

# Staying Competitive

In Specialty Chemicals Business Challenges are Enormous, Companies Need to Be Agile

**Players and Slayers** – The economic picture for the specialty chemical industry remains uncertain. Numerous complex challenges continually threaten to 'slay' the business of chemicals operators on a day-to-day basis. To be a leading 'player' today, overcoming these challenges is crucial to stay competitive and ensure the entire supply chain is optimized.

Expanding portfolios have caused the number of products to grow, thereby requiring the responsiveness of manufacturing plants to improve. Supply chain leaders need to evaluate issues affecting their business where operational 'slayers' can kill profitability, so they must make adjustments to keep the operation sustainable and be able to respond quickly to customer demands. It is important to identify some of the main challenges that harm the business in order to put in place appropriate measures to safeguard commercial targets.

## Regulation Through the Chain

Government regulation results in strict controls being implemented to assure precise batch and lot traceability, as well as stringent quality control and testing procedures. In the specialty chemicals sector, major and minor cleaning is required to ensure that no contamination exists between batches. The quality control effect is further exacerbated because stringent control procedures are not only required on finished products, but also for raw materials and packaging materials. Compliance is, therefore, essential in the industry.

## Lack of Decision Support Tools – Manual Planning and Scheduling

Many organizations still utilize manual methods to complete planning and scheduling functions. Significant levels of automation exist in transaction support systems and in the control or execution area. An overwhelming number of chemical producers use Microsoft Excel or Access to manage aspects of their supply chain. This results in an environment where planners are saddled with manual data gathering, which can increase the risk of errors. With-



Laura Bokohl  
Supply Chain Manager,  
AspenTech

out a sales and operations planning (S&OP) process in place, companies have limited ability to profitably align supply with demand. They lack the ability to evaluate scenarios and respond quickly to unplanned events, spending more time managing data and fighting fires instead of performing meaningful analysis. The use of spreadsheets for tracking data, performing data manipulation or assisting with analysis through the use of reports and graphs has been extensive. This has led to the creation of "islands of automation" where decision support tools have been used to address specific issues. However, these tools are often "stand-alone" with data either entered manually or through a spreadsheet front end. A significant weakness is that these tools are often only understood by the primary user. The resulting "silos of automation" often fail to meet planning and scheduling function needs. The inability to see the whole future operational picture results in an inconsistent strategy and decisions are sometimes only based on current hot issues.

## Forecasting Uncertainties

Major shifts in demand patterns are often caused by major events. This might include launches of new products, the expiration of patents, the appearance of generics and announcements by regulatory boards. Most of these events are known in advance by all players in the market. Pricing can also create major swings in both short and long-term demand. An adversarial relationship could then develop between manufacturers and distributors – the distributors may order maximum quantities prior to a price increase or producers may attempt to time price increases at the precise point when distributors have maximum inventories, leaving the latter little room to stockpile products at the original price.

## Hedging Behavior

Hedging is possibly the most damaging and costly part of current plan-



ning and scheduling practices. This involves the build-up of safety stocks due to the uncertainty of future demand, the lack of understating capacity or a lack of ability to provide catch-up capability if an equipment failure occurs. Planners and schedulers avoid risk by preparing for the worst case scenario. The downside of this strategy is that it can result in both under-production of product required and over-production of unwanted product.

## Overcoming the Slayers – Investing in Technology

The best tools available on the market today offer specialty chemicals companies the opportunity to carry out the full spectrum of 'what if' analysis. These capabilities help them streamline workflows, reduce costs and reach faster, more informed decisions. Operational planning models can have a significant impact on sourcing transportation and inventory policy decisions. In every supply chain, there are activities that must be initiated in anticipation of future demand. To maximize performance, these activities must be planned with the best available information. Improvements in forecasting and demand planning can reduce the need to carry excess

safety stock or have spare capacity sitting idle. In a fully integrated supply chain, production operations should be closely linked with demand management, so a company's operational plan can adapt quickly as demand changes.

Demand management encompasses several different time frames. At one end of the spectrum are new product planning, marketing, product positioning, product consolidation and other activities that create demand in the marketplace. At a more operational level is the challenge of predicting short-term requirements and using assets to effectively satisfy demand. The process of developing accurate projections of market demand and continuously updating them as circumstances change is known as operational demand management. Companies deploying software tools can typically realize significant margin improvement of 4% – 20% by increasing capacity 3% – 5%, improving customer service 5% – 10%, improving first quality production 5% and reducing costs 4% – 6%. Many leading specialty chemical companies have adopted aspenONE Supply Chain to drive operational excellence by addressing inefficiencies in end-to-end processes to achieve first quality production, minimize in-

ventory and allow rapid innovation. These tools enable companies to optimize trade-offs between customer service, inventory levels and manufacturing costs, accelerate process innovation and time-to-market for new products through improved collaboration between process development and manufacturing.

Advanced Process Control enables manufacturers to optimize production operations, providing greater agility in responding to market demands. The solution set facilitates process and product consistency by minimizing variability and facilitating consistent manufacturing execution with a solution that features both commercial and technical scalability. Companies deploying aspenONE Advanced Process Control can increase throughput, improve product quality, reduce energy and raw material usage and increase overall operational efficiency while keeping the process between safe limits of reliable operation. Using better supply planning strategies and tools will overcome the limitations of commercial demand visibility and help develop staff talent with easy to use tools. Crucially, supply planning must integrate with scheduling at the operating level and the key 'player' in the game is to ensure that the final supply plan flows

through to the formation of a principal schedule that enables detailed execution plans.

## Better Sales & Operations Planning

The role of an effective supply chain planning tool in the S&OP process is to focus on business-wide supply and inventory planning, specifically determining "where to make what." It involves allocating production across various plants while minimizing transportation and operating costs. As volatility increases in the market and lead times shrink, chemical manufacturers must increase their focus on the value of supply planning and support the sales and operations planning decisions. The best tools provide web-based S&OP analytics for enterprise-wide reporting and access to data and analysis during the planning process. These capabilities allow users to attain visibility into their current situation by combining data from their ERP and production systems, as well as results from their planning and scheduling tools for a complete picture of their supply chain.

## Players Maximizing Profit

In today's specialty chemicals industry, business challenges are enormous. To be a successful player, companies need to be agile and responsive to fluctuations within the market, as well as react quickly to disruptions within their own operations. Get the business model right and you will achieve targets and make significant profit – get it wrong and you stand to lose money and miss the commercial opportunity. Through leading-edge software technology, the players can combat operational slayers to optimize performance, align processes, maximize profit and achieve competitive advantage.

## Contact:

Laura Bokohl  
AspenTech  
Reading, UK  
Tel: +44 1189 226400  
info@aspenTech.com  
www.aspenTech.com



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