Supply Chain & Revenue Optimization for Indian Cosmetic Brand

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Executive Summary

This report analyzes **financial performance, sales trends, logistics efficiency, and supply chain management** for an Indian cosmetic brand. Key challenges include **low profit margins, inventory shortages, and supply chain inefficiencies**. Optimization strategies focus on **pricing, inventory forecasting, logistics improvements, and AI-driven supply chain management** to enhance overall profitability.

Objective

This study aims to **optimize the efficiency of the supply chain and revenue trends** for an Indian cosmetic brand by analyzing **financial performance, sales patterns, logistics efficiency, and supplier management**. The report provides **strategic recommendations** to improve **profitability, inventory management, and operational effectiveness** for sustainable business growth.

Methodology

Data

- **Source: Supply Chain Management Excel file.**
- **Tools Used: Excel** was used for data preprocessing

  Power Bi was used for analyzing trends and visualizing insights.

Analysis Approach

- **Demand-Supply Alignment:** Evaluated **inventory forecasting, supplier performance, and logistics enhancements** to reduce shortages.

Key Findings & Optimization Strategies

1. Financial Performance & Profitability

- **Current Profit Margin: 5.67%**, below industry standards.
- **Profitability Concern:** Products priced **below ₹40** show **negative margins**, impacting revenue.
- **High-Profit Product: Skincare SKU 11** holds a **28.82% profit margin**, significantly contributing to profits.

Optimization Strategies:

- **Implement dynamic pricing** for low-margin products.
- **Introduce bundle pricing** to pair high-margin and low-margin items.
- **Bulk purchase raw materials** for cost-efficient production.

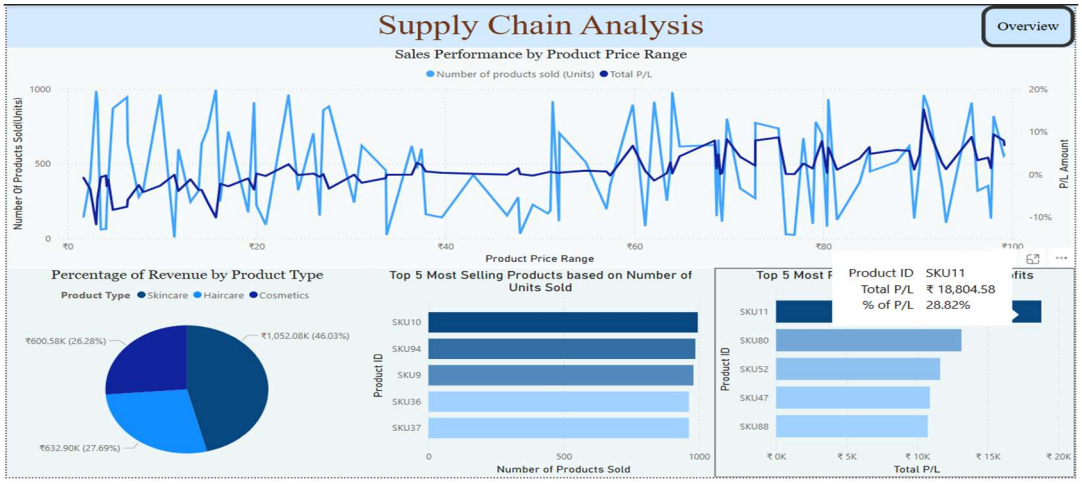

Figure 1 - Revenue and P/L percentage according to Price Range, Product Type

2. Sales & Category Performance

- **Top-Selling Category: Skincare contributes 46%** of total revenue.
- **Inventory Deficit: 3% shortage** in skincare stock vs. upcoming demand, with a **16-day lead time**.

Optimization Strategies:

- **Enhance inventory forecasting** based on seasonal demand trends.
- **Apply just-in-time inventory management** to prevent shortages.
- **Increase production capacity** for high-selling skincare products.

