Supply Chain & Inventory Optimization

Power BI Analytics Report:

1: Executive Summary:

The Supply Chain & Inventory Optimization dashboard provides a comprehensive view of inventory performance, sales trends, stock health, and profitability across warehouses and product categories. The objective of this solution is to reduce stockouts, minimize overstock, optimize working capital, and improve supply chain efficiency.

Key KPIs indicate:

- Total Sales: **1.05bn**
- Total COGS: **734.44M**
- Inventory Value: **193.68bn**
- Profit: **315.68M**
- Stockouts: **16**
- Sell-Through Rate: **0.67%**
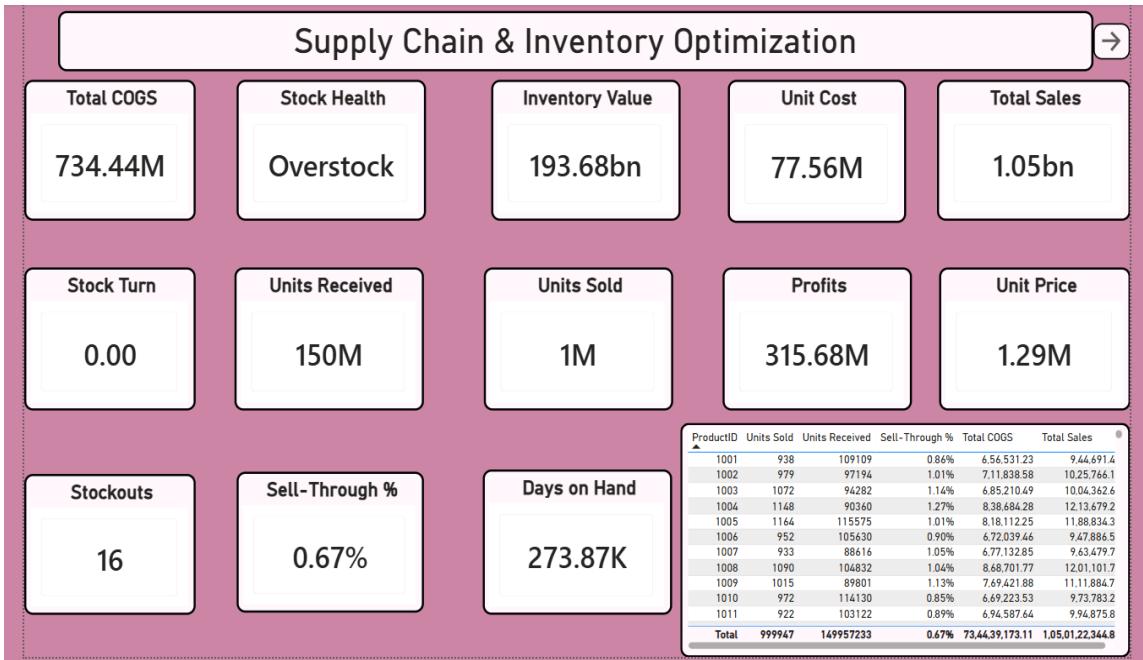
The current overall stock health status indicates Overstock, suggesting excess inventory relative to demand.

2: KPI Performance Overview:

This page highlights key financial and operational metrics:

- Total COGS
- Inventory Value

- Total Sales

- Unit Cost

- Units Sold & Units Received

- Profit

- Stock Turn

- Sell-Through %

- Days on Hand

Supply Chain & Inventory Optimization →

Total COGS	Stock Health	Inventory Value	Unit Cost	Total Sales
734.44M	Overstock	193.68bn	77.56M	1.05bn

Stock Turn	Units Received	Units Sold	Profits	Unit Price
0.00	150M	1M	315.68M	1.29M

Stockouts	Sell-Through %	Days on Hand
16	0.67%	273.87K

ProductID	Units Sold	Units Received	Sell-Through %	Total COGS	Total Sales
1001	938	109109	0.86%	6,56,531.23	9,44,691.4
1002	979	97194	1.01%	7,11,838.58	10,25,766.1
1003	1072	94282	1.14%	6,85,210.49	10,04,362.6
1004	1148	90360	1.27%	8,38,684.28	12,13,679.2
1005	1164	115575	1.01%	8,18,112.25	11,88,834.3
1006	952	105630	0.90%	6,72,039.46	9,47,886.5
1007	933	88616	1.05%	6,77,132.85	9,63,479.7
1008	1090	104832	1.04%	8,68,701.77	12,01,101.7
1009	1015	89801	1.13%	7,69,421.88	11,11,884.7
1010	972	114130	0.85%	6,69,223.53	9,73,783.2
1011	922	103122	0.89%	6,94,587.64	9,94,875.8
Total	999947	149957233	0.67%	73,44,39,173.11	1,05,01,22,344.8

Observations:

- Units Received (150M) significantly exceed Units Sold (1M), indicating potential over-purchasing.

- Sell-Through Rate is very low (0.67%), confirming excess stock.

- Stock Turn is currently low, showing slow inventory rotation.

