Extending Sales and Operations Planning to Logistics

A path to better reliability for chemicals manufacturers
Today’s chemicals industry supply chains are more complex and global than ever before. From a North American perspective, increasing supply lines (due to the rise of lower-cost manufacturing options in Asia and Eastern Europe) have increased the risk and uncertainty associated with managing supply chains. Add to this the recent supply disruptions due to global economic growth uncertainties, debt crises in the developed world, natural disasters, and tightening markets for freight assets in North America, and a supplier’s commitment of reliable, consistent supply becomes an ever-growing challenge.

In 2010, Accenture, in collaboration with the American Chemistry Council and TrueChoice® Solutions, conducted a study of what drives decisions around selecting suppliers.1 The study sought to highlight areas of opportunity in the buyer-supplier engagement. Reliability of supply ranked as the most important factor that influences a buyer’s decision, after product quality and innovation to improve reliability/quality. It is noteworthy that price preferences ranked 10th. These findings should suggest to logistics managers that they will need to be more focused than ever on confirming reliable supply to their existing customers, and enhancing their company’s reputation for reliability in order to attract new customers.

Confirming reliable supply is a broad-ranging business metric and may mean different things to different functions within an organization. Typically, performance against this measure falls within the scope of the logistics function within the supply chain. Therefore, how can the logistics function improve the reliability of supply to customers? The answer lies in the organization’s ability to balance accurately the need or demand for scarce transportation assets to deliver products to customers against the organization’s access to or supply of transportation assets.

Leaders in the chemicals industry have long recognized that a cross-functional S&OP process—one that unites sales, marketing, supply chain, manufacturing and finance around a single number plan—is a critical component of improving business performance. However, what we have found is that in most instances the planning of supply against demand stops at the manufacturing plant, once those assets are optimally balanced. To fully realize the benefits of an S&OP process, an organization needs to consider the entire supply chain of production through delivery. Having balanced production assets and increased inventory levels means little unless an organization can reliably deliver that product to the customer.

Supplier reliability ranks among the top preferences for chemicals industry buyers as they evaluate their choices of suppliers. Adding a logistics component to a traditional products-based Sales & Operations Planning (S&OP) process presents a key opportunity for chemicals companies to extend traditional planning processes to include the supply and demand of scarce logistics assets in order to improve supplier reliability. Logistics assets represent the critical ‘last mile’ of delivery to the customer and thus are as important as product availability itself. In short, a Logistics Sales & Operations Planning (LS&OP) process can yield a more reliable supply experience for the customer and, therefore, should be integrated into a broader S&OP process.

It is our view that a more robust S&OP process is required, one that incorporates the demand for and supply of freight logistics assets, as well as that of production and inventory—a process we call LS&OP.

While LS&OP represents an extension of similar thinking around traditional S&OP processes, it nonetheless requires elements in terms of people, process and technology design. This paper illustrates how a chemicals logistics organization can think about, structure and develop its own LS&OP capability to achieve increased reliability metrics.

Why now?

What makes LS&OP so relevant now? As a consequence of the recent economic downturn, we have observed carriers that have downsized or rightsized their fleets to match demand. Others have simply exited the transportation industry altogether. These actions have resulted in a more limited supply of carrier options, which requires the manufacturer to be more diligent than ever in projecting demand to carriers. Failure to do so means shipping with non-preferred carriers on a spot basis—a costly side effect. Meanwhile, from a demand side, segments of the economy are beginning to show improvement. Therefore, there is an increased need for manufacturers to focus their efforts on reducing supply risks as they relate to transporting their goods to customers. The risk of not doing so could result in higher freight prices or premiums, or, even worse, no ability to supply a customer, thus damaging the reputation for reliable supply. Robust supply chain planning introduced in LS&OP helps companies build closer carrier relationships and integration, which yields better demand signals closer to the beginning of the supply chain. Tightening capacity in the marketplace is evident in terms of the quantity of available tractors in the marketplace as shown in Figure 1, relative to the total number of companies available and ready to ship trucks as shown in Figure 2.

Figure 1. Tightening truck capacity (population figures in millions).

![Tightening truck capacity](image1)

Figure 2. Trucker business failures (five or more trucks).

![Trucker business failures](image2)

Sources: A.C.T. Research and BBTCM analysis.

