

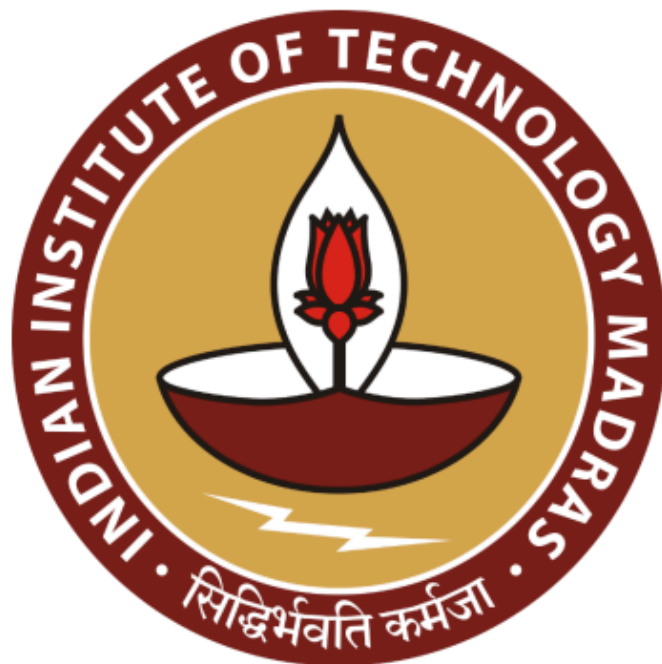
**Analyzing Market Trends, Workforce Dynamics, and Customer Loyalty for
Growth in a Hardware and Electronics Retail Business**

A Proposal report for the BDM capstone Project

Submitted by

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Contents

1 Executive Summary and Title	3
2 Organisation Background	3
3 Problem Statement (Listed as objectives)	4
3.1 Problem statement 1	4
3.2 Problem statement 2	4
3.3 Problem statement 3	4
4 Background of the Problem	4
5 Problem Solving Approach	5
Method Use	5
Data Collection	6
Data Analysis	6
6 Expected Timeline	7
7 Expected Outcome	8

Declaration Statement

I am working on a Project titled “Analyzing Market Trends, Workforce Dynamics, and Customer Loyalty for Growth in a Hardware and Electronics Retail Business”. I extend my appreciation to Mahavir Enterprise, 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.

A handwritten signature in blue ink, appearing to read 'Aaditya', is placed over a rectangular area with a light blue dotted grid background.

Signature of Candidate: (Digital Signature)

Name: Aaditya sawant

Date: 25/12/2024

1 Executive Summary and Title:

The proposal details the venture, Mahavir Enterprise, located in Bhandup, Mumbai (Suburbs). Started by Mr. Vijay Singh Rajput in 2004, it deals with the retail business of hardware and electronic components. Initially operating as a B2B business, the company expanded into the B2C segment in 2021, following the impact of Covid-19. During a meeting with Mr. Vijay, he discussed the challenges his venture is facing.

The most significant issue is the variable demand from customers. The segment is highly dynamic due to rapid technological advancements, with new versions of products being launched in short time spans. However, the previous versions may still be required as components in other appliances, causing business disruptions. In addition to long working hours and extensive labor, the venture struggles to attract a new customer base. Having been in the B2B segment for a long time, it faces difficulties in adapting to the B2C market.

This project is based on primary data collected from financial records, attendance logs, and sales data. The project aims to address these issues by collecting, correcting, and modeling the data, identifying the root causes of the problems, and suggesting alternatives. The analysis will be conducted using MS Excel, Python, Google Sheets, and Matplotlib (a Python library). Solution may involve rotating schedules, hiring a skill database laborer or limited customer loyalty program.

Keeping in mind the problems the proposal is titled as-Analyzing Market Trends, Workforce Dynamics, and Customer Loyalty for Growth in a Hardware and Electronics Retail Business.

2 Organization Background:

The project details Mahavir Enterprise which is a prominent hardware and electronics shop situated in Bhandup, Mumbai. It was established in 2004 by Vijay Singh, who ventured into entrepreneurship after gaining five years of experience in the industry. With a small initial capital, Mr. Singh laid the foundation of the business, focusing on building trust and maintaining strong customer relationships. Over the years, his dedication, coupled with support from business associates and friends, helped the enterprise gain a solid reputation in the local market.

Initially, Mahavir Enterprise operated as a B2B retailer, catering to other businesses in the hardware and electronics sector. However, the company adapted to changing market dynamics during the COVID-19 pandemic by expanding into the offline B2C segment. This strategic move allowed the business to diversify its customer base and enhance its market presence. Today, Mahavir Enterprise is recognized for its quality products and customer-centric approach. With a vision to expand its reach across northeast Mumbai, the company aims to grow its footprint while continuing to deliver exceptional service to its customers.