- Days on Hand is extremely high (273.87K), further confirming overstock conditions.
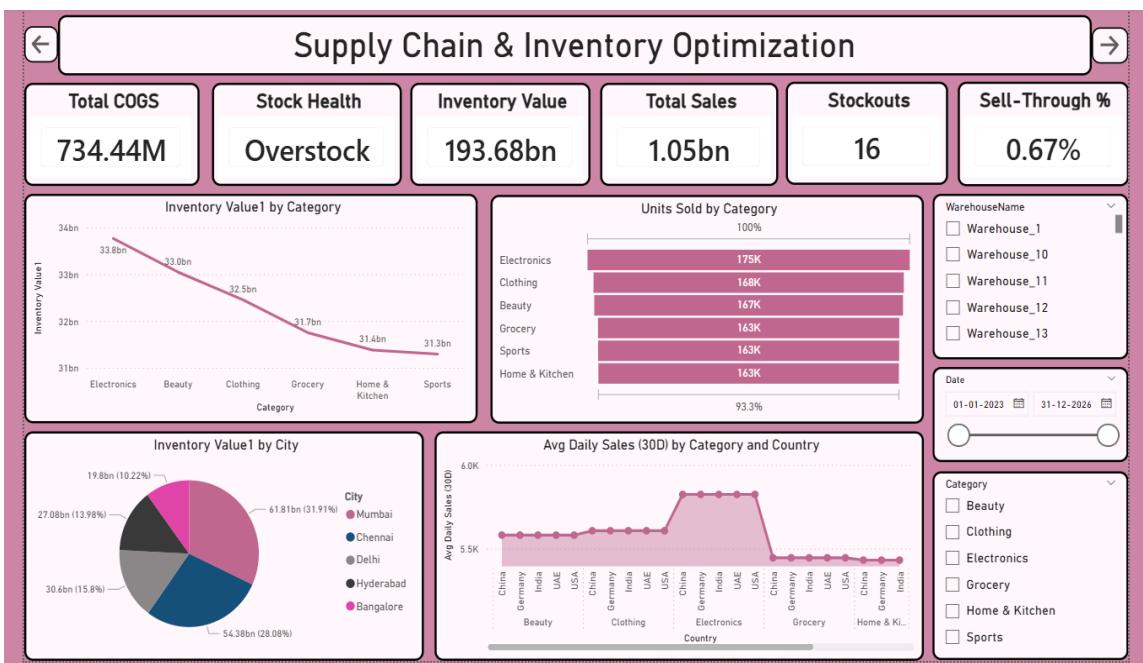
Business Insight:

Inventory capital is locked, and procurement strategy requires optimization.

3: Inventory Overview Analysis:

This page provides a macro view of:

- Inventory Value by Category
- Units Sold by Category
- Inventory Value by City
- Average Daily Sales (30D) by Category and Country

Key Findings:

- Electronics holds the highest inventory value.
- Mumbai contributes the largest share of inventory.
- Electronics and Clothing are top-selling categories.

- Average daily sales show variation across countries, indicating geographic demand differences.
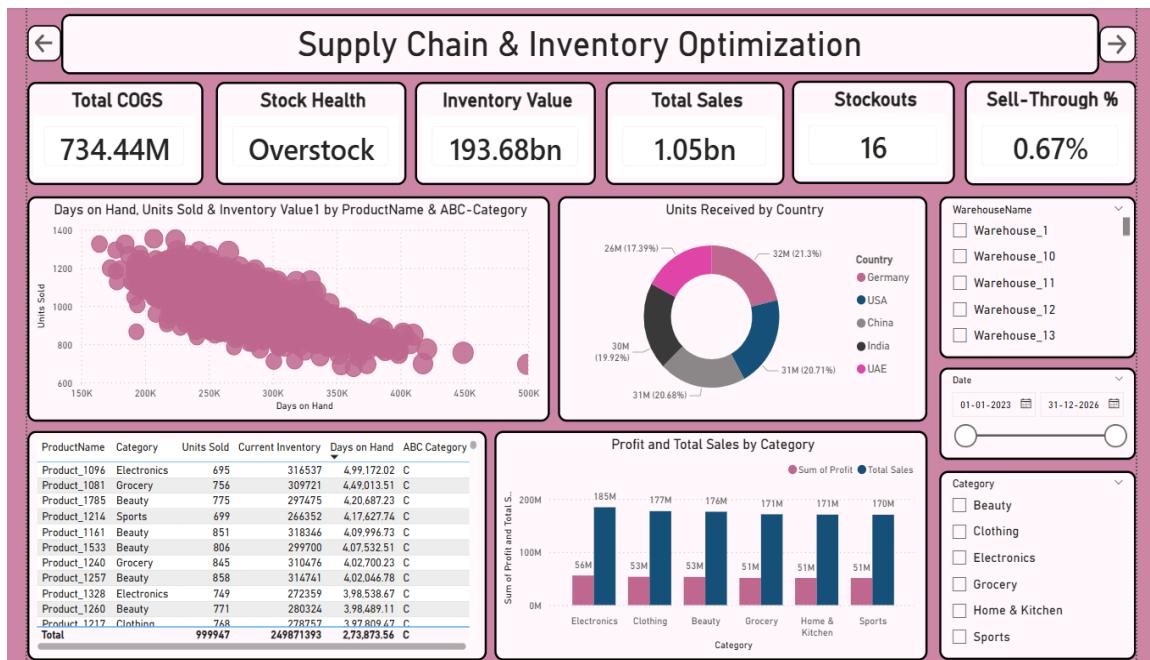
Insight:

Inventory allocation may need regional balancing.

