

Advanced Inventory Management – The Path to Inventory Management Excellence?

“Information is substituting inventory” is a much-lauded statement in today’s Supply Chain Community discussions. But the information on the non availability of desired goods does not provide much benefit when trying to meet the customer demand.

Inventory Management is one of the “hottest” topics in Supply Chain Management. After describing the relevance of inventory management in today’s supply chains this article outlines important steps towards Inventory Management Excellence with special respect to the role of Inventory Optimization Software.

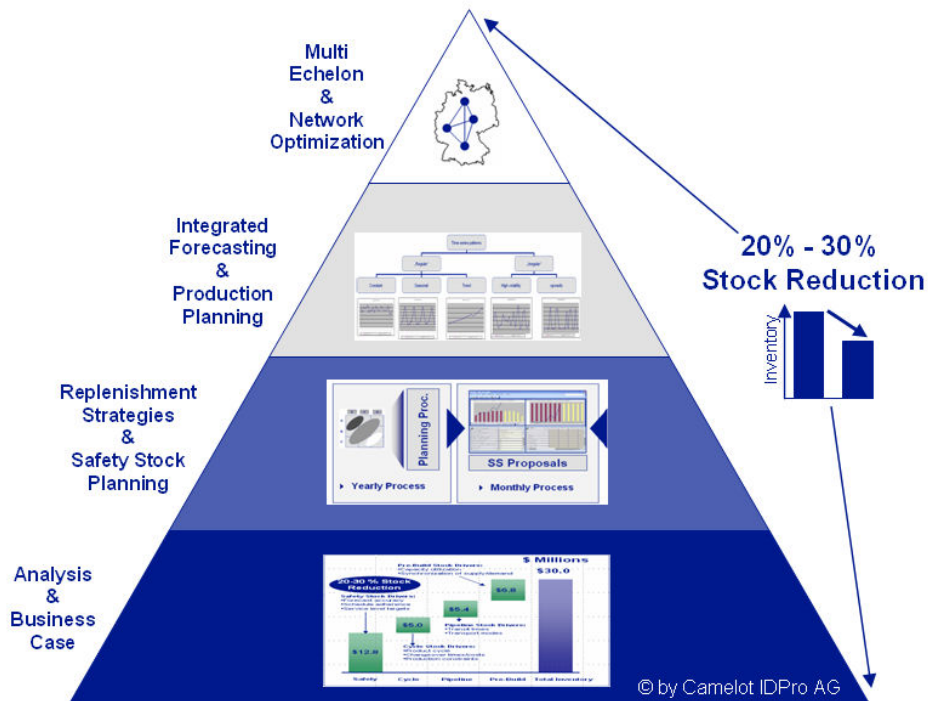
Today’s chemical Supply Chains are confronted with the challenge to manage complex production operations on the one hand, with rising customer requirements and increasing demand volatility on the other. The easiest way to overcome this dichotomy is to decouple the supply and demand side by using enormous inventory levels. This of course does not lead to a sustainable competitive position in nowadays business environment as the inventory situation of most chemical companies provides an enormous opportunity to reduce asset costs.

Viewing inventory as an enabler in terms of running optimal operations, while providing superior customer service level, is only one part of the coin. Analogically, a pure cost center approach on Inventory Management falls short of the requirements of superior Supply Chain Management (SCM) practices.

From the strategic point of view SCM is about the decisions concerning centralization and decentralization, direct and indirect processing, and postponement and speculation. Derived decisions mainly determine the order

penetration point within the Supply Chain, where inventory is usually located. Therefore a company's performance on Inventory Management, besides operating costs and provided service level, can be seen as an ideal indicator on the overall SC performance. But to determine the optimal inventory level for the whole Supply Chain one has to consider which amount of which product has to be stored at which stage with respect to multiple variables and constraints (e.g. lead times, costs, demand volatility and service level). For chemical companies this implies the consideration of the allocation of inventory levels for packed, bulk and intermediate goods and special constraints like perishability, silo and tank capacities. The leaner the organization becomes the higher its supply chain operations are vulnerable to disruptions or external influences. Therefore safety stocks should be debated as one tool of an overall approach to mitigate substantial supply chain risks like the possibility of a plant break down or demand fluctuations.

Nethertheless a growing number of chemical companies as well as economic scientists have estimated and validated a realistic inventory reduction by 20-30% by applying state-of-the-art Inventory Management approaches. The following steps represent the outline for a company's way towards Inventory Management Excellence:



Steps towards Inventory Management Excellence

First of all, companies have to create awareness on the potential which emerges from the application of Advanced Inventory Management approaches and thus the company-wide ambition to improve the current performance. At this stage a company has to evaluate the current inventory situation and management capabilities to identify potential improvements. Therefore an analytic tool which is able to support a business case calculation is needed.

Secondly, outdated procedures like the “days of supply” commitment have to be substituted by product/segment-specific replenishment strategies. This requires a product and customer segmentation approach considering specific demand volatility, values and revenues. Furthermore the parameters for the identified segments and respective replenishment strategies have to be optimized. Today’s multi-echelon Inventory Optimization Systems have adopted this step in their static safety stock planning procedures. Inventory systems, therefore, must support these steps with functionality like continuous inventory control, tracking of order fulfilment and the potential of parameter optimization. The capability to simulate different

scenarios and evaluate effects by varying parameters, heuristics and probability distributions, is essential to let the responsible planner “feel” and understand his actions.

The third step to enhance the inventory situation would be the implementation of a proactive and dynamic Inventory Planning Process in order to avoid shortage and long positions in advance. Therefore functionality like detailed time series analyses and the support of multiple forecasting methods are mandatory. Additionally actual sales trends, product life cycles and upstream capacity requirements must be considered by introducing an integrated Sales & Operations Planning Process to enable demand driven adjustments on Production Planning decisions.

Embedding central Supply Chain Management governance responsible for the overall inventory situation would be the final step. To avoid passive reactions on KPIs, the use of multi-echelon software solutions provides a valuable enhancement for centralized decisions on the overall inventory allocation. Therefore, every stage within the value chain safety and cycle, pre-build stocks and all relevant parameters like lead times or lot sizes have to be processed into comprehensible results. At this stage Inventory Optimization Software can not calculate ideal solutions. Nevertheless guidelines for different improvement scenarios should be provided. These have to be evaluated within complex simulations to prepare decisions on inventory allocation and network configuration.

Most of the available Inventory Optimization Software enables companies to reduce costs in a very reasonable way but their dynamic multi-echelon tools only target the “short run”. Therefore, gaining sustainable competitive advantages through Advanced Inventory Management is more than using a black box providing static and dynamic heuristics improving local or even company wide stock levels. As software is accessible to anyone, a company needs an integrated approach towards Inventory Management which includes the ambition, the knowledge, the organizational ability and adequate processes to stay ahead of competitors. As outlined in the preceding paragraphs, improvements of the current inventory

situation in the chemical industry can be quickly reached by using Inventory Optimizing Software. The secret of transferring the current inventory practice into sustainability is to improve the whole Supply Chain Organization. Therefore, Logistics Information Systems can provide a valuable support if they are adoptable to the companies' needs on their steps towards Inventory Management Excellence.

The secret of sustainability is not just to use software but to be in the (excellent) position to challenge it.

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Camelot IDPro AG

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