Supply Chain Project Full Report (Planning, Stakeholders, Database & UX)

1. Project Planning

This project aims to deliver a unified Supply Chain Management System (SCMS) that centralizes product, supplier, inventory, customer, and order data. The goal is to improve data accuracy, reduce manual work, and give real-time visibility over the flow of goods from suppliers to customers.

Scope:
- Product management: create, update, classify products.
- Supplier management: maintain supplier directory and link products to suppliers.
- Inventory control: monitor stock levels and detect stock-outs.
- Order management: capture customer orders and track fulfillment.
- Reporting: provide management KPIs from operational data.

Phased Timeline:
Phase 1 – Requirements & Data Structure (Week 1-2): finalize entities based on existing sheets.
Phase 2 – Database & API (Week 3-5): implement core tables and basic CRUD operations.
Phase 3 – UI/UX (Week 6-7): build dashboards and forms for daily operations.
Phase 4 – Testing & Go-live (Week 8): data validation, user training, deployment.

Project-Level KPIs:

- Data coverage (from Excel sources): 100 products, 40 suppliers, 120 customers, 1800 orders

- Inventory completeness (%): 100.0

- Order volume (count): 1800

2. Stakeholder Analysis

The system will be used and affected by multiple stakeholder groups. Understanding their level of interest and influence helps design the right UI screens, data permissions, and reporting views.

Primary Stakeholders:
- Operations / Inventory Team: responsible for daily stock updates and reconciliation.

- Procurement / Supplier Relations: uses Suppliers and Products data to keep catalog up to date.
- Sales / Customer Service: creates and tracks orders for customers.
- Management / Leadership: consumes KPI dashboards to make purchasing and fulfillment decisions.

Stakeholder KPIs:
- Number of registered suppliers: 40
- Number of active customers (in file): 120
- Customers with actual orders: 120
- Supplier geographic spread: 8

3. Database Design

The database is derived directly from the existing Excel structure. Each sheet maps to one primary table:
- Products → holds master data about items sold or stored.
- Customers → holds entities that place orders.
- Suppliers → holds entities that provide products.
- Inventory → holds stock position per product/location.
- Orders → holds commercial transactions.

Core Relationships:
- Products can be supplied by one or many suppliers.
- Orders are placed by customers.
- Each order line references a product (if the order sheet is header-level only, an OrderItems table should be added).
- Inventory references products to give stock visibility.

KPIs by Source Table:

Products:

- Total products: 100

- Product categories: 6

- Suppliers referenced in products: 36

- Avg product price: 560.0

- Min product price: 25.86

- Max product price: 1944.98

Customers:

- Total customers: 120

- Customer countries/regions: 7

- Share of customers with orders (%): 100.0

Suppliers:

- Total suppliers: 40

- Supplier countries/regions: 8

Inventory:

- Total inventory records: 300

- Total stock units: 125995.0

- Average stock per item: 419.98

- Zero-stock items: 0

- Products with inventory record (%): 100.0

Orders:

- Total orders: 1800

- Total order value: 1058729.02

- Average order value: 588.18

- Order date range (min): 2024-01-01

- Order date range (max): 2025-09-30

- Customers with orders: 120

4. UI/UX Design

The user interface should reflect the business flow of supply chain users: dashboard first, then operational modules. Navigation should be shallow (2 clicks max) and business terms should match the Excel sheets so users recognize their data.

Proposed Screens:
- Home Dashboard: total products, total suppliers, total orders (today / this month), low-stock alerts.
- Products Screen: searchable list with filters by category/supplier, and detail view.
- Inventory Screen: inline stock editing, zero-stock highlight, and export to Excel.

- Orders Screen: order header + order lines, status (pending, shipped, delivered).
- Admin / Master Data: manage customers and suppliers.

UX KPIs:
- Task completion rate (create order, update stock) ≥ 95% without training.
- Average time to locate a product ≤ 10 seconds (search + filter).
- Dashboard load time ≤ 3 seconds.
- Data error reports from users ≤ 2 per month.