Optimizing Inventory Utilization and Sales Efficiency at Kirtan Hardwar

3.1 Identifying the Root Causes of Stock Inefficiencies

Kirtan Hardware has observed a disparity between its increased stock investments and turnover growth. This objective focuses on analyzing patterns and trends in stock movement to uncover reasons for inefficiencies. Factors such as overstocking, mismatched product demand, or ineffective inventory categorization will be explored to pinpoint the root causes of unconsumed inventory.

3.2 Optimizing Inventory Management for Better Utilization

To address stock inefficiencies, this objective emphasizes developing strategies for better inventory turnover. By analyzing product performance, refining inventory practices, and forecasting demand more accurately, the goal is to reduce unsold stock, enhance cash flow, and align stock investments with revenue targets

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3.3 Aligning Inventory with Market Demand

This objective seeks to bridge the gap between inventory and market demand by refining distribution strategies and improving demand forecasting. Ensuring that stock levels meet actual market requirements will minimize wastage, optimize resource allocation, and drive business profitability.

4) Background of the Problem (200 Words

Kirtan Hardware has experienced substantial growth since its inception in **2016**, expanding from **10** outlets to **180** outlets by **2024**. However, this growth has led to an imbalance between stock inventory and turnover. Initially, the company invested **₹10 lakh** in stock, generating **₹15 lakh** in turnover across **10 outlets** consisting of **5 employees per outlet**, reflecting a healthy stock-to-turnover ratio. But as the stock investment grew to **₹1 crore**, the turnover only reached **₹45 lakh** with **180 outlets** and **7 employees** per outlet, despite an increase in outlets. This signals a significant inefficiency in stock utilization and sales strategies. The company is not fully capitalizing on its inventory, resulting in a mismatch between stock levels and revenue. Such inefficiencies are restricting potential profits and limiting growth opportunities. To sustain its expansion and ensure profitability, **Kirtan Hardware** must optimize inventory management and refine its sales strategies to better align stock investments with turnover.

5) Problem Solving Approach (400 Words)

1) Methods Used:

a) **Trend Analysis**: Trend analysis will be employed to evaluate stock and turnover data from the past six months, identifying patterns in inventory consumption and sales performance. By examining fluctuations in stock levels and corresponding revenue generation, we can gain actionable insights into recent inefficiencies in inventory management. This method ensures the focus remains on current trends that directly impact business outcomes.

b) **Root Cause Analysis**: Root cause analysis will pinpoint the underlying factors contributing to the stock-turnover imbalance. This includes exploring inefficiencies in stock allocation, demand fluctuations across product categories, and potential shortcomings in sales strategies. Techniques like the 5 Whys method and Fishbone Diagram analysis will systematically identify and address these issues.

2) Intended Data Collection

a) Stock Data: Data on inventory purchases, stock levels, and consumption patterns across all outlets over the past six months will be collected. This dataset will help measure the effectiveness of stock utilization and identify discrepancies in inventory allocation.

b) Sales Data: Turnover data for each outlet will be analyzed to determine revenue performance relative to stock investments. This will provide insights into how well stock is translating into revenue.

c)Transaction Records : Transactional data from **Technosis software** will be analyzed to track product flow—purchases, sales, and inventory movement. This will ensure accurate assessment and efficient inventory management.

2) Analysis Tools:

