Project Report

Samsung Supply Chain & Logistics Analytics Dashboard

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1. Introduction

In the modern consumer electronics industry, organizations such as Samsung operate in highly dynamic environments where supply chain efficiency and sales performance directly impact business success. Companies manage multiple suppliers, production facilities, logistics networks, and sales channels simultaneously, which generates massive volumes of operational and transactional data. Without a structured analytical platform, it becomes challenging for stakeholders to monitor key performance indicators, identify operational risks, and make timely strategic decisions.

The Samsung Supply Chain & Logistics Analytics Dashboard was developed using Microsoft Power BI to simulate an industry-level reporting solution. The main goal of this project is to integrate supply chain operations and sales analytics into a centralized and interactive dashboard. By combining supplier performance, inventory management, shipment tracking, and revenue analytics into one platform, the solution enables business users to understand overall performance and improve decision-making processes.

The dashboard focuses on visual storytelling and KPI-driven insights. It transforms raw business data into meaningful metrics such as Total Revenue, Profit Margin, Perfect Order Percentage, Shipment Volume, Inventory Value, and Customer Sales Trends. The structured layout and interactive filters allow stakeholders to explore data from different perspectives while maintaining a professional and user-friendly interface.

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2. Dashboard Overview and Key Metrics

The Overview section provides a high-level summary of business performance across the supply chain and selling ecosystem. According to the overview visuals shown in the dashboard, the system highlights Total Revenue of approximately 176.95M, Total Profit of 48.56M, Profit Margin of 0.27, Perfect Order Rate of 75%, and Total Shipments of 7500. These KPIs allow decision-makers to quickly evaluate operational efficiency and financial performance.

This page also integrates insights from multiple business modules such as Supplier, Manufacturer, Shipment, and Customer analytics. Visual components including pie charts, bar graphs, and KPI cards help identify trends such as platform-wise revenue contribution and carrier delays. By presenting critical business information in a single view, the overview page acts as a strategic starting point for deeper analysis.

3. Supplier Analytics

Supplier performance plays a crucial role in maintaining a stable and efficient supply chain. The Supplier module analyzes various metrics including average lead time, supplier quality score, order quantity, and total unit cost. As illustrated on the supplier page, vendors such as BOE Technology, Samsung Electronics, and Sony Semiconductor are evaluated based on their operational performance.

The visuals help identify suppliers with higher lead times or higher procurement costs, enabling organizations to optimize sourcing strategies. Geographic analysis further highlights lead time variations across countries such as China, Japan, South Korea, Taiwan, India, and Vietnam. These insights support better supplier selection, improved procurement planning, and reduced operational risks.

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4. Inventory & Production Analysis

Effective inventory management ensures that products are available to meet customer demand while avoiding excessive stock levels. The Inventory & Production module provides insights into inventory value, turnover rate, defective units, and product-wise distribution. According to the visuals on the inventory page, products like Galaxy S24 Ultra, Galaxy Buds2 Pro, and Galaxy Watch6 contribute significantly to product performance.

Monthly trends in defective units and inventory value help stakeholders identify fluctuations in production efficiency. The dashboard also displays safety stock levels and reorder points, allowing businesses to maintain optimal inventory levels. This module demonstrates how data analytics can enhance production planning, reduce waste, and improve operational efficiency.

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5. Shipment & Logistics Performance

The Shipment section focuses on logistics efficiency and delivery performance. Key metrics include Total Shipment Quantity, Delivered Percentage, Total Delay, and Shipping Costs. Visualizations highlight carrier performance across companies such as DHL Express, FedEx International, and Maersk Line.

The dashboard identifies major delay reasons including carrier capacity issues, documentation problems, customs clearance delays, and weather disruptions. By analyzing delay patterns and shipment channels such as online, retailer, and direct distribution, businesses can improve logistics strategies and minimize delivery risks. This module provides valuable insights into transportation efficiency and operational reliability.

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6. Sales & Revenue Analytics

The Selling Analytics module evaluates revenue growth, profit contribution, and product performance across different sales channels. According to the visuals, online channels generate the highest share of revenue compared to retailer and direct channels. Profit trends by product and monthly performance analysis help identify seasonal demand patterns and top-performing products such as Galaxy S24 Ultra and Galaxy Z Fold5.

Channel-wise profit and revenue charts allow stakeholders to evaluate which platforms contribute most to business growth. The dashboard also tracks discount amounts and profit margins, enabling better pricing strategies and sales optimization. This module demonstrates how data visualization can support marketing decisions and improve customer-focused strategies.

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7. Tools and Methodology

The dashboard was developed using Microsoft Power BI with a structured data modeling approach. A star schema design was implemented to maintain efficient relationships between dimension and fact tables. Power Query was used for data transformation and cleaning, while DAX measures were created to calculate KPIs such as Total Revenue, Profit Margin, Average Lead Time, and Shipment Performance.

The user interface was designed with consistent navigation elements, professional visuals, and interactive filters to simulate a real-world enterprise reporting environment. Each page is structured to provide focused insights while maintaining visual consistency across the entire dashboard.

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8. Conclusion

The Samsung Supply Chain & Logistics Analytics Dashboard demonstrates how modern business intelligence tools can transform complex operational data into actionable insights. By integrating supplier performance, inventory tracking, logistics monitoring, and sales analytics into a single platform, the dashboard provides a comprehensive view of business operations.

This project highlights the importance of centralized analytics, KPI-driven reporting, and data storytelling in improving organizational decision-making. The solution not only enhances operational transparency but also supports strategic planning, demand forecasting, and performance evaluation. Overall, the dashboard reflects an industry-level approach to data analytics and showcases the practical application of Power BI in solving real-world business challenges.