

**Optimizing Inventory, Data Management and
Branding Strategy at Music & Music**

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Declaration Statement

I am working on a Project Title "Optimizing Inventory, Data Management and Branding Strategy at Music & Music". I extend my appreciation to Music & Music, 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: **(Digital Signature)**

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Date: 12/05/2025

Optimizing Inventory, Data Management and Branding Strategy at Music & Music

Executive Summary:

Music & Music, established in 1990 by Mr. Rajendra Prajapati, is a retail shop with a long local presence. It began as a cassette duplication service and now offers packaged food products, snacks, and mobile recharge services.

The shop is currently facing significant operational challenges that are affecting its sales and revenue. These include inefficient record keeping methods as well as management of inventory, especially during summer season when the sales of soft drinks and ice-creams spike. Furthermore, the shop also faces supply chain disruptions because of heavy reliance on locally produced packaged snacks. The ban on plastic in Indore also leads to challenges for waste disposal. A weak branding strategy and an unclear service vision have further contributed to declining customer retention.

To address these challenges, the project will develop a digital system that minimizes the need for manual data entry by the shop owner. The project will leverage AI and Machine Learning Techniques to forecast the inventory needs in advance, especially to predict seasonal demand for high-turnover items, such as soft drinks and ice creams, with realistic expectations for accuracy given the available data. Additionally, the project will investigate efficient, sustainable methods for plastic disposal that comply with local regulations. Finally, by analyzing customer data, the project will propose a practical branding strategy that integrates additional services with existing products, providing a differentiated approach to enhance customer retention in the local market.

OrganizationBackground:

- Music & Music, owned by Mr. Rajendra Prajapati, was established in 1990 as a cassette shop offering sales and duplication/recording services, which inspired the shop's name. As cassettes declined, it shifted in 2000 to selling camera accessories and CDs, the supply of which got affected by the 2004 Tsunami.
- Later, the business diversified into electronics like halogen lights, microchips, pen drives, blank CDs, DVDs, and even keypad mobile phones, though these were discontinued by 2008 due to slow sales.
- Between 2009 and 2015, the shop experimented with stationery, mobile recharge services, and expanded offerings such as DTH recharge and accessories. However, a market downturn in 2015 forced inventory cuts after a 50% revenue drop.
- From 2016, Music & Music pivoted to ice cream sales and briefly ventured into PlayStation gaming operating from home itself.
- During COVID-19, it adopted a home-based sales model with safety measures.

This remarkable evolution reflects the shop's resilience. Its journey illustrates a constant adaptation to change. Today, it primarily sells food products and snacks.

Problem Statement

1. Inefficient Record Keeping and Inventory Management

The current manual record-keeping system produces inaccurate sales data and unreliable forecasts, leading to inventory imbalances. This challenge results in stockouts and overstocking.

2. Unsustainable Plastic Disposal Impacting Inventory and Customer Retention

Accumulated plastic waste occupies valuable storage space, and the inability to provide polybags—due to Indore's plastic ban—discourages customer returns.

3. Lack of a Data-Driven Branding Strategy

Without systematic analysis of customer preferences, promotional efforts remain ineffective, resulting in low customer engagement and retention.

Background of the Problem

Despite its long history, Music & Music faces several operational challenges due to outdated management practices. Although the shop has evolved its product offerings to align with current trends, it still relies on manual record-keeping for every transaction. The shopkeeper merely notes down the items sold, even the very small ones, without categorizing them or performing any trend analysis. This approach leads to incomplete sales data, unreliable forecasting, and an inability to generate meaningful insights for inventory planning.

The shop's limited storage space further compounds these issues. During peak summer months, high-demand items like soft drinks and ice creams are forced to be stored in the owner's home, while slow-moving products occupy valuable space until they go out of season. Consequently, poor forecasting combined with restricted storage leads to frequent stock imbalances.

External factors add to the challenge. Supply disruptions from local wholesale suppliers force the shop to replace popular items with lesser-known alternatives. Additionally, the ban on plastics in Indore complicates waste disposal and prevents the provision of polybags—since most customers do not carry their own—further impacting customer retention.

Finally, the shop has experimented with providing various small services along with selling goods but has lacked in a branding strategy that would differentiate it from other shops in the locality. It is still mainly known as a general store to its customers. In the past, the shop has provided services such as camera repair, music upload on microchips, play station gametime for neighboring kids and mobile recharge but has failed in choosing the right service to provide or the right branding strategy to attract a large customer pool.

Problem Solving Approach

The proposed solution will leverage three datasets obtained from the shop—sales data, wholesale purchase data, and shop bills.

