Sales Optimization and Inventory Insights in a B2C Clothing Retail Business: A Data-Driven Approach

A Proposal report for the BDM capstone Project

Submitted by :-

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Declaration Statement :

I am working on a Project titled **" Sales Optimization and Inventory Insights in a B2C Clothing Retail Business: A Data-Driven Approach "**. I extend my appreciation to **TIWARI VASTRALAYA**, 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)**

Guddu Kumar Mishra

DATE:- 11-06-2025

Executive Summary :

This project focuses on **Tiwari Vastralaya**, a family-run retail clothing shop located in **Tinpheria Bazar, Tamkuhi Road, Kushinagar, Uttar Pradesh**. Established over 40 years ago by the **late Shree Raghav Sharan Tiwari**, the store has long served the local community with a wide range of ready-made garments including sarees, suits, lehengas, and bed sheets.

Despite its longstanding presence, the store now faces several operational challenges. These include sluggish sales during non-festival periods, space constraints within the store premises, and limited growth potential due to the dependency on family-run operations and a lack of exposure to modern retail strategies.

To address these issues, the project aims to optimize inventory management by analyzing 12 weeks of detailed sales data across key product categories. By identifying best-selling items, seasonal trends, and underperforming stock, the business can make informed decisions about procurement and display planning. Additionally, recommendations will be made to enhance space utilization, introduce simple, scalable operational systems, and explore home delivery services to compete with modern e-commerce platforms.

The project will leverage tools such as Microsoft Excel, Google Sheets, and basic inventory tracking software, along with customer feedback, to assess and improve store performance. The expected outcomes include:

- More efficient inventory control,
- Smarter space management,
- A foundation for scalable, modern retail operations.

By aligning traditional business values with data-driven insights and practical technology adoption, this project seeks to support Tiwari Vastralaya in staying competitive and sustainable in a changing market.

Organization Background :

Tiwari Vastralaya is a family-run retail clothing and ready-made garments store located in **Tinpheria Bazar, near Tinpheria Railway Station, Tamkuhi Road, Kushinagar – 274409(Uttar Pradesh)**. The shop was established over 40 years ago by the **late Shree Raghav Sharan Tiwari**, and is currently owned and managed by his son, **Mr. Brajesh Tiwari**. The business operates from a space that is closely integrated with the family home and primarily serves the local B2C market, offering a curated selection of sarees, suits, lehengas, and bed sheets.

Over the years, Tiwari Vastralaya has built a strong presence in the area, attracting a loyal customer base largely made up of residents from nearby villages and semi-urban localities. The store's longevity and reputation are rooted in its personal service, consistent pricing, and wide variety of clothing that caters to both everyday needs and special occasions.

Mr. Brajesh Tiwari, a well-educated and disciplined entrepreneur, is deeply committed to the day-to-day operations of the shop. With support from his family, he is actively working to modernize the business while preserving its traditional strengths. His current focus lies in resolving key operational challenges, such as:

- Streamlining inventory management,
- Optimizing product assortment based on customer preferences (e.g., fabric type, color, price range),
- Analyzing seasonal sales patterns, and
- Enhancing customer retention and satisfaction.

As the surrounding market continues to grow and new competitors enter the space, Mr. Brajesh Tiwari is also exploring ways to make the store more competitive, including data-driven decision-making and better use of technology. This project supports those goals by providing actionable insights and recommendations for sustainable growth and improved operational efficiency.

Problem Statement :

Identified Business Problems From The Discussion:

1. **Low Sales During Non-Festive Periods:** Sales drop significantly outside of festival seasons, making revenue inconsistent and harder to forecast.
2. **Space Constraints:** Limited physical space restricts inventory storage, efficient product display, and overall store organization.
3. **Limited Business Scalability:** Manual operations and lack of digital systems hinder growth, efficiency, and the ability to compete with modern retailers.

Problem Background :

Despite its long-standing presence and strong community ties, Tiwari Vastralaya faces several key operational and growth-related challenges:

1. **Low Sales During Non-Festive Periods:** The shop experiences a noticeable drop in sales during non-occasion weeks. This inconsistency makes it difficult to forecast demand, maintain optimal stock levels, and avoid overstocking or understocking. As a result, there is potential for missed sales opportunities and inventory stagnation, especially for seasonal and trend-sensitive items.

1. **Space Constraints:** The store operates in a limited physical space that is closely integrated with the family residence. This restricts the ability to expand the product range, efficiently organize inventory, and clearly identify slow-moving items. The lack of structured storage space also contributes to operational inefficiencies.
2. **Limited Business Scalability:** The business is heavily reliant on manual, family-run operations with no formal system in place for tracking inventory, sales performance, or customer preferences. This lack of automation and digital tools hampers the store's ability to scale, adapt to market trends, or compete with modern retail outlets and e-commerce platforms.

