Analytical Study of an Online Commerce Brand

A Proposal report for the BDM capstone Project

Submitted by

Name: Arnav Mehta

Roll number:21f3002647

IITM Online BS Degree Program,

Indian Institute of Technology, Madras, Chennai

Tamil Nadu, India, 600036

Contents

Declaration Statement

I am working on a Project titled “Analytical Study of a B2C e-commerce clothing brand business”. I extend my appreciation to Ms. Babita Singh, for providing the necessary resources that enabled me to conduct my project.

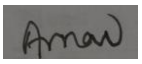
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

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: Arnav Mehta

Date: May 12, 2025

1 Executive Summary

This project focuses on addressing two critical operational and financial challenges faced by *Molcha*, a growing eCommerce brand specializing in handcrafted and lifestyle products: high product return rates and inefficient inventory restocking.

As Molcha scales, these issues have begun to directly impact profitability, customer satisfaction, and supply chain efficiency. The high return rate—encompassing both customer returns and Return-to-Origin (RTO) cases—not only strains logistics but also raises concerns around product quality, listing accuracy, and customer expectations. Simultaneously, the lack of a data-driven approach to inventory management has led to frequent overstocking of low-demand items and understocking of high-demand SKUs, resulting in increased holding costs and lost revenue opportunities.

To tackle these challenges, the project will undertake two focused analytical tracks:

1. **Return Rate Analysis**: This will involve examining return patterns across SKUs, logistics partners, and product categories to identify key return drivers. Insights will inform strategies such as improved product listings, stricter quality control, and customer education to reduce return volumes.

2. **Inventory Optimization**: Leveraging sales data and trend analysis, this track aims to identify high-performing products and establish a predictive model for smarter restocking decisions—ensuring better alignment of inventory with actual market demand.

By applying a structured, data-driven approach, the project seeks to enhance Molcha's operational efficiency and profitability while supporting its continued growth in the competitive eCommerce landscape

2 Organisation Background

Business Name: Molcha by Babita Singh
Address:
Owner's Name: Babita Singh

Molcha by Babita Singh is a contemporary Indian eCommerce brand rooted in traditional craftsmanship, with a steadily growing presence in the ethnic fashion market. Operating primarily online through platforms such as Ajio, Limeroad, and JioMart, the brand serves both B2B and B2C segments—catering to individual buyers looking for artisanal, handloom-based apparel as well as retail partners seeking curated ethnic collections. Founded by Babita Singh, who transitioned from a strategic leadership role in the eCommerce SaaS sector to building her own fashion label, Molcha blends modern business acumen with a deep appreciation for Indian textile arts. The brand specializes in high-quality handcrafted products like Madhubani printed dupattas, silk sarees, and cotton apparel, all emphasizing sustainability and cultural heritage. Initially a passion project, Molcha has evolved into a structured business with a loyal customer base and strong supplier relationships. Babita's family background and professional expertise contribute to the brand's steady growth. While Babita spearheads Molcha, her entrepreneurial drive is supported by a network of artisans and production partners across India. The brand's consistent emphasis on authenticity and quality has helped establish a reliable reputation in the increasingly competitive ethnic wear segment.

3 Problem Statement

3.1 One of the primary concerns is the **high return and RTO (Return to Origin) and RT (Return) rates**, which lead to increased logistics costs, blocked working capital, and reduced net margins. These returns may stem from mismatched product expectations, sizing issues, delivery failures, or inadequate product descriptions.

3.2 The business lacks a **data-driven approach to identifying its best-selling products**, which makes inventory planning suboptimal. This results in either overstocking of slow-moving SKUs or understocking of high-demand items—leading to missed sales opportunities and inventory holding costs.

4 Background of the Problem

The core challenges faced by **Molcha by Babita Singh** arise from the nature of operating in the competitive and logistics-heavy eCommerce fashion space. One of the biggest hurdles is managing high **product return rates and RTO (Return to Origin)**. These not only inflate shipping and handling costs but also result in inventory blockages and margin erosion. Despite offering quality ethnic wear, many returns stem from issues such as inaccurate sizing, unmet product expectations, delivery failures, and lack of detailed product descriptions.

Additionally, the absence of a structured system to **track and analyze product-wise performance** impacts the brand's ability to forecast demand accurately. This often leads to **inefficient inventory planning**, with slow-moving items taking up space and capital, while high-demand SKUs may run out of stock, causing lost sales opportunities.

Another underlying issue is the lack of comprehensive data analysis to understand the **drivers behind returns**, such as specific SKUs, regions, courier partners, or customer segments. Without such insights, implementing targeted measures like improving listings, running quality checks, or refining logistics strategies becomes difficult.

In summary, the problems Molcha faces are rooted in the **lack of return behavior analytics and product performance visibility**, leading to challenges in inventory optimization and profitability. Addressing these issues is crucial for achieving operational efficiency, reducing return rates, and enhancing customer satisfaction.

5 Problem Solving Approach

5a. Details About the Intended Data Collection with Justification:

Sales and Transaction Data: Collecting data on past sales, including product IDs, cost prices, selling prices, quantities sold, and returns, will be crucial for financial analysis and developing a pricing strategy that minimizes returns while optimizing margins.

Return and RTO Data: To better understand the reasons for returns and identify patterns, it is necessary to gather detailed data on returns, including product type, size issues, customer location, and the reasons for return. This will be used to identify common trends and recommend solutions.

Customer Feedback and Reviews: Gathering qualitative data from customer reviews, particularly related to sizing, product quality, and delivery, will provide valuable insights into recurring issues. This will help improve product listings and descriptions.

