



Supply Chain Dataset Analysis

Presented To:

Ministry of Communications and
Information Technology

Project Planning and Management

Project Proposal

Overview

The project aims to develop a Power BI dashboard for supply chain analysis using the provided dataset. The dashboard will provide insights into inventory levels, supplier performance, order processing efficiency, and overall logistics.

Objectives

- To enhance data visualization and decision-making in supply chain operations.
- To track and improve key performance indicators (KPIs) such as order fulfillment rates and lead times.
- To automate reporting and reduce manual data analysis efforts.

Scope

- Data processing and transformation for meaningful insights.
- Developing interactive dashboards with various filters and visual elements.
- Ensuring real-time data refresh capabilities.
- User training and documentation for smooth adoption.

Project Planning and Management

Project Plan

Task	Week 1	Week 2	Week 3	Week 4	Week 5
Data Cleaning & Preparation	X	X			
Data Modeling		X	X		
Dashboard Development			X	X	X
Testing & Validation				X	
Deployment & User Training					X

Milestones and Deliverables

- Week 1: Data cleaned and structured.
- Week 2-3: Data model established, and dashboard development begins.
- Week 4: Dashboard completed and tested.
- Week 5: Project deployment and user training.

Project Planning and Management

Task Assignment and Roles

Team Member	Role	Responsibilities
Marwa Hegy	Project Manager	Overseeing project progress, managing resources
Muhammed Gomaa	Data Analyst	Data cleaning, transformation, and modeling
Fatma Hamid	Power BI Developer	Dashboard creation and visualizations
Muhammed Sherif	QA & Testing	Ensuring accuracy, testing functionality
Mahy Hesham	Documentation & Training	Writing reports and training users

Project Planning and Management

Risk Assessment & Mitigation Plan

Risk	Potential Impact	Mitigation Strategy
Data quality issues	Inaccurate insights	Data validation checks before modeling
Power BI performance issues	Slow dashboard performance	Optimize data model and DAX measures
User adoption resistance	Ineffective use of dashboard	Conduct training and provide documentation
Technical errors	Project delays	Regular testing and debugging

Key Performance Indicators (KPIs)

- Order Processing Time:** Measures the time taken to process orders.
- Inventory Turnover Ratio:** Evaluates how often inventory is sold and replaced.
- Supplier Performance:** Tracks on-time delivery and defect rates.
- Order Fulfillment Rate:** Percentage of orders delivered on time.
- Dashboard Load Time:** Ensures quick data retrieval for users.

Requirements Gathering

Stakeholder Analysis: Key Stakeholders:

- **Supply Chain Managers** – Need real-time inventory, logistics, and supplier performance visibility.
 - **Operations Team** – Requires detailed warehouse operations and procurement.
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User Stories & Use Cases

User Story 1: Real-Time Inventory Monitoring and Supplier Performance

(a) As a Supply Chain Manager,

- I want to track real-time inventory, availability across multiple warehouses,
- So that I can optimize stock levels and reduce shortages or excess.

(b) As an Operations Analyst,

- I want to analyze supplier delivery times and quality scores,
- So that I can make informed decisions on supplier selection.

User Story 2: Logistics Optimization

As a Logistics Coordinator,

- I want to monitor transportation times and costs,
 - So that I can improve efficiency and reduce delays.
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Requirements Gathering

Functional Requirements

- **Dashboard Visualization:** Create interactive charts, tables, and KPIs.
- **Real-Time Monitoring:** Update data dynamically for tracking.
- **Filtering & Drill-down Features:** Enable users to filter and deep-dive into data.

Non-Functional Requirements

- **Performance:** The dashboard should load quickly and handle data updates efficiently.
- **Security:** Implement access controls to restrict user permissions.
- **Usability:** The interface should be user-friendly, with smooth navigation.
- **Reliability:** The system should be highly available and maintain data consistency.

System Analysis & Design

Problem Statement

The supply chain management process for the company is currently inefficient, with challenges in tracking inventory, managing supplier relationships, optimizing shipping logistics, and analyzing sales performance. The lack of a centralized system leads to delays in decision-making, increased operational costs, and difficulty in identifying trends and inefficiencies. There is a need for a data-driven solution that can provide real-time insights into the supply chain, enabling better inventory management, cost optimization, and improved customer satisfaction.

Project Goals

- **Real-Time Analytics:** Provide real-time dashboards and reports to monitor key performance indicators (KPIs) such as stock levels, lead times, defect rates, and revenue.
- **Improved Decision-Making:** Enable stakeholders to make data-driven decisions by identifying trends, bottlenecks, and opportunities for cost savings.
- **Efficient Inventory Management:** Optimize stock levels to reduce overstocking and stockouts, ensuring products are available when needed.

System Analysis & Design

Explanation of each Column in the Dataset

- **Product type:** The category of the product (e.g., haircare, skincare, cosmetics).
- **SKU:** Stock Keeping Unit, a unique identifier for each product.
- **Price:** The price of the product.
- **Availability:** The current stock level or availability of the product.
- **Number of products sold:** The quantity of the product sold.
- **Revenue generated:** The total revenue generated from the sales of the product.
- **Customer demographics:** The demographic information of the customers (e.g., Female, Male, Non-binary, Unknown).
- **Stock levels:** The current inventory level of the product.
- **Lead times:** The time taken from placing an order to receiving it.
- **Order quantities:** The quantity of products ordered.
- **Shipping times:** The time taken to ship the product.
- **Shipping carriers:** The carrier used for shipping (e.g., Carrier A, Carrier B, Carrier C).
- **Shipping costs:** The cost associated with shipping the product.
- **Supplier name:** The name of the supplier providing the product.
- **Location:** The location of the supplier.
- **Lead time:** The time taken by the supplier to deliver the product.

System Analysis & Design

Explanation of each Column in the Dataset

- **Production volumes:** The volume of products produced.
 - **Manufacturing lead time:** The time taken to manufacture the product.
 - **Manufacturing costs:** The cost associated with manufacturing the product.
 - **Inspection results:** The result of the product inspection (e.g., Pass, Fail, Pending).
 - **Defect rates:** The rate of defects found in the products.
 - **Transportation modes:** The mode of transportation used (e.g., Road, Air, Sea, Rail).
 - **Routes:** The route taken for transportation.
 - **Costs:** The total costs associated with the product.
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Meet The Team



Marwa Hegy

Financial & Power Bi
analyst



Muhammed Sherif

Data Analyst



Fatma Hamed

Power Bi Engineer



Muhammed Gomaa

Technical sales || sales
data analyst



Mahy Hesham

SAP Junior ABAP
Consultant