

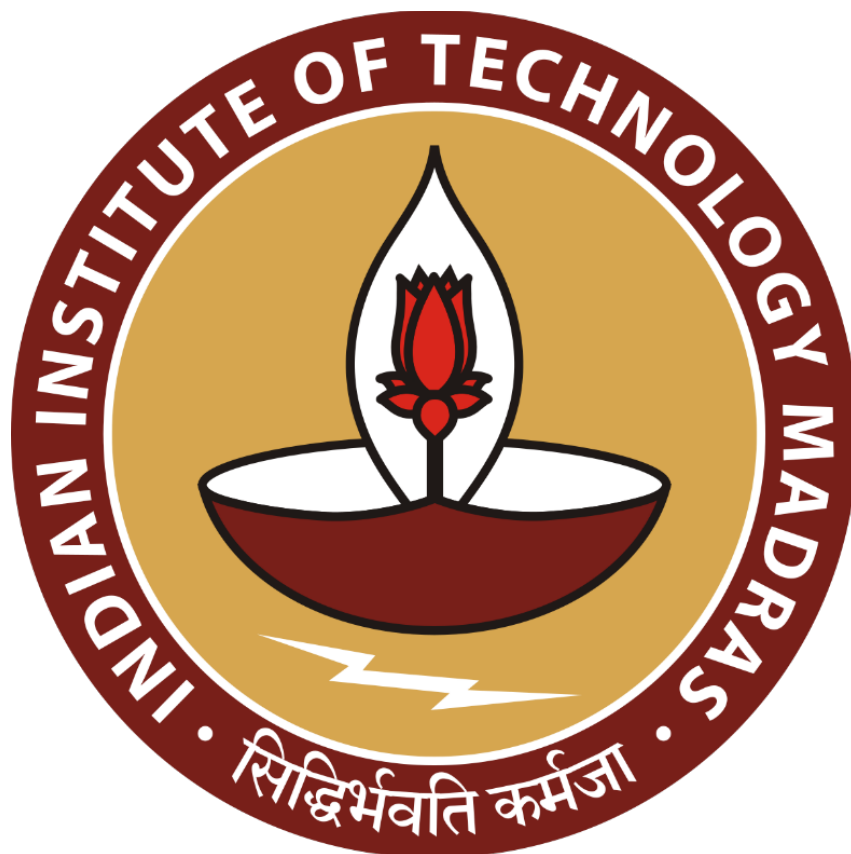
# **Enhancing Operational Efficiency And Profitability Through Pricing Strategy Optimization And Seasonal Sales Analysis For A Paper Trading Firm**

BUSINESS DATA MANAGEMENT CAPSTONE PROJECT PROPOSAL

SUBMITTED BY

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## 1. Executive Summary and Title (200 Words)

Indra Impex Corporation, a small B2B paper trading company of 10 employees, aims to enhance its operational efficiency and overcome stock shortages. In order to ensure customer satisfaction and maximise profits, a strategic pricing plan is imperative. The project objectives focus on achieving a competitive yet profitable pricing strategy and optimizing inventory management through sales data analysis.

To address these objectives, the project will involve comprehensive data analysis using tools such as Excel and Google Docs. Pricing data analysis will involve calculating measures like average price, price range, and price variability to understand the pricing landscape. Customer behaviour analysis will include studying purchase frequency, order size, and customer segmentation to identify valuable customers and preferences. Sales data analysis will visualize sales distribution, trends, and product performance to aid inventory decision-making.

The expected outcomes of the project include a data analysis report with actionable recommendations, a pricing strategy document based on price elasticity and customer sensitivity, and a demand analysis to inform inventory management decisions. If time permits, exploration of untapped markets using primary and secondary data will be considered.

The project timeline spans from data collection and cleaning to the final submission, with deliverables designed to enhance operational efficiency, pricing strategies, and inventory management practices.

## 2. Organization Background

Indra Impex Corporation is a small **B2B paper trading company** based in Naraina, Delhi and Kundli, Haryana. With a focus on delivering quality paper products to businesses, they serve as a reliable intermediary between paper manufacturers and other businesses, such as offices, printing companies, or packaging companies, which use paper as a raw material or for their day-to-day operations.

**Established in 2016**, they have steadily grown their operations. Their product offerings include a wide range of paper grades, sizes, and finishes, catering to a diverse clientele. Operating with a **customer-centric approach**, Indra Impex Corporation firmly prioritizes customer satisfaction through timely deliveries and competitive pricing. Their **commitment to staying updated with market trends** drives them to optimise their operations, and constantly analyse the sales trends to adapt to the **ever-changing nature of the market**.

Indra Impex Corporation aims to be the trusted partner for businesses seeking **dependable paper solutions**.

### 3. Problem Statement

Indra Impex Corp. is interested to **enhance operational efficiency** and **overcome stock shortages** by gaining insights on pricing data and customer behaviour. Based on that understanding, a **competitive yet profitable pricing strategy** is to be adapted, while also **optimising the inventory management** by analysing seasonal sales trends.

