The Cost of Goods Transportation: Navigating through the Loss

A Proposal report for the BDM capstone Project

Submitted by -

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Declaration Statement

I am working on a Project Title “The Cost of Goods Transportation: Navigating through the Loss
”. I extend my appreciation to Mr. Sujoy Sarkar, the owner of a small scale businessman in the field of Transport Business , 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.

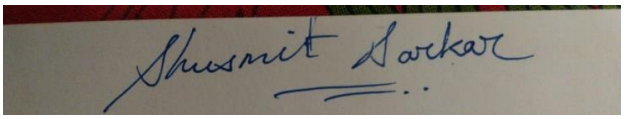
Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

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:



Name: Shusmit Sarkar

Date: 22nd July 2024

1. Executive Summary and Title:

This project aims to address operational challenges faced by a small B2B transport enterprise. The company's fleet includes two trucks—a 6-wheeler and a 12-wheeler—that experience issues like goods damage during transit and delays in order fulfillment, impacting profitability.

To mitigate these challenges, various data analysis methods will be implemented. This includes data extraction and cleansing to pinpoint geographical areas prone to goods damage due to weather conditions and identifying factors causing transportation delays. Additionally, graphical techniques will forecast transportation costs and establish optimal pricing strategies to maximize profitability.

The project aims to reduce ancillary transportation costs, improve operational efficiency, and provide insights into pricing strategies to enhance the enterprise's profitability and competitive position in the transport sector.

2. Organization Background:

Ganesh Transport, operated by Mr. Sujoy Sarkar, specializes in B2B transportation services between Kolkata, West Bengal, and Guwahati, Assam. Founded in 2010 with a fleet of a 6-wheeler and a 12-wheeler truck, the business transports hardware materials and perishable goods. Operating two trips per month, Ganesh Transport focuses on reliability and personalized service, earning a reputation for efficiency and trustworthiness in facilitating trade between West Bengal and Assam.

3. Problem Statements –

- Goods Get Damage During Monsoon Season
- Lack of Route Optimization Tools
- Escalated Operational Expenses
    - Market Fluctuations: Variable prices for oils and tires add to operational costs.
    - Route Inefficiencies: Poor route selection increases fuel consumption and vehicle wear and tear.
    - Driver Fatigue: Long hours and insufficient rest contribute to inefficiencies and increased costs.

4. Background of Problems:

Goods Damage During Monsoon Season:

- Weather Conditions: Heavy rains and flooding damage roads, leading to delays and difficulty in maintaining the quality of goods.
- Transportation Infrastructure: Poor road conditions and infrastructure during the monsoon season hinder smooth transit.
- Handling Practices: Improper handling of perishable goods increases spoilage risk.

Lack of Route Optimization Tools:

- Absence of advanced route planning software or GPS navigation leads to poor route choices.
- Driver Training: Insufficient training on optimal route selection.
- Road Conditions: Unpredictable road conditions cause suboptimal choices by drivers.

Escalated Operational Expenses:

- Market Fluctuations: Variable prices for oils and tires add to operational costs.
- Route Inefficiencies: Poor route selection increases fuel consumption and vehicle wear and tear.
- Driver Fatigue: Long hours and insufficient rest contribute to inefficiencies and increased costs.

5. Problem Solving Approach:

The report details a comprehensive approach using data analysis methodologies to address challenges and improve operational efficiency and profitability.

Data Collection and Cleansing:

- Gathered historical data on goods damage, weather patterns, and transit routes during the monsoon season.
- Cleaned and preprocessed data to ensure accuracy and consistency, removing outliers and handling missing values.
- Collected historical data on oil and tire prices, operational expenses, and route choices for analysis.
- Geographical and Weather Analysis.
- Used mapping routes to identify areas prone to adverse weather conditions.
- Analyzed weather data to pinpoint times and locations with the highest risk of adverse weather impacting transportation.
- Analyzed historical data on delivery times and routes to identify patterns and correlations between route selection and delays.

Predictive Modeling:

- Predicted goods damage likelihood based on historical data for proactive measures.
- Developed time series models to forecast future prices of oil and tires using statistical techniques.

Cost Analysis and Budgeting:

- Analyzed the impact of fluctuating prices on overall operational expenses and developed budgeting models to account for predicted price changes.

Training and Awareness:

- Conducted training sessions for drivers on handling perishable goods during adverse weather.
- Developed guidelines and best practices for transporting perishable commodities.

GPS and Real-Time Tracking:

- Implemented GPS tracking systems on trucks to monitor routes in real-time, collecting data on traffic conditions and road closures.
- Established maintenance schedules to minimize downtime and extend the lifespan of tires and other components.
- Optimized route selection to reduce fuel consumption and vehicle wear and tear.
- Driver Training and Incentives:

