IVS - Inventory Visibility System

1. Problem Statement & Business Impact

Problem	Business Impact
Dead inventory	Capital locked in unsold stock, increasing borrowing and discount pressure
Poor-performing SKUs	Storage and handling costs exceed realized value
Damaged inventory	False availability assumptions lead to operational issues
Stock-out situations	Lost sales and emergency purchases
Manual reconciliation	Over-promising stock and customer dissatisfaction

2. Root Causes

Area	Root cause	Effect
Data	No standardized SKU naming	Same item tracked under multiple names
Process	Manual stock updates	Errors, delays, and missing entries
Control	No audit trail	Loss or damage goes unnoticed
Insight	No stock health indicators	Dead inventory remains invisible
Scale	Memory-based decisions	Breaks down across locations

3. Solution Framework

The problem is addressed using a layered approach, combining non-tech and tech solutions:

1. **Process Improvements (Non-Tech)**
2. **Inventory Visibility System (Tech)**
3. **Decision Support & Operational Controls (Tech)**

3.1 Solution 1: Process Improvements (Non-Tech)

- **Standardized SKU Discipline:** Every material is assigned a single SKU code and name which Prevents duplication and confusion across locations
- **Cycle Counting:** Small daily stock checks instead of annual full counts which Enables early detection of loss or damage
- **FIFO:** Physical arrangement by arrival date which Reduces spoilage of time-sensitive materials

3.2 Solution 2: Inventory Visibility System (Tech)

- **SystemFlow**

  - Workers / Sites -> Stock Movement Entry -> Central Inventory Database -> Inventory Visibility System

- **Real-Time Multi-Location Visibility**

  - Exact stock quantity per SKU at each location
  - Eliminates guess-based commitments and emergency logistics

- **Inventory Health Indicators**

Status	Condition	Meaning
OK (Green)	Healthy quantity with recent movement	No action required
LOW (Orange)	Quantity ≤ reorder level	Risk of stock-out
DEAD (Red)	No movement for 60+ days	Working capital blocked

3.3 Solution 3: Decision Support & Operational Controls (Tech)

Controlled Stock Movements

Inventory is never edited directly. All changes occur through defined movements:

- **IN:** Purchase or receipt
- **OUT:** Sale or site usage
- **DAMAGE:** Broken or spoiled material
- **TRANSFER:** Site-to-site movement

Each movement is logged, creating a complete **audit trail**.

Site-to-Site Transfers

Before purchasing new stock, the system highlights idle inventory at other locations, enabling reuse and reducing unnecessary procurement.

Read-Only Excel Export

- One-click export of current inventory snapshot
- Supports offline review and sharing
- Prevents reintroduction of manual data corruption

Deliverables

- **GitHub Repository:** https://github.com/Om136/Inventory-management-system
- **Live Application:** *https://inventory-management-system-fronten-one.vercel.app/dashboard*