The past two years of data will be analyzed to identify fast- and slow-moving items. Various machine learning techniques, including time-series forecasting and regression modeling, will be employed to predict future demand, optimize stock levels, and determine optimal safety stock levels. It is expected that this approach will maximize the efficient use of limited storage space, reduce inventory losses, and cushion the effects of supply chain disruptions.

The goal is to semi-automate the process of record keeping, such as shifting from registers to spreadsheets and developing an optimized system which requires minimal manual input by the shop owner and automatic categorization of items. Further developments can be done by syncing the inventory data to the daily sales and purchase data for real- time analysis.

High and low revenue and sales products will be identified to optimize storage management. Simultaneously, potential new products for introduction and underperforming items for discontinuation will be pinpointed, thereby minimizing reliance on irregular products.

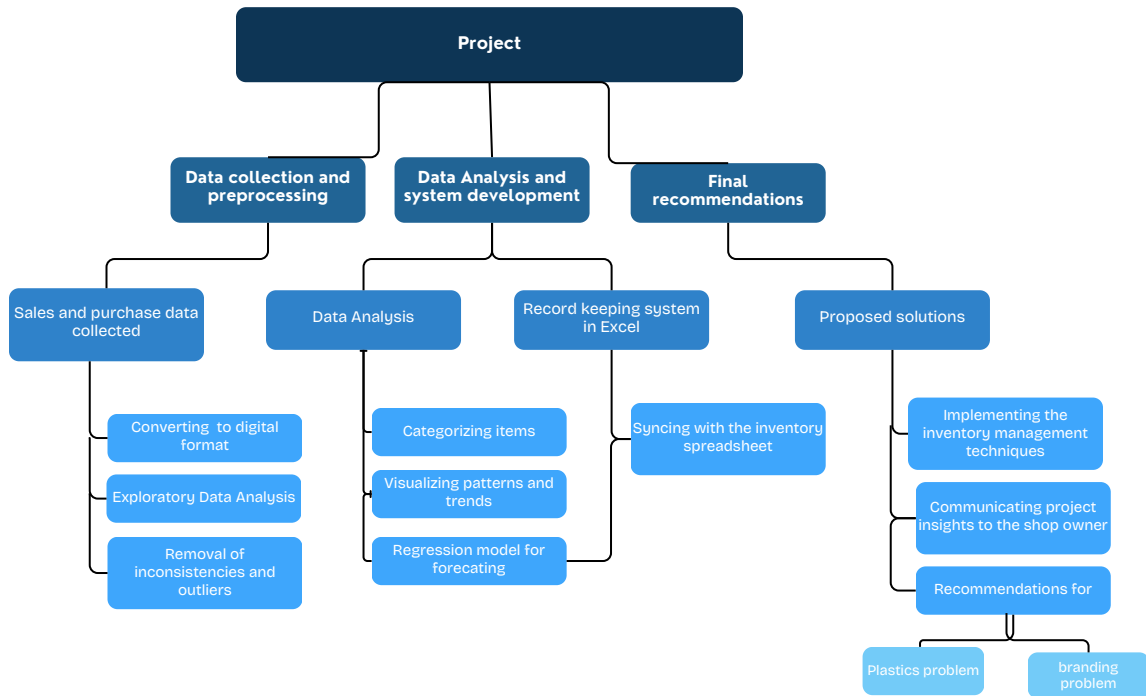
Additionally, eco-friendly plastic disposal methods—such as local recycling partnerships—will be researched and proposed to address customer dissatisfaction due to the lack of polybags, while customer data will be analyzed to identify potential complementary services and a branding strategy for the shop.

Tools to be used :

- Excel will be used for preliminary data analysis and management due to its ease-of-use and wide accessibility, making it ideal for initial data exploration and organization.
- Python libraries—including Pandas and NumPy will be employed for robust data cleaning and preprocessing, allowing for efficient manipulation of data.
- Matplotlib will be utilized for data visualization, providing clear charts that aid in pattern recognition. Machine learning models will be implemented using scikit-learn, which offers a facilities for predictive modelling, essential for demand forecasting and inventory optimization.
- Exploratory data analysis will also incorporate time-series statistical techniques such as ARIMA and SARIMAX, which are justified by their ability to capture trends, seasonal effects, and external influences in the data.

Expected Timeline

Work breakdown structure



Gantt Chart



Expected Outcome of the project

- **Improved Data Accuracy and Forecasting:-** Digital record-keeping and automated data analysis will result in more precise sales tracking, enabling reliable demand forecasting.
- **Optimized Inventory Management:-** Identification of fast- and slow-moving items will facilitate better stock control, reducing overstocking and stockouts while making efficient use of limited storage space.
- **Enhanced Operational Efficiency:** The semi-automated system will minimize manual inputs and preserve data history for long.
- **Data-Driven Branding and Product Strategy:** Strategic service enhancements and product adjustments, leading to increased customer base and retention.