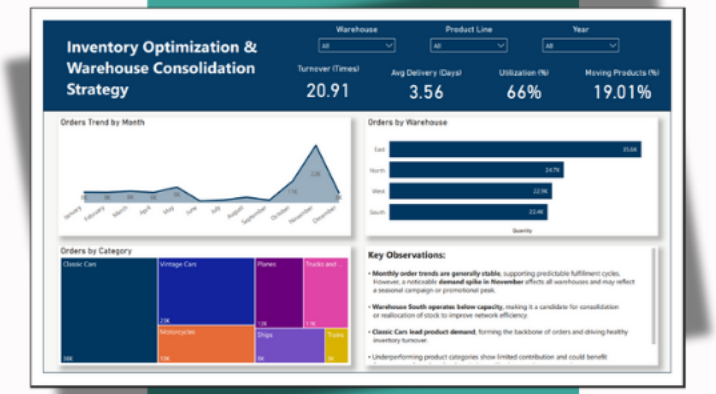
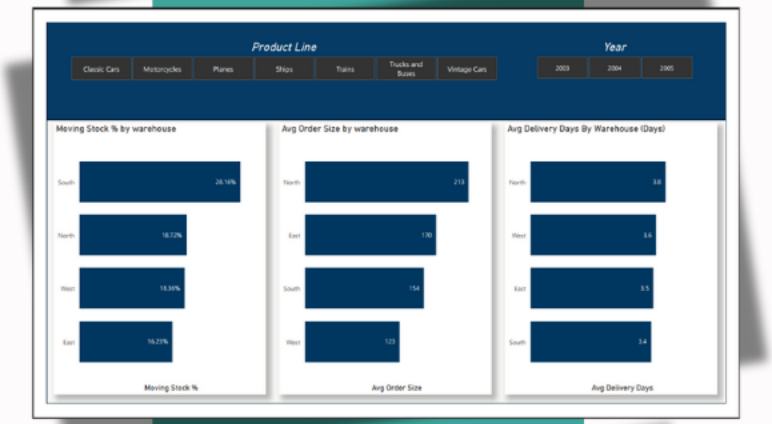
Strategic Warehouse Consolidation

Multi-Platform Data Integration

Predictive Inventory Optimization

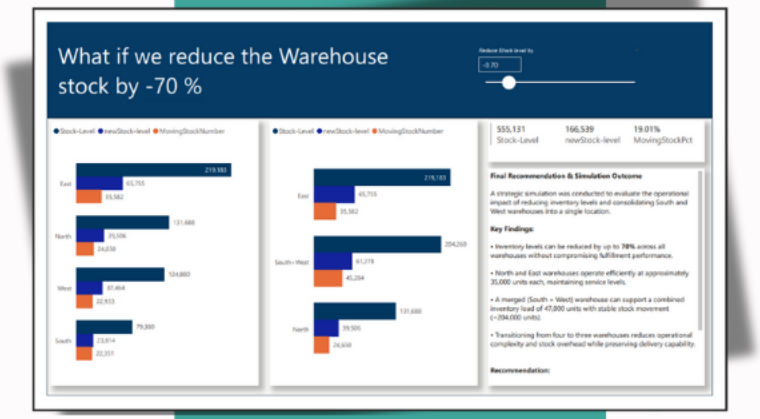
Interactive Business Dashboards





SMART INVENTORY OPTIMIZATION

A CROSS-PLATFORM BUSINESS INTELLIGENCE CASE STUDY



Elsayed Aboelmaaty
Business & Data Analyst | Power BI • SQL • Excel
github.com/elsayedg