Source: Donald Broughton, Avondale Partners.
Accenture believes too little attention has been placed on integrating traditional S&OP activities with those of logistics. While the idea itself of leveraging S&OP concepts in the freight logistics world is not entirely a novel one, there is a general sense that designing and executing an LS&OP process may be too difficult for most. Building a process that includes organizing demand data from disparate systems (product volume forecasts, as well as transit mode demand within a region), estimating available container capacity to the manufacturer (whether owned, leased, dedicated or allocated), and linking financials to plans may seem challenging, but it is possible. In fact, it has been done successfully at a major chemical company for its North America tank truck business. The value that was realized is shown in Figure 3.

By re-imagining LS&OP as analogous to the more traditional products S&OP, chemical companies are now able to proactively share relevant demand forecast data with their strategic logistics providers in an effort to build stronger collaborative ties between parties. By implementing a logistics planning process that is both proactive and longer-term focused, chemical manufacturers can now better prepare their carriers for any forecasted upturns or downturns in demand for freight containers. Moreover, the logistics purchasing function is able to identify more quickly areas of concern where demand exceeds supply and can make plans to proactively line up additional capacity.

Such an LS&OP capability results in less fire fighting and allows more time to develop solutions to trim down spending on premium freight, for example. If done well, benefits from implementing an LS&OP capability also can include higher levels of service and availability from the carriers, as well as lower spending on premium freight.

Figure 3. Logistics S&OP value proposition.

<table>
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<th>Logistics S&amp;OP Value Proposition</th>
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<tr>
<td><strong>Business benefits</strong></td>
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<tr>
<td>• Reduced spending on premium freight.</td>
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<tr>
<td>• Improved service and reliability.</td>
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<td>• Improved working capital.</td>
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<td><strong>LS&amp;OP benefits</strong></td>
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<tr>
<td>• Single number plan, visibility into consistent data.</td>
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<td>• Extend planning horizon to better anticipate and respond to changes in demand or supply.</td>
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<td>• Focus is on the market trends enabling the business to be more aware and stay ahead of the competition. This enables us to build customer relationships in a forward-looking way.</td>
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<td>• Integration of strategic plans with tactical and execution-level activities.</td>
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Key requirements of a successful LS&OP capability

Fundamentally, critical success factors of an LS&OP capability are similar to those of a traditional S&OP capability: change the mindset, develop the processes and enable with tools.

Primarily, LS&OP is a change in organizational and planning mindset. Planning should move from a supply-driven to a demand-driven mentality, and the planning time horizon should be extended beyond the short term. Focus also should be placed on tightening the linkage of the logistics organization [with what? among all logistics groups?] and to the internal business units. The new mindset should reflect the robust nature of planning the supply chain, from the company’s logistics organization all the way to the customer’s dock. In this way, a manufacturer can then truly understand how demand and supply for products translates into demand and supply of freight logistics capacity.

Next, develop the core demand, supply and balancing processes that are required for conducting LS&OP. The mindset is formalized and codified through these core processes. They should include strategic, tactical and operational work processes. Unlike traditional container management and forecasting processes, LS&OP has a longer-term focus. An effective LS&OP process should, for example, include data-sharing arrangements with partners and strategic carriers. Once the mindset and work processes are established, data-driven tools should be used to enable individuals in executing the work processes. An example of a work process might look something like the process shown in Figure 4.

Finally, a data mining and analysis tool must be built to facilitate the creation of the unconstrained demand plan. The first step is gathering requirements from the intended stakeholders and/or owners of the tool, such as supply chain operations, logistics services purchasing and business planners. The tool must have the capability to view demand at a level that would make sense to the carrier base, such as origin and destination, product, and container type. The tool should have the capability to not only house historical shipments by lane, but also to produce a statistical forecast, a critical input to creating the unconstrained demand plan. A minimum of two to three stage-gates should be arranged with each of the stakeholder groups at the appropriate segment of the generated demand plan to validate accuracy. When the tool is built, and data integrity checked and validated, the data can then be released to internal planning teams and, ultimately, the carrier partners.

Figure 4. Example of an LS&OP work process.
While chemicals supply chains are becoming increasingly stretched, complex and risky, it is ever more important for a manufacturer to link its traditional product S&OP with a sound logistics S&OP process in order to promote reliability of supply to its customers. Reliability of supply is a crucial factor in determining the choices buyers make when selecting a chemicals supplier. Therefore, any S&OP process that does not also consider the supply and demand balance of freight logistics is missing the full picture, and is not optimally tuned to seek to achieve higher business performance. Following similar principles as executive-level products S&OP, a chemicals manufacturer must consider LS&OP as an important component of effective supply chain planning and customer service.

Conclusion
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