3 Problem Statement:

The purpose of the study centers on the following problem statements:

3.1. Variable Demand: To analyze the causes and effects of fluctuating demand for hardware and electronic components in a fast-paced, evolving market. Understanding these shifts is essential for adapting to customer needs and market trends.

3.2. Labor Challenges: To examine the impact of extensive working hours and high labor turnover on Mahavir Enterprise, which affects operational efficiency, employee morale, and service quality.

3.3. Customer Loyalty: To evaluate the advantages and disadvantages of customer loyalty, a vital opportunity for the business. This involves understanding how loyalty drives growth while assessing any challenges associated with maintaining it.

These insights aim to enhance the enterprise's strategies for long-term success.

4 Background of the Problem:

The project details about problems faced by Mahavir Enterprise venture-

1. Variable Demand-The venture falls under the electronic and hardware sector which is rapidly changing one due technology and cheap raw materials. But to match certain requirements of older machines or devices, the outdated components are also required. This makes it difficult for managing the inventory and order disruptions. It leads to customer dissatisfaction a number of

times. According to owner this issue is local to the region as it lies in suburban area that has both modern buildings and traditional slum areas.

2. Labour Challenges-It requires extensive training and knowledge to be a part of hardware and electronic ventures. Currently there are only four men under the business working daily for 10-15 hours. Extensive working hours makes them feel tired and sick leading to business disruptions. Unskilled labour and less labour outcome are major problems faced by the sector .

3. Customer Loyalty-Being majorly a B2B the venture is majorly supported by business friends who have developed trust since years. This being a reason of constant financial support but it narrows down the business development in B2C sector. Unable to find new customer support base it gets stuck with the same base, affecting its rise and growth. This issue is kind of this venture specific cause it initiated in B2B sector and after several years began with its B2C base.

5 Problem Solving Approach:

Following is the manner in which the problems-Variable demand, Labour challenges and Customer loyalty -will be resolved:

Methods use:

The first step includes frequent meetings with the entrepreneur and his employees to discuss the problems in detail, any solution that was worked upon prior (if any) and how can the problem be overcome. During the first meet discussion included:

1. How the venture started and regarding the financial capital that was provided.
2. The three problems that it faces and the extent to which they cause issues in day-to-day business.
3. The locality of the issues and the future vision of the business.
4. Dataset from sales record, financial invoices, attendance and inventory log records that they willingly share.

Due to time constraint we were unable to discuss more, but more meetings of such a kind will be followed. Mr Singh has also promised to have a meeting with his previous employer who has been in this sector for several decades so as to have a broader look upon the issues faced in the industry.

Following could be trials on various methods to improve the situation on a smaller scale and looking at the outcomes including-rotating schedules,hiring a skill database laborer or limited customer loyalty program.

Data collection:

Primary data will include quantity of an item demanded and its updated model through the years which would give an idea about the variable demand concept.The data will be collected from inventory log books which holds for quantity of a product sold throughout the year.Data will modeled and corrected data including of a component and its updated version's quantity will be considered.

Another dataset will include the primary data from attendance register which includes number of working hours of that month.As the employees receive a hourly payment at end of a month ,the attendance register will provide data accordingly ,suggesting the effect of working hours proportionality to business' outcomes and growth.

The primary dataset from sales log record and financial invoice records including purchase history will suggest revenue contribution by bulk orders from B2B and individual orders from B2C sector along with profitability breakdown.

Proper and accurate collection of these dataset along with correcting and modelling it would give a clear idea about the issues faced and will help in suggesting proper alternatives to the venture.

Data Analysis :

As all data is collected from the primary source after correcting and modelling it,in following ways it will be analyzed.