see it on

Inventory Optimization & Warehouse Consolidation Strategy

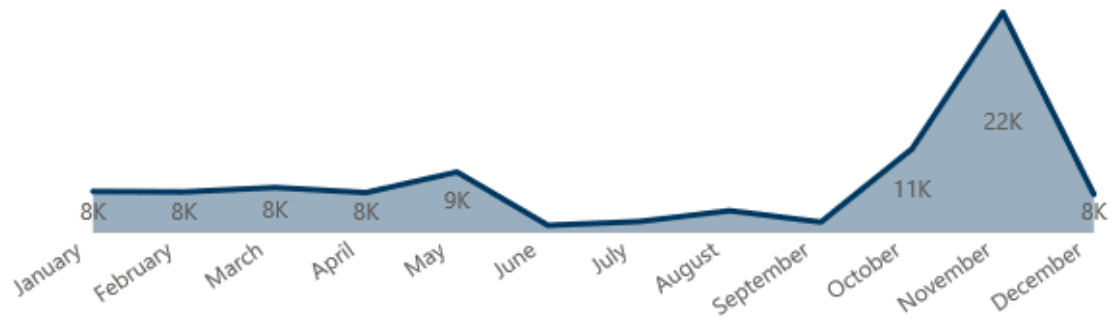
Warehouse: All

Product Line: All

Year: All

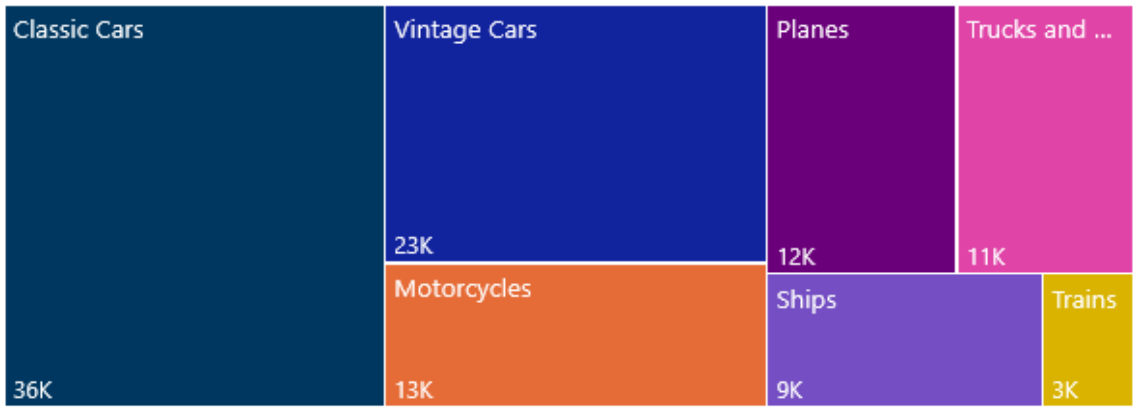
Turnover (Times)	Avg Delivery (Days)	Utilization (%)	Moving Products (%)
20.91	3.56	66%	19.01%

Orders Trend by Month



Orders by Warehouse

Orders by Category



Key Observations:

- **Monthly order trends are generally stable**, supporting predictable fulfillment cycles. However, a noticeable **demand spike in November** affects all warehouses and may reflect a seasonal campaign or promotional peak.
- **Warehouse South operates below capacity**, making it a candidate for consolidation or reallocation of stock to improve network efficiency.
- **Classic Cars lead product demand**, forming the backbone of orders and driving healthy inventory turnover.
- Underperforming product categories show limited contribution and could benefit

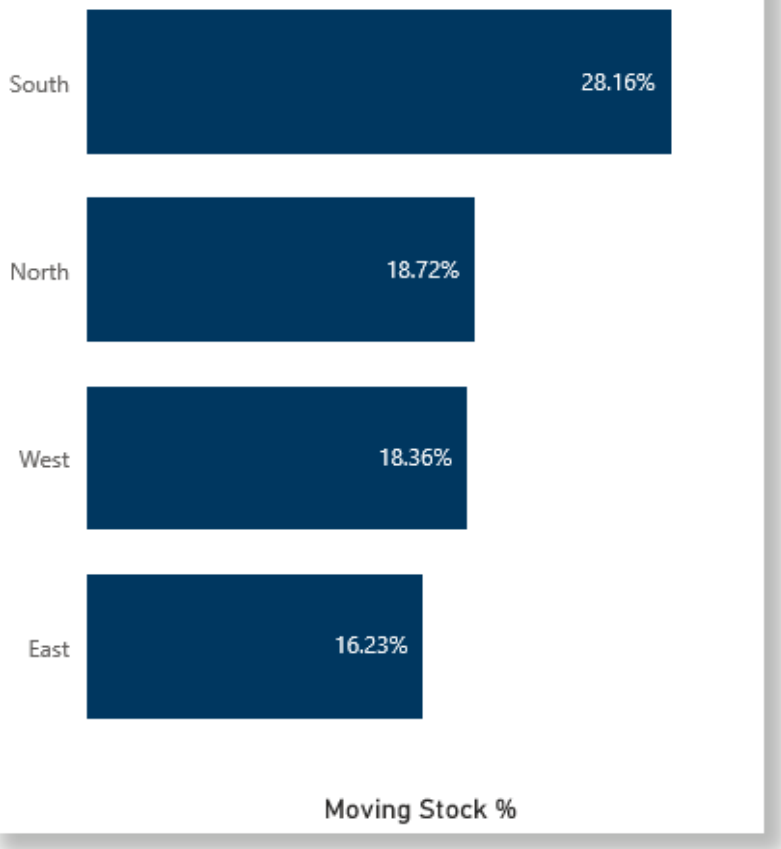
Product Line

Classic Cars | Motorcycles | Planes | Ships | Trains | Trucks and Buses | Vintage Cars

