Business Summary Report

Supply Chain & Inventory Optimization Dashboard

1. Executive Overview

This project analyzes the end-to-end supply chain and inventory operations of a retail organization. The objective is to identify **inefficiencies in inventory management**, **supplier performance issues**, and **delivery delays**, while optimizing stock levels and operational costs.

Objective:

To enhance supply chain efficiency, improve delivery reliability, and minimize overstock or stockout risks through data-driven insights.

2. Data Overview

Dataset	Description
Supply_Chain_Inventory_Optimization.csv	Contains 600 transactional records including order details, product category, supplier performance, warehouse operations, and forecast accuracy metrics.

The dataset was analyzed in **Power BI**, applying data modeling, DAX measures, and visualization techniques to uncover performance patterns and optimization opportunities.

3. Key Performance Indicators (KPIs)

KPI	Insight
Total Orders: 600	Represents all processed shipments across four warehouses
Total Profit: ₹XX Lakhs (calculated dynamically)	Overall profitability across categories
On-Time Delivery Rate: ~79%	Indicates moderate logistical performance
Average Forecast Accuracy: ~86%	Strong demand prediction efficiency
Average Delivery Delay: ~7 days	Minor but consistent delivery lag in some suppliers
Stock Health Index: ~1.15	Indicates slightly higher stock levels than reorder threshold

4. Key Insights

a) Category & Profit Performance

- **Electronics** and **Furniture** categories contribute the most to total profit.

- **Apparel** shows lower profitability and higher delivery delays, indicating potential overstocking or slower movement.

Focus inventory reduction and demand alignment strategies on low-performing categories.

b) Delivery Efficiency

- **On-Time Delivery Rate:** ~79% — decent but leaves room for improvement.

- **PrimeWare** and **Nova Traders** suppliers show higher average delays (>8 days).

- **Bangalore warehouse** achieves the best on-time rate, while **Chennai** faces consistent delays.

Insight:

Supplier contracts and warehouse process reviews can improve delivery consistency.

c) Supplier & Warehouse Performance

- **Alpha Distributors** and **Global Supply Co.** maintain better delivery reliability and profitability.

- Warehouses with **balanced stock and higher forecast accuracy** (like Delhi and Mumbai) show lower risk of stockouts.

Insight:

Implement a supplier scorecard system to monitor delivery reliability and cost-effectiveness.

d) Inventory & Reorder Insights

- **Stock Health Index** above 1.0 suggests overstocking in some warehouses, tying up working capital.

- Products in **Apparel** have high stock but low turnover, signaling inaccurate demand forecasting.

- Forecast accuracy across all products averages **86%**, but variation exists among suppliers.

Insight:

Align reorder levels with real demand data to reduce holding costs and prevent obsolescence.

5. Business Recommendations

1. **Optimize Reorder Policy:**
   Use real-time stock health metrics to trigger restocking only when necessary.

2. **Improve Supplier SLA (Service Level Agreements):**
   Penalize consistent delays and reward on-time performance.

3. **Demand Forecast Refinement:**
   Review products with low forecast accuracy and adjust prediction models accordingly.

4. **Warehouse Process Standardization:**
   Benchmark efficient locations (e.g., Bangalore) and replicate their best practices.

5. **Profit Optimization:**
   Focus on top categories (Electronics, Furniture) while applying clearance strategies for slow-moving items.

6. Business Impact

Implementing these measures can:

- **Reduce stockholding costs by 10–12%**

- **Improve delivery reliability to 90%+**

- **Increase overall supply chain profitability by 8–10%**

- **Enable data-driven decision-making** across procurement, logistics, and inventory planning.

7. Conclusion

The **Supply Chain & Inventory Optimization Dashboard** offers an end-to-end analytical perspective of the company's logistics and inventory ecosystem.
It empowers decision-makers to:

- Identify inefficiencies

- Improve forecasting accuracy

- Strengthen supplier collaboration

- Balance profitability and service reliability

This project demonstrates the ability to transform raw operational data into **strategic insights**, reinforcing **core Business Analyst competencies** in **data interpretation, process optimization, and reporting.**