

Optimising Inventory and Service at Clariant

Client Situation

Clariant is a top 50 chemical organisation and a global leader in the speciality chemicals market. The organisation constitutes a hundred group companies, employing approximately twenty thousand people. Clariant Pigments and Additives (PA) is the global leader in colorants, and a key player in additives and waxes market niches. It is one of four Clariant divisions, accounting for one quarter of revenue consisting of 17 manufacturing sites across all continents.

Over the past few years the market in which PA operates has become increasingly commoditised, increasing pressure on price competitiveness and supply lead times. In response the PA division has migrated to a supply from stock business. Like many organisations the division has based its stock and manufacturing policies on forecasts but has struggled to get this aspect of its business under control. Over-forecasting ties up working capital by increasing inventory, while under-forecasting results in stock outs and poor customer service.

Despite substantial investment in the Sales and Operations Planning (S&OP) process, and technology improvements linked to SAP, PA struggled to maintain forecast accuracy above 65%. Scheduling manufacturing on the basis of an inaccurate forecast was proving costly, both in terms of working capital and poor customer service, as the wrong mix of product built up in the wrong locations globally. The PA management team acknowledged something had to change and, with support from WCI, they decided to adopt an alternative approach to global distribution and production requirements planning.

WCI Solution and Model for Success

WCI's solution was a radical departure from the sector's pursuit of forecast accuracy.