Year

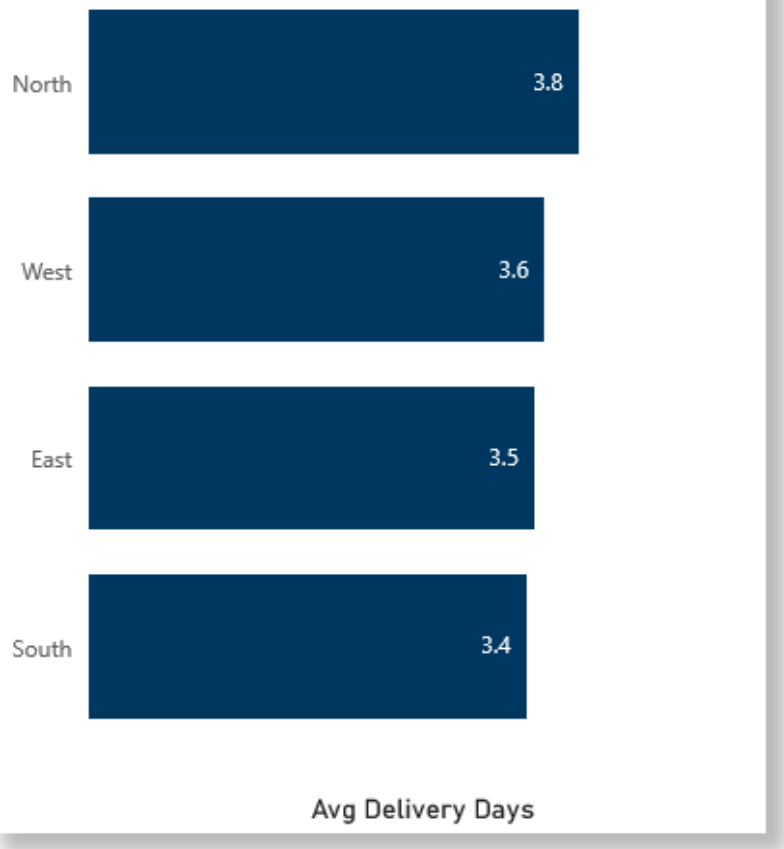
2003 | 2004 | 2005

Moving Stock % by warehouse



Avg Order Size by warehouse

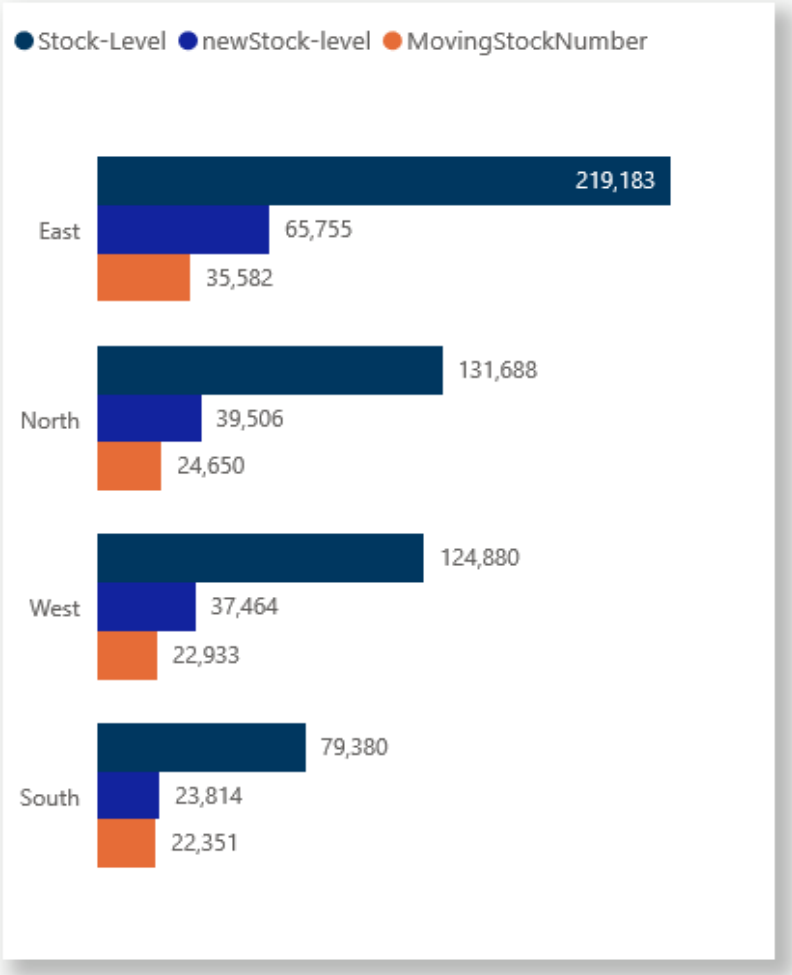
Avg Delivery Days By Warehouse (Days)