Focusing on key SKUs that generate the most returns or sales will streamline data collection, ensuring a manageable yet representative sample for analysis. Key variables such as cost price, selling price, **Justification**:

return reasons, and customer demographics will provide essential data for understanding return trends and optimizing inventory levels.

By collecting detailed return data alongside transactional information, we can develop a more precise strategy to address return rates, improve product offerings, and optimize the overall customer experience.

5b. Details about the methods used with Justification:

Given the unique challenges faced by **Molcha by Babita Singh**, a combination of quantitative and qualitative methods is essential for identifying the core issues and proposing actionable solutions.

Quantitative Methods:

- **Time-Series Analysis**: Since eCommerce sales exhibit seasonal trends and fluctuations, time-series analysis will be used to track the performance of various SKUs over time. This will help identify patterns in returns, sales spikes, and the impact of specific marketing campaigns, allowing for more accurate inventory and pricing decisions.

- **Statistical Computation**: A variety of statistical techniques will be employed to evaluate return rates, product performance, and customer segmentation. Methods such as regression analysis will be used to explore the relationship between return rates and factors like product type, price point, and logistics provider. Additionally, the Pareto Principle will be applied to identify the most significant contributors to returns.

Qualitative Methods:

- **Customer and Stakeholder Conversations**: Engaging directly with customers and the business owner, Babita Singh, will provide qualitative insights into the reasons behind returns, common customer complaints, and feedback on product descriptions. This will help identify areas for improvement and allow for better alignment of product offerings with customer expectations.

- **Benchmarking**: I plan to conduct a comparison with similar eCommerce fashion brands, specifically those specializing in ethnic wear. This will help identify best practices in return reduction strategies, inventory management, and pricing structures, which Molcha can adopt to improve its operations.

5c. Analysis Tools and Justification

Analysis Tools:

- **Google Sheets and Excel**: These will be used for initial data cleaning, processing, and basic visualizations such as pie charts and bar graphs. They will also serve as a platform for preliminary financial calculations and trend analysis.

- **Python with Pandas and Matplotlib/Seaborn**: For more advanced data analysis, Python will be employed to explore the dataset in greater depth. Pandas will be used to handle larger

datasets and perform complex manipulations, while Matplotlib and Seaborn will be used to create more sophisticated visualizations, including heatmaps, scatter plots, and time-series analysis.

Justification:

- **Google Sheets and Excel**: These tools are user-friendly, enabling efficient preliminary analysis and visualization, which is crucial in the early stages of the project. They are well-suited for smaller datasets and quick calculations.

- **Python**: Python will provide the flexibility to conduct more complex analyses, including regression modeling and advanced visualizations. Its powerful libraries will enhance the ability to uncover deeper insights from the dataset, allowing for a more thorough understanding of the issues affecting Molcha's return rates and inventory management.

6 Expected Timeline

1. **Data Collection**: Entire month of April
2. **Data Cleaning and Processing**: May 1st to May 14th (2nd week)
3. **Proposal Preparation**: May 15th to May 21st (3rd week)
4. **Data Analysis**: May 25th to June 23rd (last week of May to almost last week of June)
5. **Conclusive Recommendations**: June 24th to June 30th

6.1 Gantt chart

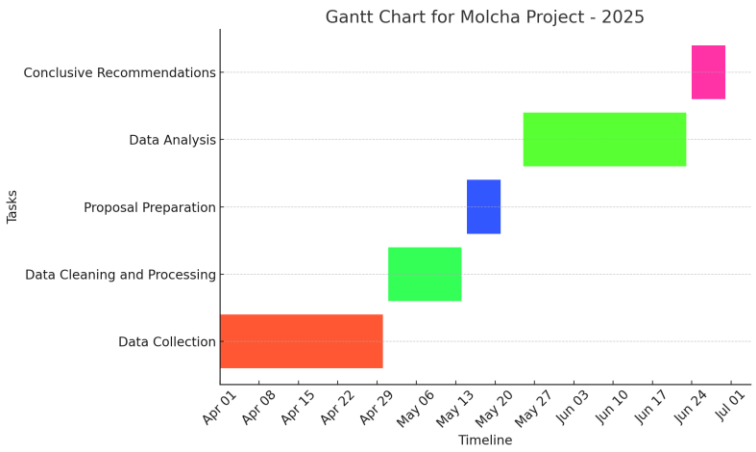


Figure 1 Expected timeline for completion of project.

7 Expected Outcome

- **Margin Optimization and Pricing Strategy**: By analyzing past transaction and return data, we aim to establish a clear and effective pricing strategy that balances cost and selling price while reducing the occurrence of returns. This will help identify the most profitable price points for different product categories, ensuring that Molcha maintains healthy profit margins.

- **Return Rate Reduction**: Through data-driven insights, we aim to identify the key drivers of high return rates, such as product quality, sizing issues, and logistical inefficiencies. This will lead to actionable strategies for reducing returns, improving product descriptions, and enhancing customer satisfaction.

- **Inventory Management Optimization**: By analyzing sales patterns and return behaviors, we will develop a more efficient inventory management system. This will help Molcha stock the right amount of high-demand products and avoid overstocking items that have a higher return rate, ultimately ensuring a better allocation of resources and capital.

- **Credit and Payment Strategy**: Implementing a data-driven approach to manage customer credit and outstanding payments will help Molcha set clear criteria for extending credit. This will minimize the risk of bad debts and improve cash flow by ensuring that credit policies align with the business's financial goals.

- **Financial Health and Strategic Decision-Making**: The comprehensive analysis of key financial metrics, including costs, sales, returns, and credit relationships, will provide the business owner with a clearer understanding of Molcha's financial health. This will support better decision-making regarding pricing, inventory, and credit management, contributing to sustainable growth and profitability.