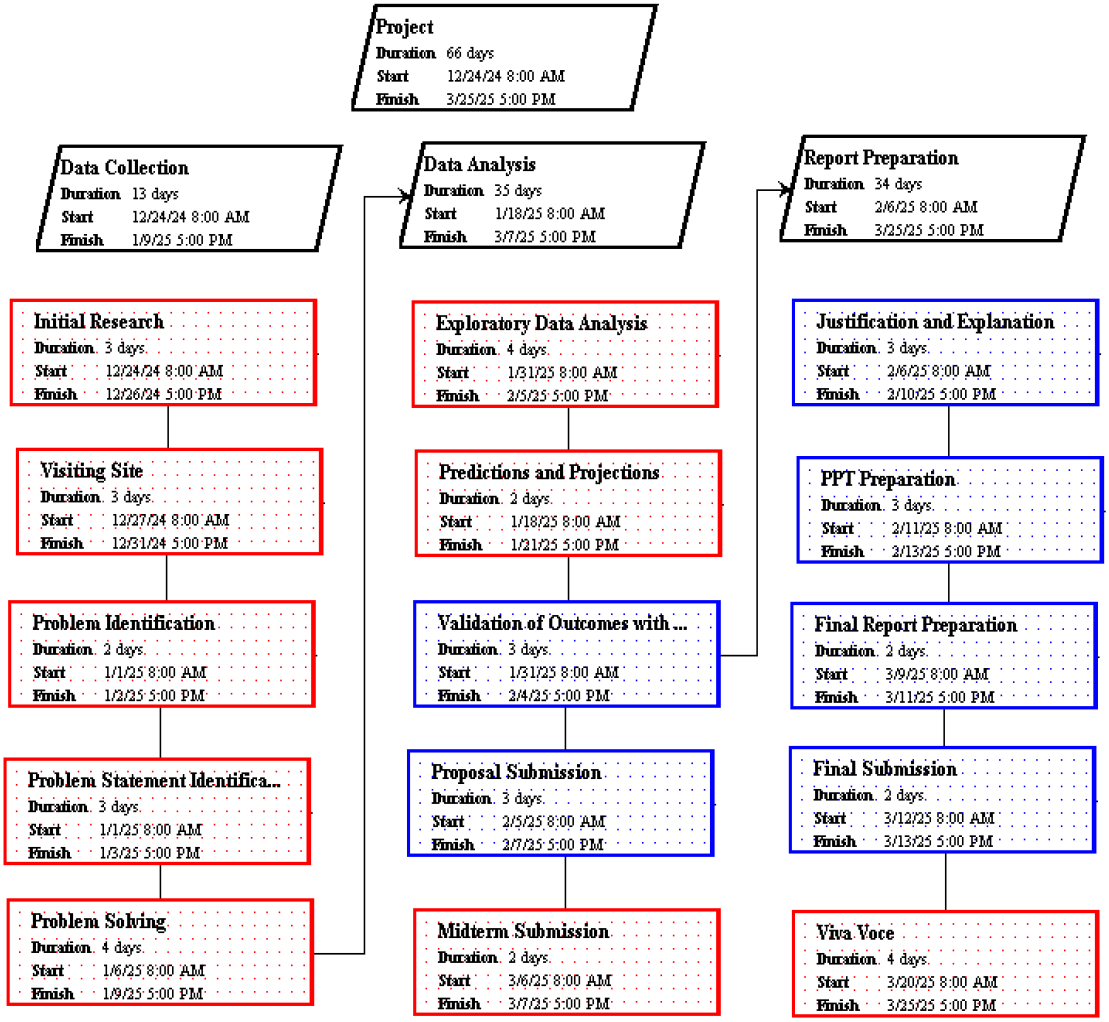
a) **Statistical Analysis:** Tools such as correlation and regression analysis will be used to evaluate the relationship between stock investments and turnover growth. Specific techniques, including multiple linear regression and Pearson correlation, will help quantify these relationships and highlight inefficiencies

b) **Data Visualization**: Visualization platforms like Tableau or Power BI will be utilized to create detailed charts and dashboards. These tools will present stock-turnover trends, highlighting areas of concern in an accessible and visually engaging manner.

c) **Predictive Modelling**: Advanced machine learning algorithms, including Random Forest Regression and ARIMA (AutoRegressive Integrated Moving Average), will be implemented to forecast turnover based on stock levels. These predictive models will help plan inventory and sales strategies by providing data-driven insights into future trends