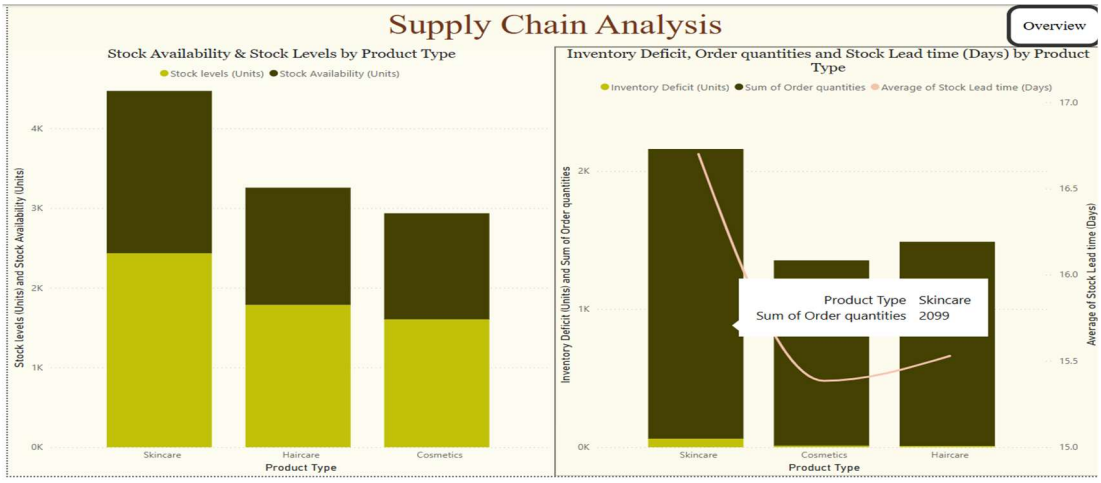

Figure 2 - Current Stock Levels , Deficit and upcoming order Quantities

3. Logistics & Shipping Efficiency

- **Preferred Carrier: Carrier B offers better cost & order shipping time** compared to alternatives.
- **Optimized Manufacturing: Bangalore supplier has lowest defect rates, lowest lead time, and most cost-efficient production**.
- **Strategic Supplier Locations: Bangalore, Mumbai, and Delhi** provide **low cost of goods sold (COGS) and faster lead times**.

Optimization Strategies:

- **Prioritize Carrier B** for logistics efficiency.
- **Expand reliance on Bangalore suppliers** for cost-effective production.
- **Implement dynamic rerouting technology** for faster delivery.

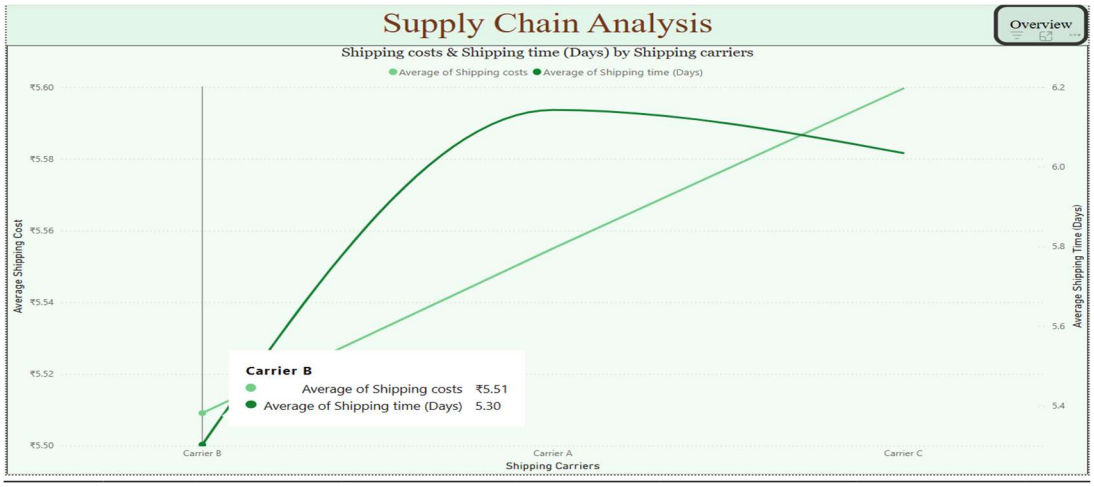

Figure 3 - Order Shipping Cost and time for different Carriers

4. Supply Chain Optimization & Lead Time Management

- **Inventory Holding Period: 16 days**, relatively short, requiring improved forecasting.
- **Manufacturing Lead Time:** Needs **better demand alignment** to reduce shortages.
- **Supply Lead Time:** Requires **stronger supplier collaboration** for timely replenishment.

Optimization Strategies:

- **Deploy AI-driven demand forecasting** to dynamically predict supply needs.
- **Maintain buffer stock** for high-selling items to reduce shortages.
- **Improve supplier coordination** with **real-time tracking & automated order processing**.

5.Cost-Efficient Bulk Manufacturing Potential

- **Bangalore, Delhi, and Mumbai suppliers** exhibit **lower manufacturing costs**, making them ideal for **bulk production scaling**.
- Their **lead time ranges from 20–30 days**, which aligns well with **regular supply chain cycles**, ensuring cost-effective replenishment.

Optimization Strategies:

- Prioritize **bulk orders** from these suppliers to **reduce per-unit production costs**.
- Establish **long-term contracts** for cost stability and efficient material procurement.
- Develop **automated demand forecasting** to optimize bulk ordering schedules.

6. Minimizing Supply Deficits & Transportation Optimization

- **Delhi Supplier 4** stands out with the **lowest deficit rate of 0.52%**, ensuring **higher reliability in fulfilling orders**.
- **Railway transportation** for Delhi supplier is **most cost-efficient**, reducing **logistics expenses**.

Optimization Strategies:

- Increase procurement from **Delhi Supplier 4** for consistency in order fulfillment.
- Expand railway-based logistics for **Delhi shipments**, lowering transportation costs further.

