Case Study: A Large Chemical Company

PROVIDING A GLOBALLY OPTIMIZED PLANNING SOLUTION FOR THE SUPPLY CHAIN OF A LARGE CHEMICAL COMPANY

Client: A Large Chemical Company

The company is one of the world’s top producers of ethylene and polyethylene and a leading supplier of aromatics, styrenics, specialty chemicals, plastic pipe and other polymers. Headquartered in Texas, US, the company has its presence across the globe with ongoing projects for Qatar, Saudi Arabia and the US. The US $3.4 billion company employs approximately 4,700 employees worldwide and manufactures over 70,000 consumer and industrial products.

Need

The large chemical company wanted to implement a globally optimized planning solution to their complex supply chain comprising 5 plants, 20 terminals and 300 customers including swap/exchange customers. The business units - Aromatics & Styrenics (A&S) Liquids and Normal Alpha Olefins/Poly Alpha Olefins (NAO/PAO) needed more efficient and effective planning tools.

They wanted to:
- Gain global visibility into its supply chain plans
- Build a flexible environment to suit changing business requirements
- Have a platform for future initiatives like Production Planning and Detailed Scheduling (PP/DS) and Global Available To Promise (GATP)
- Optimize the global supply chain
- Identify opportunities for lowering costs and increasing profitability
- Reduce the time needed to prepare the supply plans
- Improve customer service
- Lower inventory investment
- Provide a means for supply planning reporting from SAP’s Business Warehouse (BW)

Solution

Bristlecone implemented SAP’s Advanced Planner and Optimizer (APO). This included the implementation of Demand Planning (DP) and creation of ready-to-implement design for Supply Network Planning (SNP), Inventory Planning (IP) and BW.

DP

As part of the DP implementation, Bristlecone enabled the development of a consensus based demand plan by facilitating the collaboration of cross functional teams (internal and external). The plans were built using a single, globally-consistent supply chain model to support creating multiple simulations and arrive at the best plan for the company. The demand planning solution was implemented for A&S and NAO/PAO business units, from scratch, in a short span of 3 months.
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Based on Bristlecone’s understanding of the company’s unique challenges, the following custom-built improvements were made:

- **Forecast simulation** – Enabled the generation of multiple forecasts based on what-if analysis to allow planners to analyze situations based on exceptions without having to remodel a whole new process or interfere with production data.
- **Lesser & better interfaces** – Facilitated fewer interfaces (SAP BW – SAP APO, APO DP – APO SNP), faster and easier portability (download into excel etc) and interfacing with non-SAP systems when required.
- **Forecasting models** – Custom built models catering to different product families, within and across different business units which had varying demand patterns.
- **Consistent master data across all modules** – Ensured DP is in sync with Finance, Manufacturing, Sales and Marketing.
- **Flexibility in forecasting** – Allowed viewing and adjusting of forecasts at different rolled-up levels, and also ran a statistical forecast at these levels.

**SNP**

Bristlecone provided a ready-to-implement design for SNP that could generate a feasible short-to-medium term supply plan to fulfill the expected customer demand. The SNP algorithm was formulated to utilize existing inventory, determine production requirements, distribute production across multiple plants, explode the Bills of Materials (BoM’s) and organize the procurement of semi-finished goods or raw materials in one comprehensive planning process. Bristlecone had also incorporated what-if analysis capabilities to meet the specific requirements of the company.

Ready-to-use designs were also provided for IP. The design includes inventory targeting and safety stocking which would ensure the maintenance of inventory levels in close correlation to the demand.

BW generated reports related to DP and SNP: The various reports delivered included daily sales vs. plan report, forecast report and reports of inventory, sales, production, by product, product line and hierarchy.

**Benefits**

- Provided decision support to businesses on the strategic, tactical, and operational planning levels
- Enabled collaboration between all supply chain partners and processes - from the initial forecast, order receipt and stock monitoring, through final shipping of the product
- Provided single source for forecast
- Reduced forecast errors
- Enabled consensus based planning
- Enabled simulative analysis (event based) and alert monitoring
- Evaluated the supply chain network’s efficiency and provided an optimized design to cater to the existing planning situations

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