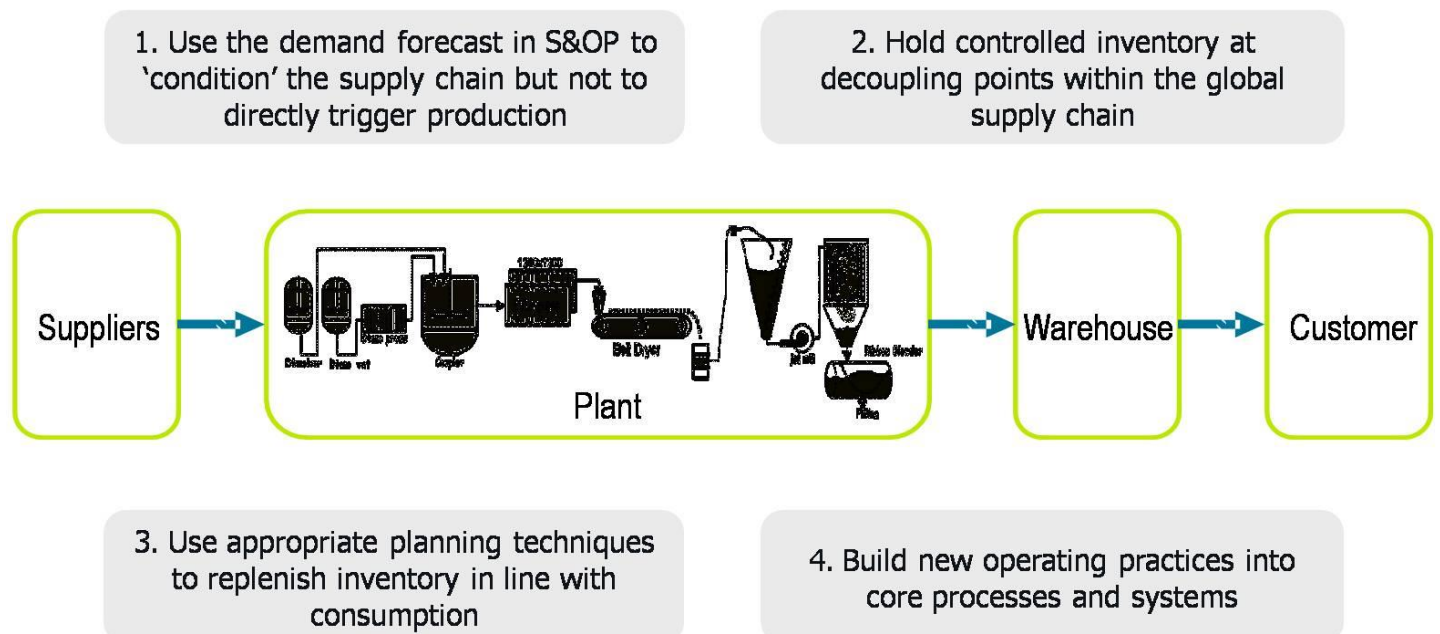


Figure 1: The 4 Step Approach to Optimising Inventory and Service

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The first change was to alter the way in which the demand forecast is used. This is now used to create a single agreed plan through the S&OP process to 'condition' the supply chain i.e. understand the overall demand levels and production resource requirements. Critically, the forecast is no longer used to directly trigger production. Actual consumption now triggers the replenishment of products. As a consequence the need for a manually intensive 'bottom up' global demand forecast is minimised and the use of future and historic demand, market and product trend information can be utilised.

Secondly, working closely with a dedicated Clariant team, the global supply chain was analysed and decoupling points determined where 'controlled' inventory could be held. WCI's approach to identifying appropriate decoupling points is based upon practical considerations such as the ability to store products and the capability to balance manufacturing processes. An analysis of the impact of the decoupling upon the overall inventory levels is then used to optimise the supply chain design.

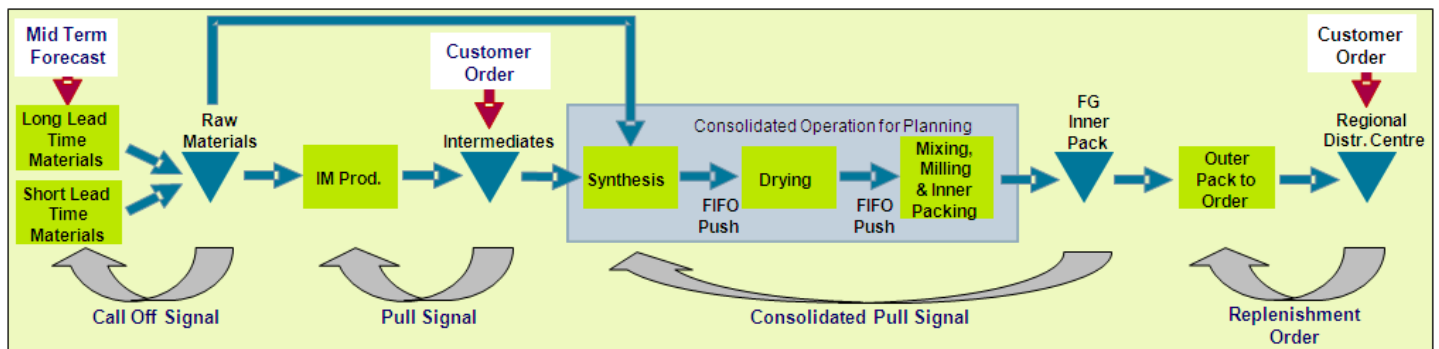


Figure 2: Supply Chain Representation with Controlled Inventory Points

Demand pull replenishment techniques were then selected to re-connect the decoupled supply chain and trigger replenishment in line with actual consumption. In the very few cases where the market would accept production lead times, Make To Order was employed, and where supply from stock was required planning techniques such as Kanban, Re-Order Point and Campaign were deployed. The precise selection of these particular replenishment techniques was based on the volume and statistical variability of each product.

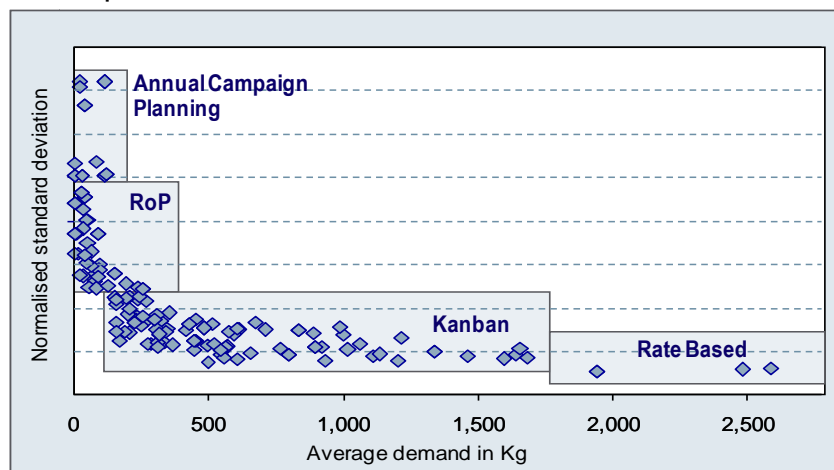


Figure 3: Example Volume Variability Analysis from a PA Plant

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In employing demand pull replenishment, Clariant found that the products with predictable volumes became 'self managed' enabling planning effort to focus on products which need more attention.