- Integrate **AI-driven supply monitoring** to track performance trends and optimize inventory placement.

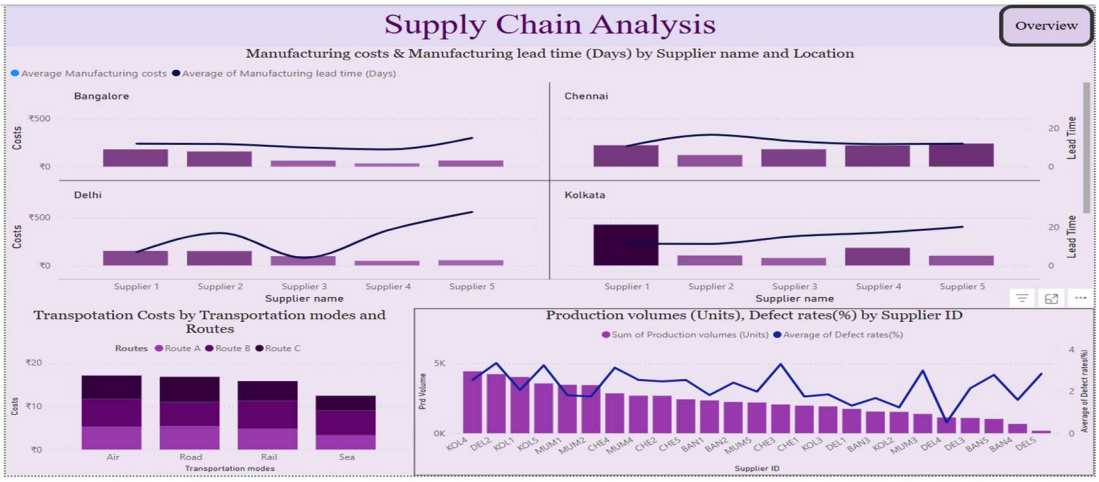

Figure 4 - Manufacturing Potential, Defect Rate and Transportation Efficiency

7.Emergency Supply Solutions from Chennai

- **Chennai suppliers** offer **shorter lead times (up to 15 days)**, making them a **reliable backup** for urgent replenishment needs.

Optimization Strategies:

- Maintain **buffer stock sourced from Chennai suppliers** to counter unexpected shortages.
- Use **adaptive supply routing** to switch to Chennai during peak demand periods.
- Implement **real-time inventory tracking** to trigger emergency restocking from Chennai when necessary.

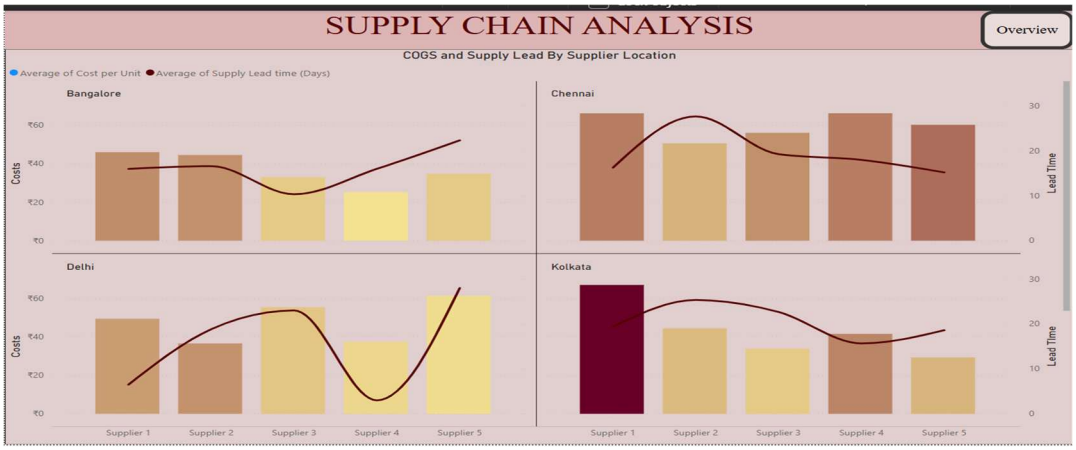

Figure 5 - Suppliers Performance and their supply lead time

Recommendations

Implementing AI-driven demand forecasting, dynamic pricing strategies, optimized logistics routes, and supplier management improvements will significantly increase revenue, reduce inefficiencies, and enhance the brand's competitiveness.

- **Integrate predictive analytics for pricing and inventory forecasting.**
- **Adopt AI-driven logistics for smarter shipping and supplier coordination.**
- **Enhance profit optimization with targeted bundling & cost management strategies.**

Conclusion

The report highlights **financial inefficiencies, inventory shortages, and supply chain gaps**, emphasizing **AI-powered demand forecasting, dynamic pricing models, and optimized logistics** as solutions. Implementing these strategies will improve **profitability, operational efficiency, and market competitiveness**.

Thank you for reviewing this report. I appreciate your time and consideration.
Best regards,
Samiran Bhagat