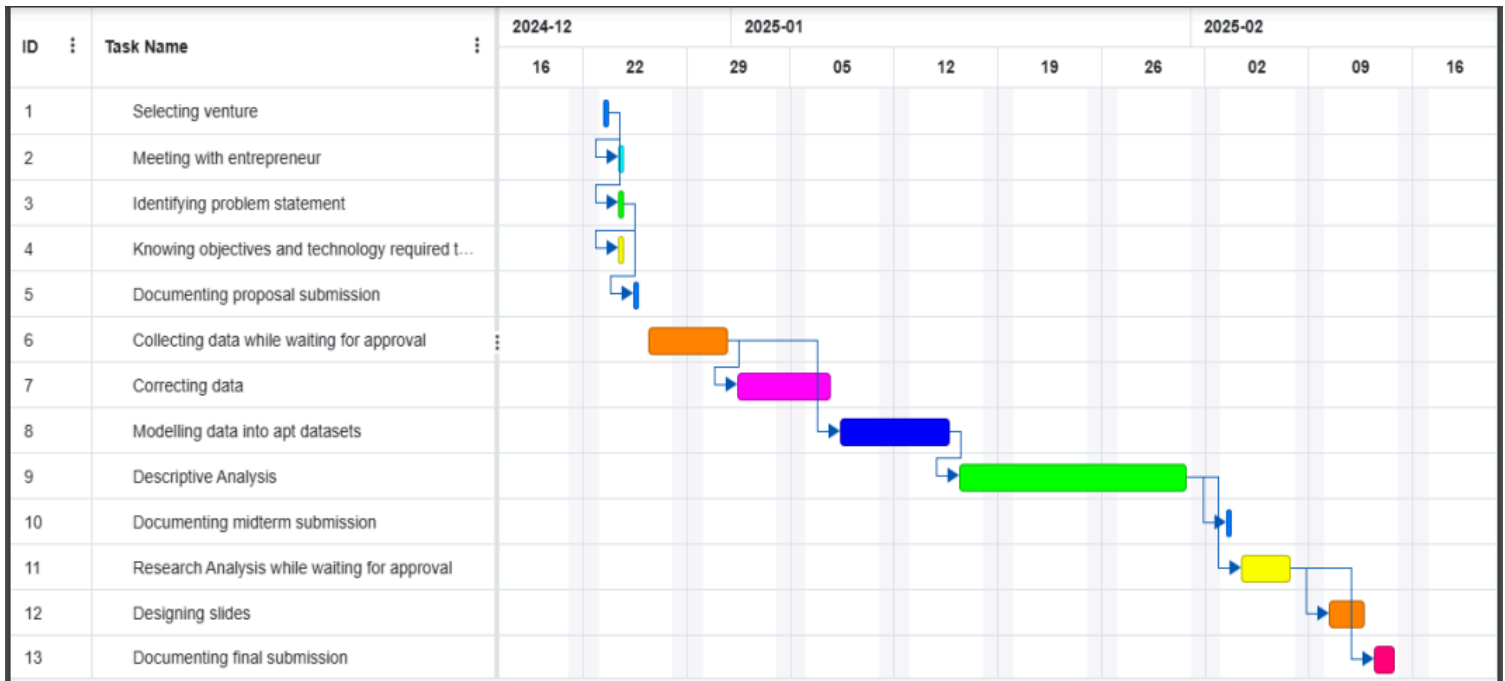
- 1.With help from MS-EXCEL and Google Sheets attendance and its effect on business outcome .
- 2.With help from MS-EXCEL,Google Sheets,Python and matplotlib (python library) to analyze the quantity trends of a product and its new model through the years.
3. With help from MS-EXCEL,Google Sheets,Python and matplotlib (python library) to analyze patterns , compare B2B bulk purchasing behaviors with B2C individual purchases,identify sector profitability and allocate resources accordingly.

6 Expected Timeline:

Work Breakdown structure:

1. **Select Venture:** Identify and finalize the venture based on scope.
2. **Meeting with an Entrepreneur:** Schedule and discuss key challenges.
3. **Identify Problem Statement:** Analyze and document problems faced.
4. **Define Objectives:** Align goals and necessary technologies required to analyze.
5. **Document Proposal:** Draft and submit proposal for approval.
6. **Data Collection:** Gather primary data from logs and records.
7. **Data Correction:** Clean, standardize, and validate data.
8. **Model Data:** Structure data into categorized datasets.
9. **Descriptive Analysis:** Analyze trends and patterns using tools.
10. **Midterm Submission:** Document midterm submission and submit
11. **Research Analysis:** Conduct analysis and study trends
12. **Design Slides:** Make visual presentations.
13. **Final Submission:** Complete and submit the final report.

Gantt Chart:



7 Expected Outcome:

The proposal addresses the challenges faced by Mahavir Enterprise, a leading electronics and hardware shop in Mumbai. The key issues include fluctuating demand, long working hours, and customer loyalty dynamics in the B2B sector. The project aims to improve inventory management by analyzing SKUs, ensuring optimal stock levels to prevent both overstocking of low-demand items and understocking of high-demand products. By streamlining time-management and workload distribution, the project seeks to enhance employee productivity and reduce operational strain. Additionally, it will compare B2B and B2C profit margins, offering valuable insights for better pricing strategies, resource allocation, and overall profit maximization. The proposal also focuses on identifying root causes of inefficiencies, improving demand forecasting, and providing actionable solutions to enhance operational efficiency and customer satisfaction. Ultimately, the goal is to foster business growth by addressing these challenges and implementing strategies that optimize resources and improve service delivery.