These issues collectively impact the store's profitability, customer retention, and long-term growth potential. Addressing them requires a data-driven approach to inventory management, space optimization, and the gradual adoption of modern retail practices.

Problem Solving Approach :

To tackle the key challenges faced by **Tiwari Vastralaya**, a thoughtful combination of data collection and hands-on observation has been adopted. The primary focus of this approach is to understand patterns in customer demand, product performance, and operational efficiency, all while keeping the local business context in mind.

A core component of the approach involves a close examination of weekly and monthly sales data. By identifying which products sell the most and when demand tends to spike—especially around festivals—the business aims to better align stock levels with actual customer needs. This will help reduce wastage, avoid understocking, and ensure that popular products are readily available when needed.

Pricing and profit margins will also be studied in detail. Analyzing the difference between cost and selling prices will help prioritize high-margin products and ensure that pricing remains competitive without compromising profitability. At the same time, inventory movement patterns will be tracked to understand how quickly items are sold and restocked. This will help highlight slow-moving or stagnant inventory that could occupy valuable shelf space.

In addition to numerical analysis, the day-to-day processes within the store have been observed. From how stock is received to how it is stored and displayed, these workflows are being mapped to identify operational inefficiencies and potential areas for improvement. This is especially important given the store's space limitations, as it operates partially from within a residential setting.

To understand the store's position in the local market, initial competitor benchmarking has been conducted. By comparing product variety, pricing, and services with nearby stores, the project aims to identify practical improvements—such as offering home delivery—to help Tiwari Vastralaya stay competitive in a growing marketplace.

In terms of data collection, most insights have been gathered through **in-person discussions** with the store owner and shared digitally **via phone and messaging apps**. These records have been manually compiled and organized in Microsoft Excel for structured analysis.

The datasets include weekly and monthly sales for core categories such as sarees, suits, lehengas, and bed sheets. Additional inventory and purchase data have also been recorded to understand supplier patterns, restocking frequency, and shelf life. Informal customer feedback has helped uncover preferences related to product type, color, and pricing.

For analysis, tools like **Microsoft Excel** and **Google Sheets** will be used extensively to organize, visualize, and derive trends from the collected data using pivot tables, charts, and filters. If feasible in the future, simple inventory tools and dashboards using **Tableau** or **Power BI** may be considered to support interactive and real-time insights.

Ultimately, the goal of this problem-solving approach is to build a stronger understanding of the shop's operations, identify areas of improvement, and implement data-backed strategies to improve inventory control, pricing, and service delivery. This is expected to enhance profitability and make the business more agile and scalable in the long run.

Expected Timeline :