To ensure success the new operating framework was built into the core business processes and systems. A 'planning cockpit' has been developed within SAP to visually display replenishment requirements for Kanban and RoP products so production priorities can be easily determined. Simple, focused metrics ensure inventory and service performance, as well as operational compliance, is transparent, enabling management to take immediate action to correct the process or operational behaviours.

In parallel the S&OP process has been refined to ensure the system is dynamic and stays aligned to market conditions and supply chain capability. This is achieved by formally reviewing the replenishment parameters on a quarterly basis.

Benefits

The first plant to go live has delivered a 60% reduction in inventory with a designed service level of 95%. Globally inventory is expected to reduce by more than 20% in the full year.

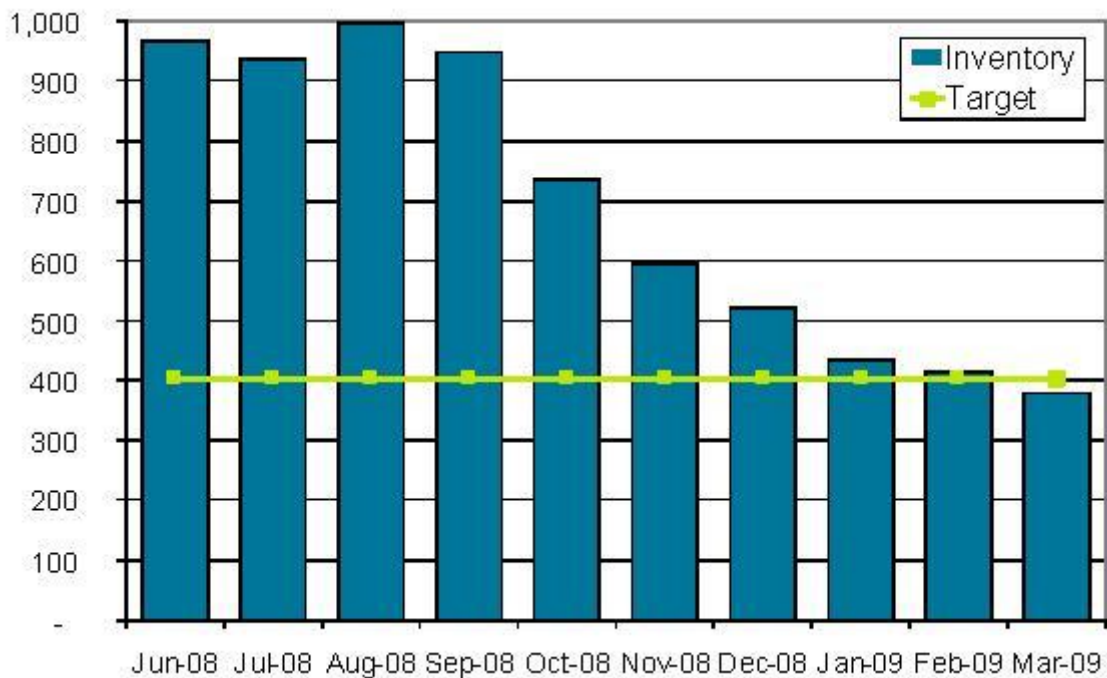


Figure 4: Inventory Reduction Delivered from Initial Plant

The design and implementation of new operating models such as this is complex and deep supply chain expertise and experience is essential. Not only must the new design be technically correct, but behavioural resistance may well need to be overcome in order to ensure success. Certainly at Clariant PA Division there has been a dramatic shift in planning mindset during the lifespan of the programme and now that the new system is in place its day to day running is simple and the benefits are self-evident.