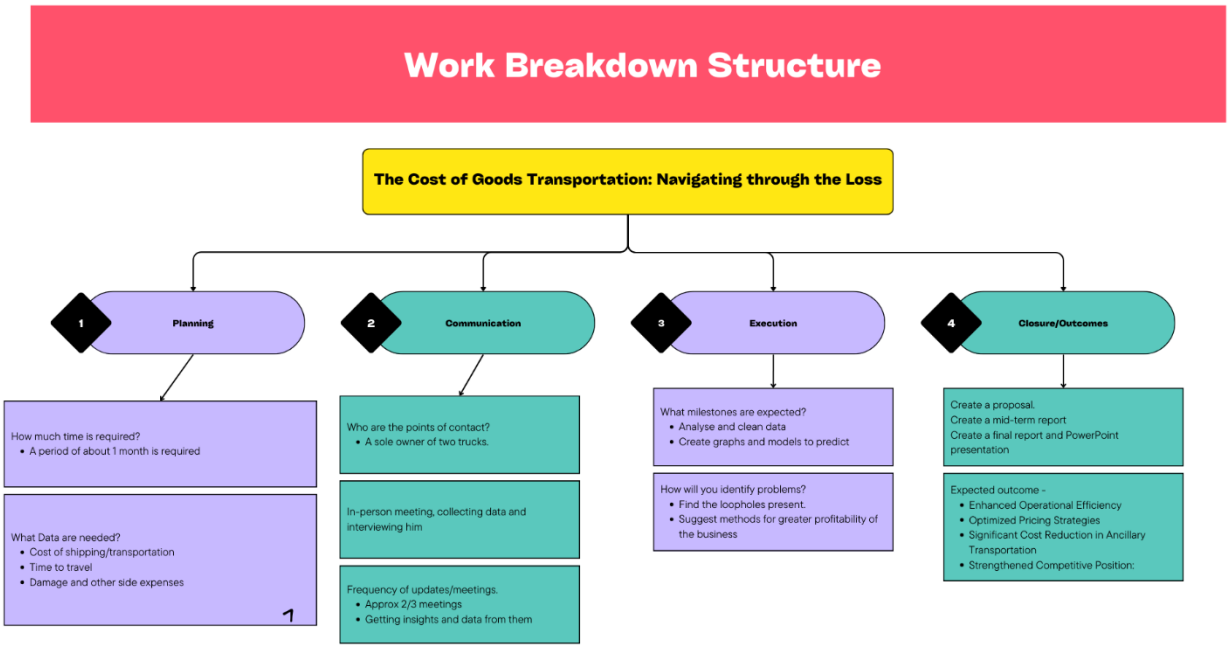
- Trained drivers on using route optimization tools and the importance of adhering to recommended routes.
- Introduced incentive programs to reward drivers for timely deliveries and adherence to optimized routes.

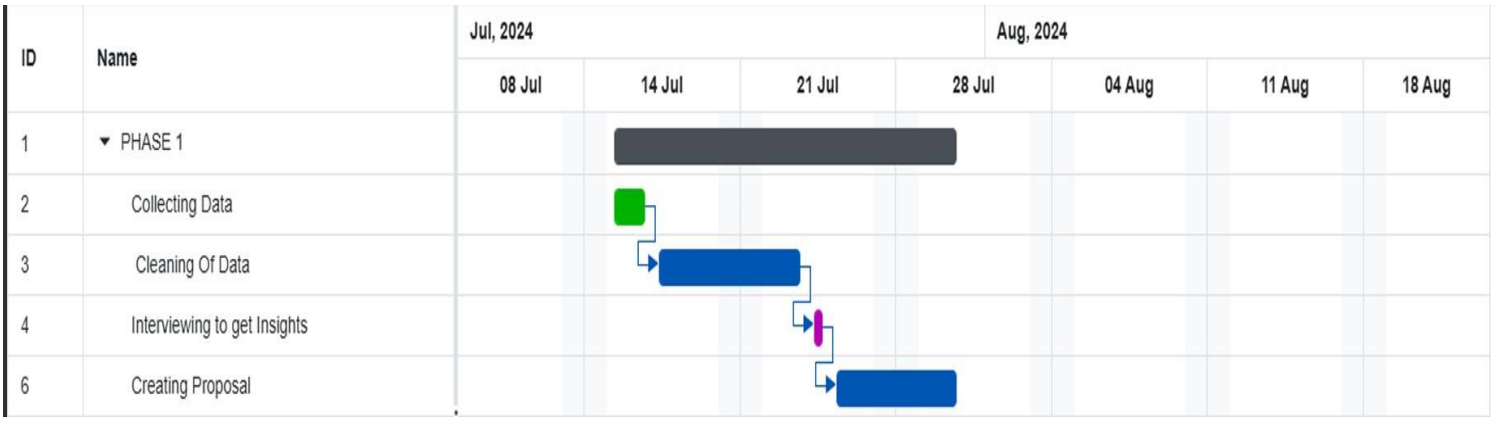
Scenario Analysis:

- Conducted scenario analysis to evaluate the impact of different price fluctuation scenarios on operational costs and developed contingency plans to mitigate the effects of price increases.

6. Expected Timeline:

Gantt chart and WBS Chart –





7. Expected Outcome:

- Cost Reduction: Optimize routes and predict cost fluctuations to minimize unnecessary expenses, reducing ancillary transportation costs.
- Enhanced Operational Efficiency: Improve route planning and driver training to reduce goods damage and transportation delays.
- Optimized Pricing Strategies: Implement pricing strategies based on market demands and cost trends to maximize profitability.
- Strengthened Competitive Position: Improved operational efficiency and cost management to enhance the business's competitive stance in the transport sector.

By effectively reducing costs, enhancing operational efficiency, and developing optimal pricing strategies, the business is poised to significantly boost its profitability and solidify its competitive edge within the transport industry.

8. Proof Of Originality –

https://drive.google.com/drive/folders/13pHCo6Wr-QM-HLNpLgoDaJR47ZkLkCQd?usp=sharing

Proof Of Originality