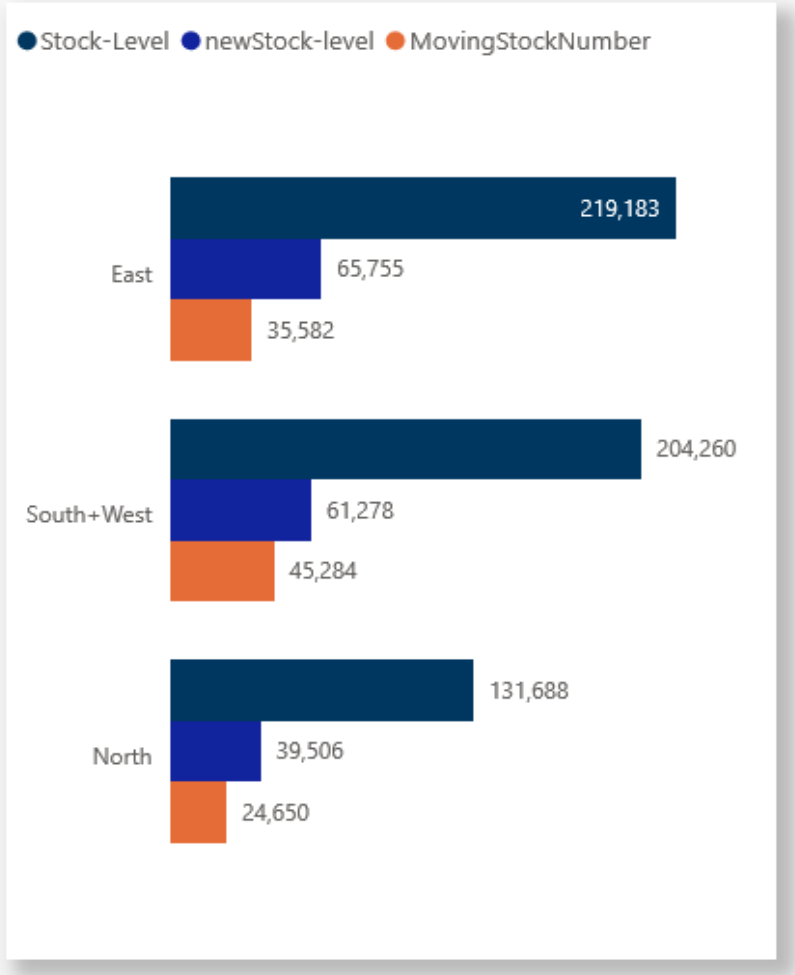


What if we reduce the Warehouse stock by -70 %

Reduce Stock level by

-0.70





555,131	166,539	19.01%
Stock-Level	newStock-level	MovingStockPct

Final Recommendation & Simulation Outcome

A strategic simulation was conducted to evaluate the operational impact of reducing inventory levels and consolidating South and West warehouses into a single location.

Key Findings:

• Inventory levels can be reduced by up to **70%** across all warehouses without compromising fulfillment performance.

• North and East warehouses operate efficiently at approximately 35,000 units each, maintaining service levels.

• A merged (South + West) warehouse can support a combined inventory load of 47,000 units with stable stock movement (~204,000 units).

• Transitioning from four to three warehouses reduces operational complexity and stock overhead while preserving delivery capability.

Recommendation: