

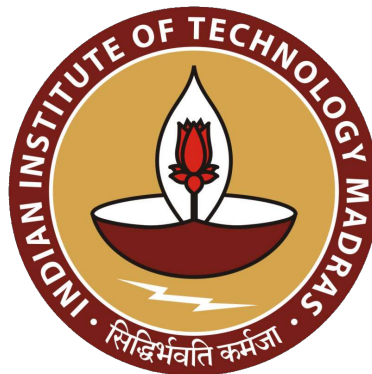
# **Addressing Modern Challenges in the Electronics Retail Business (B2C Business Model).**

**A Proposal report for the BDM capstone Project**

**Submitted by**

**Name: Harsh Jayswal**

**Roll number: 22f3002188**



**IITM Online BS Degree Program,  
Indian Institute of Technology, Madras, Chennai  
Tamil Nadu, India, 600036**

# Contents

Executive Summary	1
Organization Background	2
Problem Statement	3
Problem Background	4
Problem Solving Approach	5
Expected Timelines	7
Expected Outcomes	8

## Declaration

I am currently working on a project titled **Addressing Modern Challenges in the Electronics Retail Business (B2C)**. I would like to express my gratitude to **Sanchar Zone** owner, **Pankaj Choudhary**, for providing the necessary support and resources for this project.

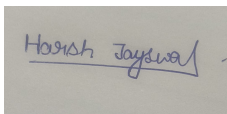
The data presented and evaluated in this report are accurate and precise to the extent of my knowledge and ability.

Data were gathered from primary sources and carefully analyzed for reliability.

Furthermore, I declare that all procedures employed for data collection and analysis have been explained in detail in this report.

The results and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures. I am committed to adhering to the principles of academic honesty and integrity. I am open to additional examination or validation of the data contained in this project report.

I understand that all recommendations made in this project report are within the context of academic projects 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.

A rectangular box containing a handwritten signature in blue ink that reads "Harsh Jayswal".

**Harsh Jayswal**

March 2, 2025

# Executive Summary

In this project, I primarily focus on providing solutions to the challenges faced by an electronics store, **Sanchar Zone**, located in Pirpainti, Bihar, that specializes in mobile, electronic, and computer items.

With over 20 years of experience, the store offers various products, including mobile phones and accessories such as headphones, power banks, chargers, and batteries. Additionally, the shop provides electronic and computer items such as printers, cartridges, ink, mouse, keyboards, hard drives, and more. The business operates predominantly under a B2C model, catering to the local community and neighboring areas.

This proposal addresses the challenges faced in the electronics sector, particularly by small businesses, due to the growing dominance of online shopping platforms. These platforms offer aggressive pricing, cashback offers, and convenience, significantly impacting the sustainability of traditional brick-and-mortar stores.

The key challenges Sanchar Zone faces include difficulties in maintaining inventory, particularly identifying fast-selling models in the local area and ensuring the availability of trending products, competitive pricing, and profitability, to remain competitive against online platforms while ensuring profitability. Warranty disputes occur because of frequent misunderstandings with customers regarding warranty terms.

My proposed solution takes a data-driven approach to tackle these challenges, incorporating inventory management, dynamic pricing, and a structured warranty resolution strategy. Additionally, I utilize a combination of data analytics, time series forecasting, and various analytical tools. Google Sheets and Excel are employed for data entry, cleaning, and fundamental trend identification, while Python and its libraries are leveraged for data analysis, visualization, and predictive modeling.

These measures will not only resolve the current challenges but will also help in maximizing profits and ensuring long-term sustainability.

# Organization Background

The name of the shop is **SANCHAR ZONE**, and the owner's name is **Pankaj Choudhary**, a well-established business with more than 20 years in this sector, located in Pirpainti, Bihar. The store offers various products, including mobile phones and accessories such as headphones, power banks, chargers, and batteries. In addition, it provides electronic and computer items such as printers, cartridges, ink, mouse, keyboards, and hard drives. The shop sells approximately 40-50 SKUs per day, and the operating time of the shop is from 8 a.m. to 9 p.m.

Initially, the business started as a PCO and a recharge store. In 2005, it transformed into a mobile store, mainly focusing on selling mobile phones and printing materials. Meanwhile, it expanded its product range to include accessories such as headphones, power banks, chargers, and computer-related items, as well as more accessories for printing materials.

At the initial time, the locality was not well developed. However, with the rise in the market, having a coal depot and NTPC facilities in the area, the market experienced significant growth as workers in these industries boosted the local economy. This development helped Sanchar Zone grow and stabilize its business further. In response to the increased demand, the store diversified its offerings to include additional equipment and accessories.

The store is now in a busy area with a lot of development. It's on a main road that connects different neighborhoods, bringing in a variety of customers from nearby places.

Sanchar Zone has two experienced professionals who have a vast knowledge of technology and assist in running the shop efficiently. In addition, the owner's wife plays an important role in managing the shop's accounting and billing processes.

# Problem Statement

However, the business suffers from the following key problems:

- **Inventory Management:** As of now, there is no inventory management for the Sanchar Zone, which leads to issues such as nonidentification of fast and trending products in the market and their stock availability. Also, keeping the record for the stock of newly launched products.
- **Dynamic Pricing:** Sanchar Zone faces significant challenges to maintain competitive pricing while ensuring profitability in the dynamic electronics market. The rise of online platforms offering frequent discounts, cashback, and lower prices has made the competition even tougher. The static pricing strategies currently in place at Sanchar Zone do not respond to various issues.
- **Warranty disputes:** Sanchar Zone faces frequent warranty disputes due to unclear warranty terms and conditions. Lack of proper documentation and miscommunication during purchase led to customer dissatisfaction.

# Problem Background

Sanchar Zone faces several challenges that are common in the competitive electronics market. First, the store does not have an inventory management system. This makes it difficult to track which products are selling quickly or trending in the local market. Without proper records, they often face delays in stocking new products, leading to unhappy customers and losing out to competitors. Sometimes, they overstock slow-moving items or run out of trending ones, causing further problems.

Second, the store uses static pricing, which means they don't adjust their prices based on market trends or competitor discounts. With online platforms offering frequent discounts and cashback deals, it's hard for Sanchar Zone to keep up. This results in fewer opportunities to attract customers and maximize profits.

Lastly, warranty disputes are a common issue. The shop does not have a clear system to explain warranty terms to customers, and there is no proper documentation. This leads to confusion, disagreements, and dissatisfaction among customers.

To sum up, Sanchar Zone's main problems are the lack of a proper inventory system, outdated pricing methods, and unclear warranty processes. Solving these challenges is essential for improving your business and staying competitive in the market.

# Problem-Solving Approach

- **Details about the Methods Used with Justification:**

The challenges faced by Sanchar Zone require a combination of data-driven methods and qualitative analysis to address inventory management, dynamic pricing, and warranty disputes.

## **Quantitative Methods**

Like demand forecasting, i.e., we will use historical sales data to identify trends and predict future demand for fast-selling and trending products, which will help ensure stock availability and reduce overstocking or stockouts. For dynamic pricing, we will try to implement pricing models that adjust product prices based on competitor trends, demand fluctuations, and profit margin targets that will enhance profitability while maintaining competitiveness in the market.

## **Qualitative Methods**

From a period, we will do customer feedback analysis by engaging customers to understand their expectations regarding product availability, pricing, and warranty processes. Also collaborate with the suppliers to negotiate faster delivery of new and trending products, ensuring timely restocking of the new products.

- **Details about the Intended Data Collection with Justification**

## **Sales Transaction Data:**

I will collect past sales data, including product type, quantity sold, sales date, and selling price. This data will be crucial for demand forecasting and identifying high-demand products. Along with that, I will try to collect the competitor pricing data both online and in local stores, which will help us to develop dynamic pricing strategies.

For inventory, we will maintain records of current stock levels, restocking timelines, and newly launched products, which will help optimize stock management and reduce delays.



For warranty claim data, we will collect data on warranty-related issues, including product type, claim date, and resolution time, that will help identify patterns in warranty-related issues for the products.

### **Justification**

Focusing on sales transaction data will provide insights into product demand and customer preferences, enabling targeted inventory management.

Competitive pricing data will ensure the shop remains competitive while maintaining profitability. Inventory records will allow for better stock tracking and timely restocking of popular items.

Warranty claim data helps in identifying recurring issues and improving customer satisfaction by streamlining warranty processes.

### ▪ **Analysis Tools and Justification Analysis Tools**

Google Sheets and Excel for data entry, cleaning, and basic analysis, such as trend identification and inventory tracking. Creating dashboards to visualize sales trends, stock levels, and pricing comparisons.

Python with Libraries (Pandas, Matplotlib, and Seaborn) for advanced data manipulation, demand forecasting, and creating visualizations like sales heatmaps, price elasticity graphs, and warranty claim trends.

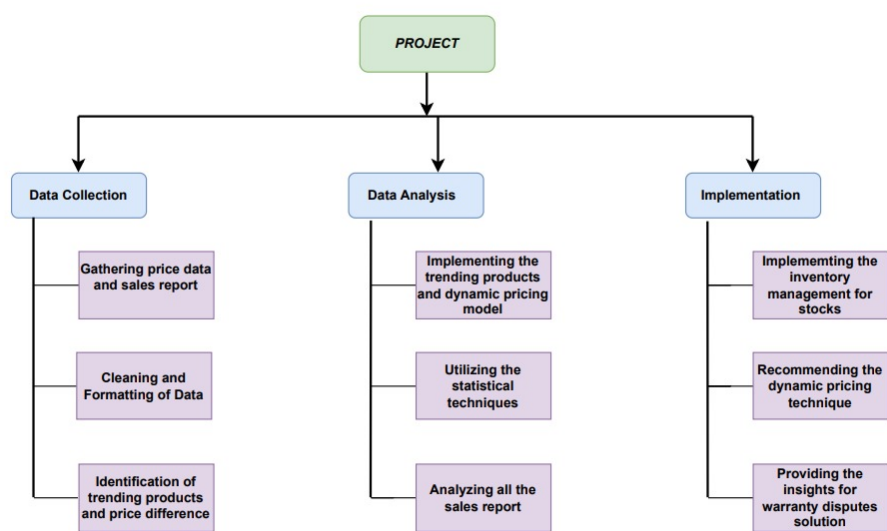
Based on this, we can monitor sales performance, inventory health, and pricing impact.

### **Justification**

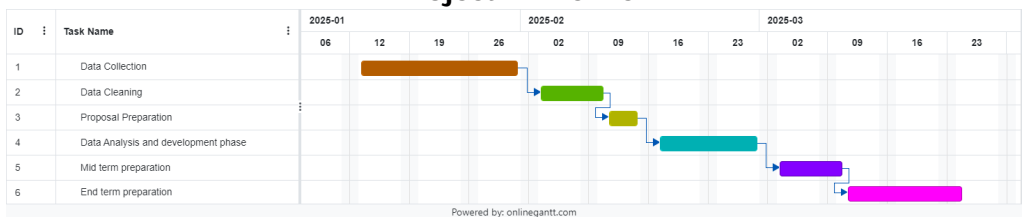
Google Sheets and Excel are user-friendly and efficient for fundamental data processing and quick analysis. Python provides powerful tools for advanced analytics, enabling in-depth insights and robust forecasting models.

# Expected Timelines

## Project Breakdown Structure



## Project Timeline



# Expected Outcomes

The expected outcome of this project is to significantly improve the operational efficiency and profitability of Sanchar Zone.

- This includes implementing accurate inventory management techniques, optimizing pricing strategies using dynamic pricing techniques, and providing actionable insights for resolving warranty disputes.
- By data collection and analysis, the project aims to ensure better stock availability, competitive pricing, and enhanced customer satisfaction.
- The ultimate goal is to establish a data-driven operational framework that supports sustainable growth and a seamless shopping experience.