4: Inventory Health Analysis:

This page evaluates product-level health using:

- Scatter plot: Days on Hand vs Units Sold

- ABC Classification

- Stock Health indicators

- Detailed product table

Findings:

- Majority of products fall into Category C.

- Many products show high Days on Hand with moderate sales → Overstock risk.

- A-category items require tighter replenishment control.
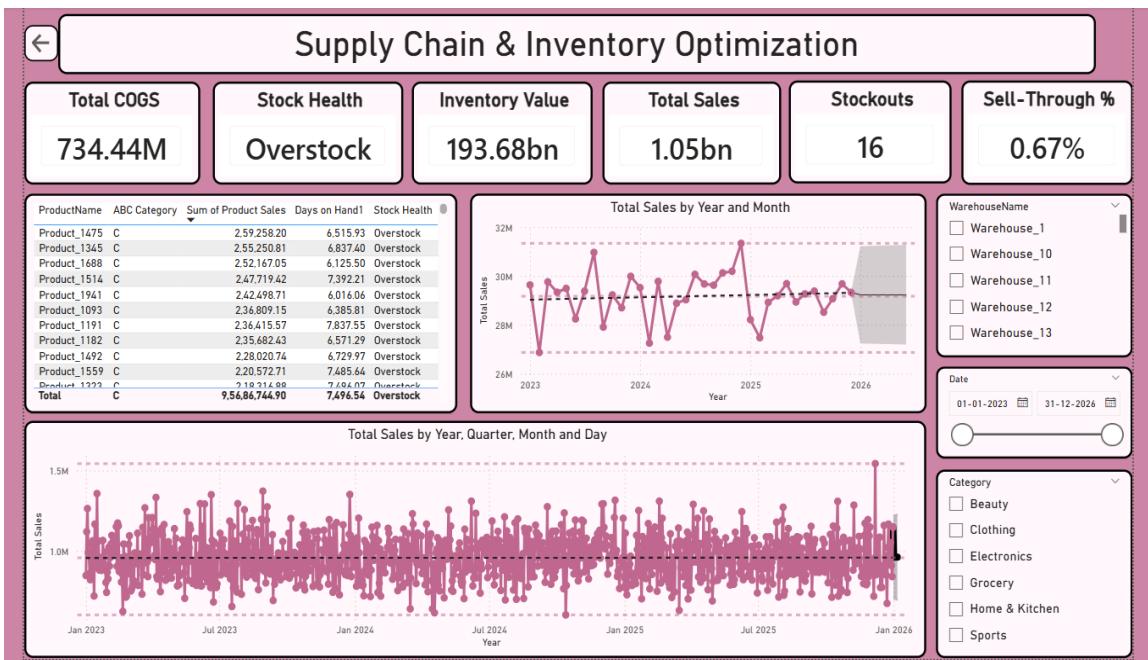
Insight:

ABC-driven replenishment policies should be implemented.

5: Sales Trend & Forecast Analysis:

This page analyzes:

- Monthly Sales Trend

- Yearly Sales Patterns

- Power BI Forecasting

Forecast Insights:

- Sales trend shows moderate growth.

- Future demand appears stable.

- Inventory levels exceed forecasted demand.

Recommendation:

Adjust procurement to match forecast demand.

6: Profitability & Category Analysis:

This page evaluates:

- Profit by Category
- Total Sales by Category
- Unit Price & Cost Analysis

Findings:

- Electronics generates highest sales.
- Profit margins are stable but could improve through better inventory turnover.
- Certain categories may require pricing adjustments.

Insight:
Profit optimization should align with inventory rationalization.

7: Strategic Recommendations & Conclusion:

Based on the complete dashboard analysis:

1. Reduce Overstock:

- Pause purchase orders for slow-moving items.
- Rebalance inventory across warehouses.

2. Improve Sell-Through:

- Implement targeted promotions for C-category products.
- Optimize pricing strategy.

3. Strengthen Forecast-Based Planning:

- Align procurement with forecasted demand.
- Use 30-day average sales for reorder logic.

4. Implement ABC-Based Inventory Control:

- A-products: Tight monitoring.

- B-products: Moderate review.

- C-products: Clearance or discount strategy.

Conclusion:

- The Supply Chain & Inventory Optimization dashboard provides a comprehensive view of inventory performance and demand trends.

- The analysis highlights significant overstock conditions driven by low sell-through and slow stock turnover. ABC classification and Days on Hand metrics enable better product prioritization and replenishment planning.

- Forecast insights support proactive procurement and inventory balancing decisions.

- Overall, the solution empowers data-driven supply chain optimization and improved working capital efficiency.