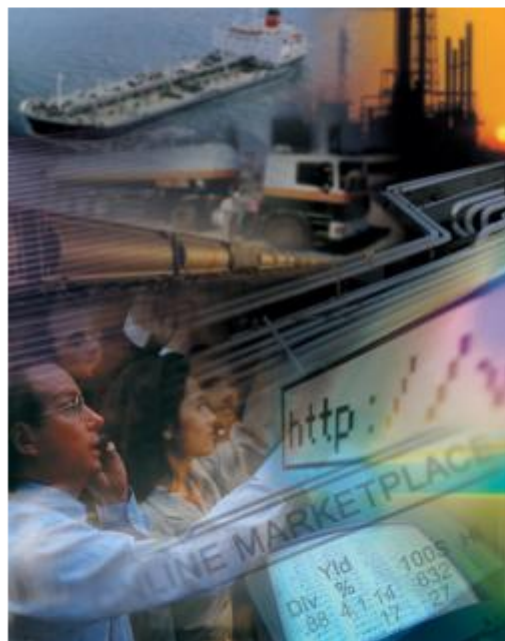


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# Six key links in the supply chain

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**Laura Rokohl looks at how companies can optimise their supply chain operations through six key areas: improve customer service, decrease inventory, optimise production, be agile, reduce costs and manage materials**

Outstanding customer service sets the standard for specialty chemical companies to differentiate their value proposition around the world. As oil prices remain low, a chain reaction has opened up opportunities to improve margins and strengthen market position. Chemical companies are optimising assets through cost reduction logistics, segmenting demand versus supply strategies and tackling complexity. Managing the unknown more effectively and being more flexible across the organisation will reap greater rewards.



With increasing pressure to respond to demand and provide quality products on time, smart businesses are optimising six key supply chain areas and embracing cutting-edge software to achieve competitive advantage.



Despite volatility and uncertainty, the chemicals market is projected to grow significantly in the near future. As competition increases, best practices and innovative technology adoption remains key to competitive advantage. Chemical companies in the US are increasingly focused on emerging regions to capitalise on business potential. China, on the other hand, is expected to increase in population over the next ten years resulting in more internal consumer demand for differentiated products that are specialty chemicals related.

Specialty chemicals are mainly manufactured in chemical plants using batch processing techniques. Products are typically high value with many specification variations and differentiators. The major product segments in this sector include paints and coatings, adhesive sealants, dyes and pigments, industrial gases, resins and plastic additives - all manufactured at predetermined and scheduled intervals.



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By being more demand-driven, business can maximise market potential while mitigating risk. To do this effectively, organisations must address six key links in the supply chain to achieve best practices:

**1. Improve customer service:** Customer service levels are measured by on-time shipments of the right quality product in the appropriate quantity.

**2. Decrease inventory:** Demand-driven chemical companies are able to optimise their inventory and reduce inventory buffers, which are typically kept at higher levels than necessary in order to maintain good customer service levels.

**3. Optimise production:** Production lines need to perform smoothly to ensure batch product quality is maintained within specifications. Having an effective supply chain management system that can optimise batch sequencing means production is more likely to run efficiently, less time is spent in setups and clean-outs, and delays or disruptions can be addressed proactively, before they can impact customer orders or incur unnecessary expedited transportation costs.

**4. Be agile:** The ability to respond quickly to planned and unplanned supply chain shocks (i.e. equipment failures, raw material availability, labour shortage, stock-outs, unexpected demands, new orders, etc.) is essential to remaining profitable. By being equipped to analyse different responses to the unexpected, companies can choose the most appropriate response to issues and take corrective action that secures plant profits and meets customer contracts.

**5. Reduce costs:** Procurement, working capital, inventory storage, distribution and labour are key areas to potentially reduce supply chain costs.

**6. Manage materials:** Managing fluctuating raw material costs is especially important to specialty chemical manufacturers in order to set the right price expectations to customers. Robust planning and effective communications will protect customer relationships, which can have a significant impact on margins.

### Completing the chain

Cutting-edge, end-to-end supply chain software improves forecasting, enables greater collaboration and assists with customer prioritisation. Empowering operations with easy to use planning and scheduling tools facilitates better decision-making to respond quickly to disruptions in plant operations.

Many companies have adopted AspenTech's supply chain software solutions as the link to optimise end-to-end supply chain capabilities. Aspen Supply Chain Planner can navigate supply chain complexity and identify problems in the plan that needs urgent attention. The intuitive interface enables planning to be performed easily so that Planners can determine the optimal production plan and maximise the potential of assets across the network. Using powerful analysis capabilities, Planners can develop and evaluate an unlimited number of 'what-if' scenarios to quickly optimise inventory management, minimise transportation costs and balance supply with demand. This can be done knowing that the software tools accurately model production activities with sufficient fidelity to allow the Planner to accurately and realistically evaluate alternatives.

Aspen Plant Scheduler is a dynamic tool that enables Schedulers to react to operational changes within minutes. Crucially, Schedulers can personalise their workspace, simultaneously view inventory levels and immediately see the impact of changes for a common group of production activities or facilities. This greater visibility means they have access to information they need to gain detailed insights into production scheduling, such as raw material availability, equipment constraints, batch dependencies and, ultimately, make better decisions to manage the plant schedule more effectively.

In addition, the Campaign Manager feature in Aspen Plant Scheduler can be used to easily define preferred sequences for each production facility, enabling the entire sequence to be scheduled all at once when appropriate for a particular asset.

### **Profitable value chain**

Specialty chemicals companies survive based upon their ability to react quickly to market forces and offer added value, such as impeccable service, quality products and on-time deliveries. Therefore, chemical companies require knowledge of best practices and on-going innovation to help differentiate their business and stand out from the competition.

Having a holistic view of the supply chain network means it is possible to build an optimal procurement, production, distribution and inventory plan, which will profitably meet customer demands. With integrated planning and scheduling software, plant complexity is mitigated and key decision-makers can easily analyse all costs and constraints to ensure a globally optimal plan.

To meet financial targets, integrated supply chain software helps companies cut costs and produce products faster and more efficiently to meet demand. By focusing on asset optimisation and tackling the six key areas of best practice, chemical producers can gain the upper hand and significantly improve customer service across the entire value chain.

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