

## EV Charging OEM

(Inventory Model)

---

Built an **automated Inventory forecast model utilized** in Annual Sales and Operations planning process by leveraging data from various functional areas to **estimate inventory levels and related operating expenses**

# INVENTORY MODEL FOR ORIGINAL EQUIPMENT MANUFACTURER (OEM) FOR EVs

## ABOUT THE CLIENT

Client is an **Original Equipment Manufacturer (OEM) for Electric Vehicles** serving customers in over 50 countries, with manufacturing plants across the globe

### SITUATION



- Client **lacked visibility into the financial impact of inventory levels at various warehouses across product lines**, due to lack of consolidated data repository for Sales, Operations and Finance functions
- Merilytics partnered with the client to set up automated reporting of inventory levels and **build an inventory forecast model**, to help track inventory levels, and have clear view of the operating expenses

### VALUE ADDITION



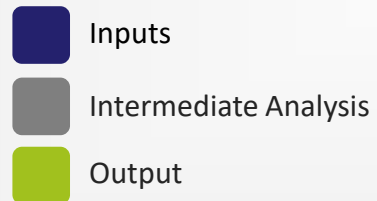
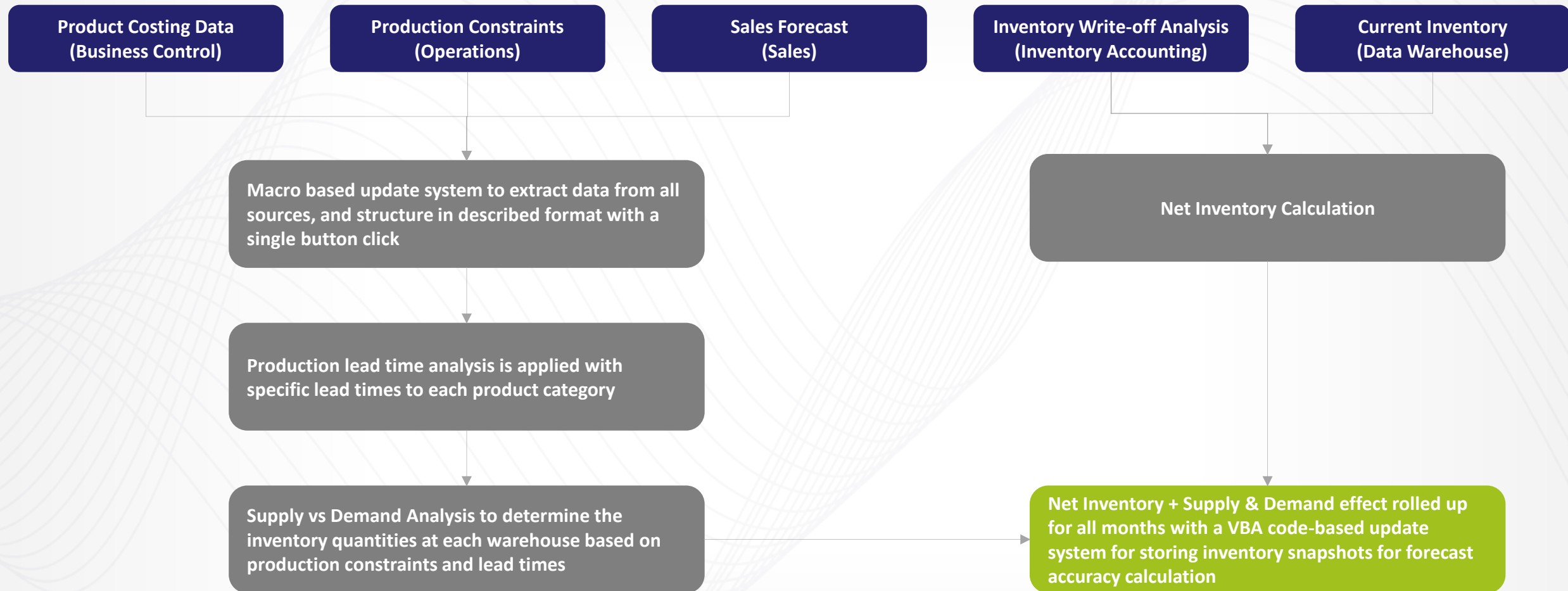
- Created an **automated tool that consolidates data from source systems of Sales, Operation and Finance functions** (SAP, Salesforce, Sage and offline Excel files), to create a single central repository of the data and **set up the data/analytics models to support the reporting/analytics**
- Set up a **model that provides visibility into current inventory levels and forecasts the future inventory positions for the next financial year**, by analyzing forecasted demand for all product categories against lead times, and production constraints led by semi-conductors shortage