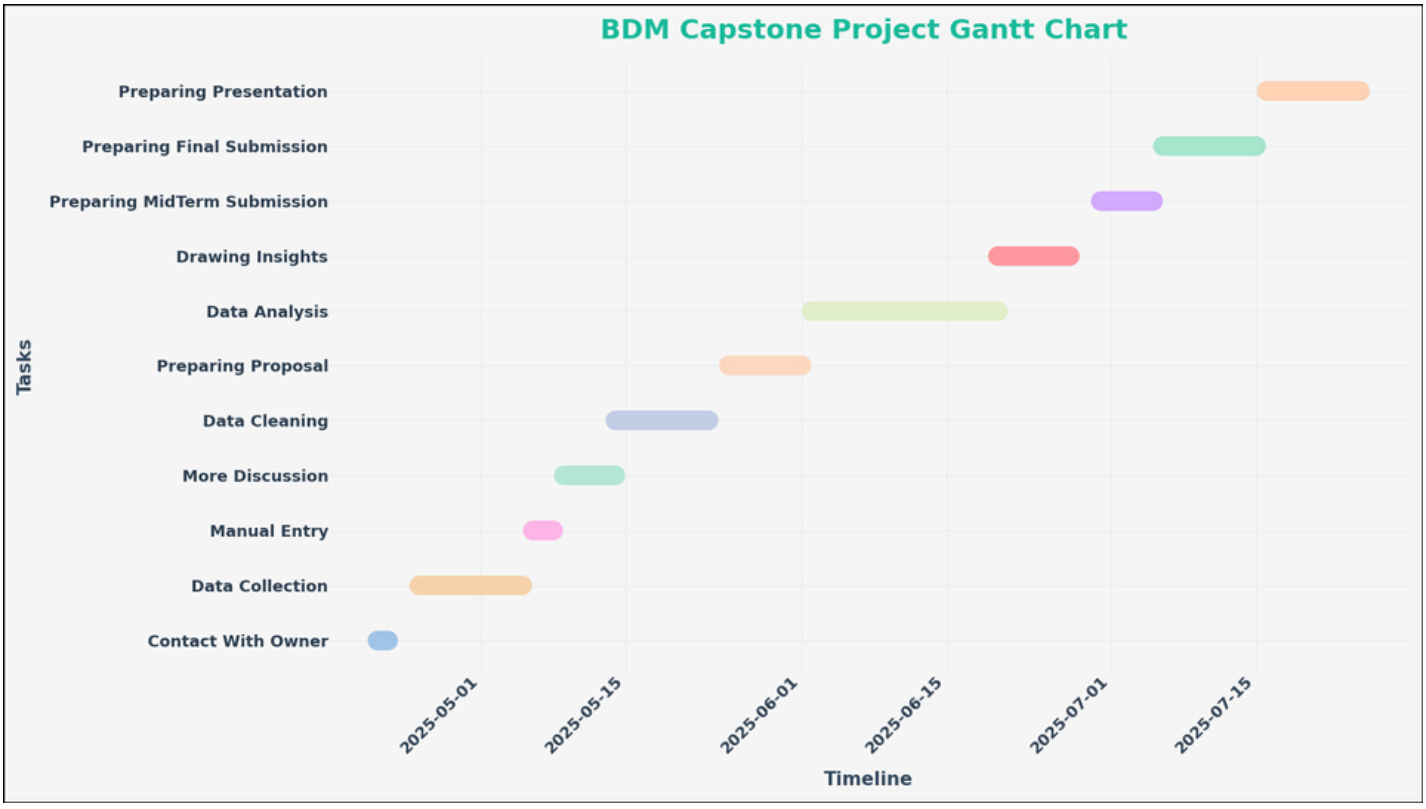

Image 1 : Gantt Chart

Image 2 : Expected Timeline Table

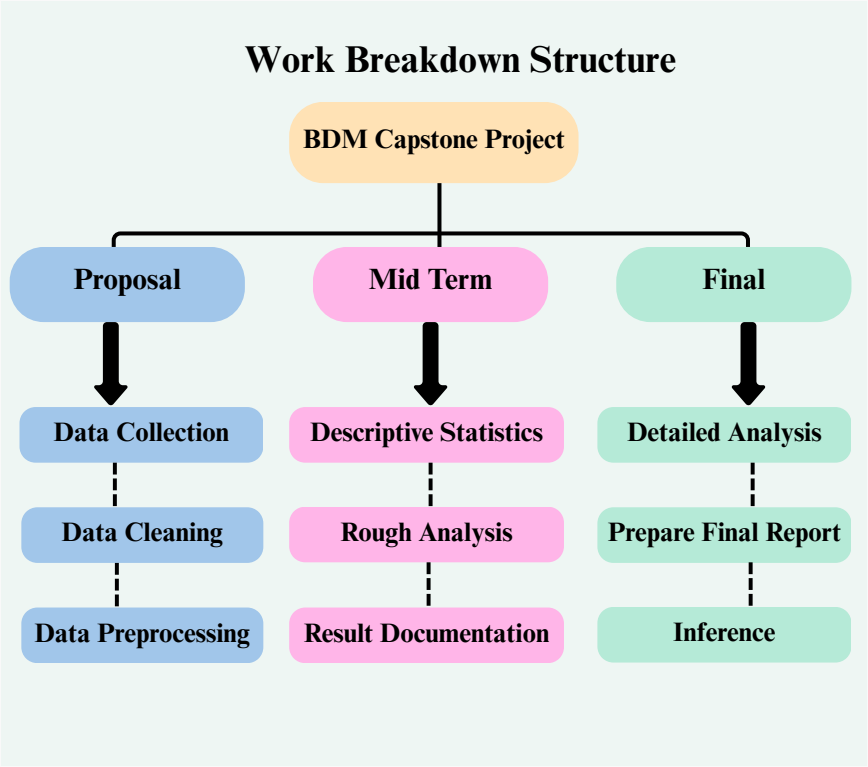

Image 3 : Work Breakdown structure

Expected Outcomes :

Improved Inventory Management And Space Optimization Strategy

A better understanding of weekly product movement will allow the store to maintain optimal stock levels, reduce overstocking, and minimize the risk of stockouts—especially during peak demand periods like festivals.

Based on inventory flow and stock turnover, recommendations will be provided to make better use of limited physical space, reducing clutter and improving product visibility.

Identification of High and Low Performing Products

The sales analysis will help clearly highlight which products consistently perform well and which are slow-moving, enabling more focused purchasing and shelf planning.

Festival and Season-Based Demand Forecasting

By tracking weekly trends, the store will gain insights into how demand shifts during festival weeks (like Holi, Rama Navami, etc.), which will support more accurate and profitable stock planning in the future.

Actionable Recommendations for Growth

The final report will outline low-cost but high-impact solutions such as adjusting pricing strategies, enhancing customer service, and potentially exploring home delivery options to stay competitive with modern retailers.