# Business Requirements Document (BRD)

## Project Title:

Supply Chain Inventory Optimization Using ABC Classification and KPI Monitoring

## 1. Business Need

The business requires greater visibility into inventory performance to avoid frequent stockouts and overstocking issues. Currently, there is no systematic process to monitor inventory efficiency, fast-moving products, or stock risk levels. A data-driven solution is needed to classify SKUs, track inventory KPIs, and proactively manage replenishment to reduce operational costs and improve service levels.

## 2. Problem Statement

Many products are either understocked or overstocked, resulting in missed sales and excessive holding costs. The absence of calculated inventory KPIs and classification logic hinders strategic procurement decisions. A system is needed to identify fast and slow movers, determine safety stock levels, and provide actionable insights for timely restocking.

## 3. Project Scope

* In Scope:
* Clean and structure inventory dataset using Excel and SQL.
* Calculate Inventory Turnover Ratio, Days of Inventory, and Safety Stock (3-day buffer).
* Classify SKUs using ABC analysis based on cumulative revenue.
* Determine Inventory Status using Days of Inventory (Low, Optimal, Excess).
* Create Restock Indicators where Stock Level < Safety Stock.
* Design an interactive Power BI dashboard with KPIs, ABC segmentation, and low-stock alerts.
* Out of Scope:
* Integration with live ERP or warehouse systems.
* Predictive stock forecasting models.

## 4. Stakeholders

|  |  |
| --- | --- |
| Role | Details |
| Project Owner | Shikha (Business Analyst) – responsible for project execution and delivery. |
| End Users | Supply Chain Manager, Procurement Team – benefit from dashboard insights. |

## 5. Functional Requirements

* Calculate Inventory KPIs: Turnover Ratio, Days of Inventory, and Safety Stock.
* Perform ABC classification using cumulative revenue thresholds.
* Apply logic to determine Inventory Status (Low, Optimal, Excess).
* Flag Restock Indicators where stock is below the safety threshold.
* Design a Power BI dashboard with visual KPIs and filters for category/segment.

## 6. Non-Functional Requirements

* Dashboard should refresh weekly.
* Visually intuitive for non-technical users.
* Performance: Dashboard should load within 5 seconds.

## 7. Success Metrics

* 100% of SKUs classified by ABC and Inventory Status.
* At least 90% accuracy in Restock Indicator identification.
* 20% reduction in A-class stockouts.
* Improved turnover ratio for low-performing products.
* Stakeholders can act on insights within 1 business day.

## 8. Assumptions

* Inventory and sales data is accurate and updated.
* Buffer stock is consistently maintained at 3 days across products.
* Data is structured and consistently labeled for processing.

## 9. Constraints

* Dataset does not include real-time inventory feeds.
* Some SKUs may lack lead time or complete sales history.
* Fixed buffer for safety stock may not suit all product types.