### IMPACT



- Results from the analysis **helped in estimating the operating expenses for Annual Operations Planning, and streamlining the supply chain processes such as sourcing, production planning, raw material procurement etc.**
- Consolidated data repository led to **flagging of inventory accounting discrepancies of €10M**, that helped streamlining the accounting and provisioning modules
- Automated data consolidation processes **helped save up to 40 FTE-hours per month**

# METHODOLOGY/ APPROACH



# OVERVIEW OF CURRENT INVENTORY LEVELS AND FORECAST OF FUTURE REQUIREMENTS

ILLUSTRATIVE

Quantity	Unrestricted	Transit/Transfer	Quality Inspection	Restricted Use	Blocked	Returns	Provision	Total
	5.6M	20.0K	4.0K	0	467	405	.5M	3.0M

Value	Unrestricted	Transit/Transfer	Quality Inspection	Restricted Use	Blocked	Returns	Provision	Total
	€ 50.5M	€ 1.2M	€ 1.6M	€ 0	€ 3.4M	€ .2M	€ 15.5M	€ 25.3M

Overview of Current Inventory levels

Production Scenario Case Selection

Best Case  
Base Case  
Worst Case

Update Source Data

Update Current Inventory Level

Update monthly forecast roll-up

Macro based buttons to update the model

Location	Month 1 (FCST)	Month2 (FCST)	Month 3 (FCST)	Month 4 (FCST)	Month 5 (FCST)	Month 6 (FCST)
Warehouse 1	€ 10,895,208	€ 10,153,855	€ 10,613,370	€ 15,113,948	€ 15,113,948	€ 15,113,948
Warehouse 1 (Excluding Provision)	€ 4,970,330	€ 3,955,680	€ 4,409,613	€ 6,375,636	€ 6,375,636	€ 6,375,636
Product Line 1	€ 5,924,878	€ 6,198,175	€ 6,203,757	€ 8,738,312	€ 8,738,312	€ 8,738,312
Product Line 2	€ 3,230,658	€ 2,630,276	€ 2,467,637	€ 2,467,637	€ 2,467,637	€ 2,467,637
Product Line 3	€ 464,104	€ 297,756	€ 297,756	€ 595,597	€ 595,597	€ 595,597
Product Line 4	€ 1,275,567	€ 1,027,647	€ 1,644,219	€ 3,312,401	€ 3,312,401	€ 3,312,401

Warehouse 2	€ 109,122,180	€ 98,947,325	€ 88,312,737	€ 73,177,353	€ 58,041,751	€ 42,905,931
Warehouse 2 (Excluding Provision)	€ 107,122,180	€ 96,947,325	€ 86,312,737	€ 71,177,353	€ 56,041,751	€ 40,905,931
Product Line 1	€ 6,201,175	€ 6,206,757	€ 8,741,312	€ 8,741,312	€ 8,741,312	€ 8,448,299
Product Line 2	€ 2,633,276	€ 2,470,637	€ 2,470,637	€ 2,470,637	€ 2,470,637	€ 5,044,302
Product Line 3	€ 300,756	€ 300,756	€ 598,597	€ 598,597	€ 598,597	€ 611,462
Product Line 4	€ 1,030,647	€ 1,647,219	€ 3,315,401	€ 3,315,401	€ 3,315,401	€ 3,417,606
Product Line 5	€ 3,000	€ 3,000	€ 3,000	€ 3,000	€ 3,000	€ 595,806
Product Line 6	€ 3,000	€ 3,218	€ 3,436	€ 3,654	€ 3,872	€ 4,090
Product Line 7	€ 98,950,325	€ 88,315,737	€ 73,180,353	€ 58,044,751	€ 42,908,931	€ 24,784,365

Monthly Inventory forecast at warehouse and product category level

# MONTHLY INVENTORY ACTUALS VS FORECAST PERFORMANCE

**ILLUSTRATIVE**

Location	Month 1				Month 2			
	Forecast	Actuals	Delta	Variance	Forecast	Actuals	Delta	Variance
<b>Warehouse 1</b>	<b>€ 10,895,208</b>	<b>€ 11,590,091</b>	<b>€ 694,883</b>	<b>6.0%</b>	<b>€ 10,153,855</b>	<b>€ 9,901,026</b>	<b>-€ 252,829</b>	<b>-2.6%</b>
Product Line 1	€ 5,924,878	€ 6,922,878	€ 998,000	14.4%	€ 6,198,175	€ 5,892,517	-€ 305,658	-5.2%
Product Line 2	€ 3,230,658	€ 2,827,214	-€ 403,444	-14.3%	€ 2,630,276	€ 2,818,108	€ 187,832	6.7%
Product Line 3	€ 464,104	€ 559,999	€ 95,895	17.1%	€ 297,756	€ 279,123	-€ 18,633	-6.7%
Product Line 4	€ 1,275,567	€ 1,280,000	€ 4,433	0.3%	€ 1,027,647	€ 911,278	-€ 116,369	-12.8%

Monthly Review of Inventory  
Actuals vs Forecasted expenses