6) Expected Timeline

WBS -> Work breakdown structure



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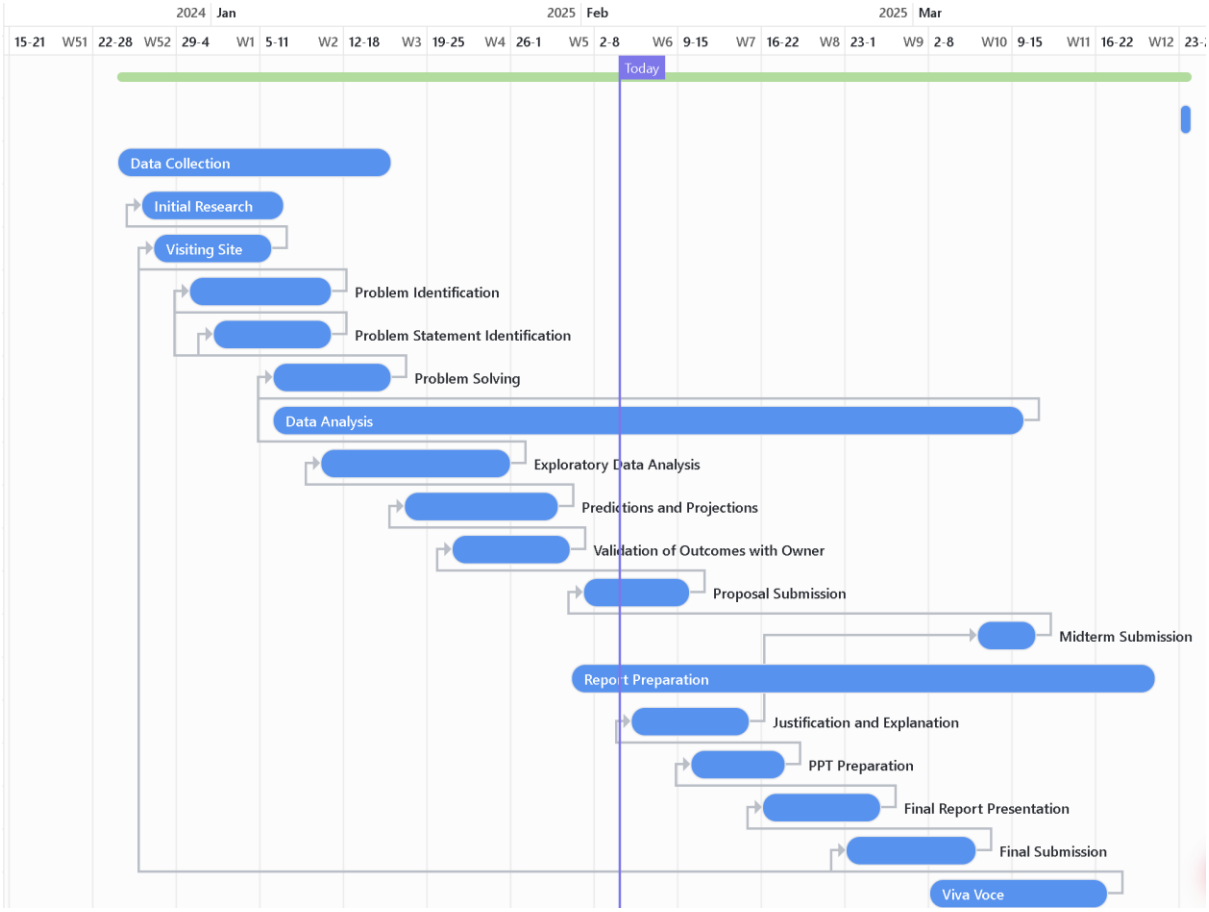

7) Expected Outcome (Briefly explain in 150-200 words)

The outcome of this project will be a more streamlined and efficient inventory management and sales strategy for **Kirtan Hardware**, ensuring alignment between stock investments and actual turnover. By identifying and addressing the root causes of the stock-turnover disparity, the company will achieve optimal stock utilization, reducing instances of unconsumed inventory and ensuring better cash flow management

This project will also enable **Kirtan Hardware** to forecast demand more accurately through data-driven insights and predictive models. Seasonal trends and product demand fluctuations will be identified, helping the company to adjust stock levels dynamically and meet customer requirements without overstocking or understocking. Improved inventory planning will reduce operational inefficiencies, leading to cost savings and enhanced profitability.

Additionally, the analysis of sales performance will provide actionable recommendations for improving sales strategies. By correlating inventory data with sales trends, the company can identify high-performing outlets and products, replicating their success across other outlets. The integration of tools like regression analysis and visualization platforms will facilitate ongoing monitoring, ensuring sustained growth.

Overall, this project will position Kirtan Hardware for long-term scalability, improving inventory turnover, enhancing customer satisfaction, and maintaining its competitive edge in the South Indian wholesale hardware market.