#### Problem Objectives

- A. Data Analysis to be done to analyse pricing data and customer behaviour which will help **identify optimal price points** for different paper products.
  - The business can evaluate price elasticity, customer sensitivity to price changes, and competitor pricing to set competitive yet profitable pricing strategies.
- B. Conduct a thorough analysis of customer data and historical sales data to **identify demand patterns** for different types and grades of paper.
  - This helps in accurately forecasting demand, optimizing inventory management, and avoiding stockouts or excess inventory.

### 4. Background of the Problem

Based on the interaction with the owner of Indra Impex Corp., Mr. Abhishek Gupta, the major problem that the paper market faces presently is low sales and high supply.

Moreover, the cost price of the papers in the market is more or less fixed and cannot be bargained with, or optimised, as there are limited manufacturers. Additionally, since their firm also imports a significant amount of their products, the shipping costs, along with the cost price of the papers, is significantly sensitive to many geopolitical issues.

In light of the said problems, it is imperative for the firm to approach their business very strategically, and optimise the factors in their hands, namely, Economic Order Quantity, and Pricing of the papers. There is a need for adapting a strategic pricing plan for various paper products so as to ensure customer satisfaction while maximising profits.

This is exactly what would be probed in this project. With proper analysis of Customer Behaviour and seasonal demands of certain papers, price elasticity and most profitable inventory system will be presented.

## 5. Problem Solving Approach

### **Methods to be used with justification**

For pricing data: Calculate measures such as the **average price, price range, and price variability** to understand the pricing landscape for different paper products. Using Excel's Data Tables feature to perform sensitivity analysis by changing input values (e.g., pricing variables) and observing the resulting impact on key metrics (e.g., sales revenue, profit).

For customer behaviour data: Analyse data such as **purchase frequency, order size, and customer segmentation** based on purchasing patterns. This analysis can provide insights into customer preferences and buying habits.

Customer Segmentation: Use clustering techniques or segmentation analysis to group customers based on their purchasing patterns, such as RFM (Recency, Frequency, Monetary) analysis or demographic segmentation.

Identify valuable customers by analysing their most recent purchase information.

For sales data: Plot a histogram to visualize the **distribution of sales data** and identify any skewness or concentration of sales within certain ranges. Create a line chart to display **sales trends over time**, allowing for the identification of seasonality, growth patterns, or declining trends. Utilize a bar chart to **compare sales performance** across different products, regions, or customer segments, providing a visual understanding of sales variations. Generate a pie chart to showcase the percentage **contribution of different product categories** to total sales, aiding in identifying popular product segments.

More types of analysis will be done as the basic Exploratory analysis is completed.

Bonus (only if time permits): Primary data from the firm can be leveraged with secondary data to explore untapped markets. Market Demographics can be explored with publicly available census data and industry-specific market research reports that provide detailed information on market size, growth rates, consumer behaviour, and demographic profiles. These reports can offer valuable insights into target customer demographics and preferences.

Industry Trends can be figured out by industry-specific trade associations, publications, and websites to gather information on emerging trends, market dynamics, and technological advancements. Publicly available government data on industry performance, production statistics, and economic indicators can be used.

### **Tools to be used**

Tools used would be MS Excel and Google Docs. Occasionally Python Libraries such as Pandas may be utilised for faster working.

### **Data Collection**

All the data is collected in a separate software by the firm. It will be required to be converted into Excel format for the purpose of Data Analysis.

The exact duration of which data will be collected is yet to be finalised.

Data will be first cleaned before commencement of any analysis techniques.

## 6. Expected Timeline

- A. Accessing the data and complete Data Cleaning. **By 9<sup>th</sup> July.**
- B. Begin Data Analysis – **10<sup>th</sup> – 11<sup>th</sup> July**
- C. Continue exploring Data Analysis Methods while keeping in touch with the owner of the firm. **11<sup>th</sup> July – 9<sup>th</sup> August**
- D. Review and submit the Mid-Term report. **10<sup>th</sup> August**
- E. Finalise the project. Review the project thoroughly, with final inputs from instructors as well as the business owner. Make the submission. **15<sup>th</sup> August**

## 7. Expected Outcome / Deliverables

The project deliverables will provide valuable insights and strategic recommendations to enhance the paper trading business's operational efficiency, pricing strategies, and inventory management practices based on data analysis.

**Data Analysis Report:** Prepare a comprehensive report that includes the findings from data analysis, such as insights on pricing data, customer behaviour, and sales trends.

The report should present actionable recommendations for enhancing operational efficiency, optimizing pricing strategies, and improving inventory management.

**Pricing Strategy Recommendations:** Develop a detailed pricing strategy document that outlines optimal price points for different paper products based on data analysis. This should include price elasticity, and customer sensitivity to price changes.

**Demand analysis:** The report will consider historical sales data, seasonal sales trends, and customer behaviour to create a demand overview of various grades of papers. This will be used to inform inventory management decisions.

**Bonus: Possible untapped markets:** This report will explore the possible expansion avenues for the firm.