Tactical Logistics Management in Chemicals: All for One and One for All

In the chemicals industry, mid-term logistics poses an opportunity for competitive advantage.
A look into the world of logistics in the chemicals industry reveals an interesting state of affairs. Long-term logistics planning is largely in place to ensure there is infrastructure to support chemical companies’ needs for several years out. Short-term logistics runs pretty well, too, with transport and warehouse managers seeing to regular daily and weekly transportation needs.

In between the two extremes, however, is a gap in logistics planning. Some chemical companies sense it; others have yet to identify it. A fortunate few know the opportunity that mid-term logistics poses. To achieve logistical performance that is outstanding enough to be a competitive differentiator, these chemical companies and their logistics partners call to mind the phrase Alexandre Dumas’ sword-wielding heroes took as their motto in The Three Musketeers: “All for one, and one for all.”

In logistics terms, that means collaboration, mid-term planning, and more prolific information exchange to put the building blocks of tactical logistics into place. One major chemical company minimizes warehouse rental costs by holding monthly planning summits with its business units, logistics procurement, and logistics suppliers. Another chemical company reduces last-minute searches for transportation by tailoring logistics plans for specific ISO containers. Elsewhere, a global logistics supplier pinpoints the best hinterland connections from European ports by regularly assessing truck, rail, and barge costs and lead times.

These are examples of components in tactical logistics management. Unlike other industries, such as consumer goods, where perishable food products quickly traverse the supply chain, or automotive, where parts reach the production line just in time and in sequence, few companies in the chemicals industry unite their supply chains with mid-term logistics planning. There is a promising opportunity for those that do.

Tactical logistics management can save an average-size chemicals company up to $73 million annually through increased efficiencies and responsiveness; for the whole chemicals industry, the savings could surpass $9 billion.¹ Even more important, tactical planning and optimization can yield up to 4 percentage points of improvement in on-time, in-full delivery reliability. Single players that improve their logistics ahead of competitors can translate this advantage into more satisfied customers and increased sales.

To till this fertile middle ground, it helps to understand some of the factors driving the chemicals industry today, the barriers that chemical companies face when trying to respond to these conditions, and the actions they can take to optimize their mid-term logistics operations. In this paper, we draw from our extensive experience working with chemical companies on their supply chains and logistics. We also draw from the results of our Tactical Logistics in the Chemicals Industry survey of industry leaders to delve into these areas and offer recommendations for strengthening the supply chain with tactical logistics.²

¹ Cost savings is estimated at up to 0.6 percentage points of earnings before interest and taxes. The average chemical company with revenues of $12.2 billion (global top 100) leaves up to $73 million on the table every year when not having tactical logistics management in place. The entire chemicals industry could save more than $9 billion annually. This includes savings on both fleet assets (such as reduced rail tank-car fleets), transportation rates (such as avoiding costly spot rates), and transportation volume (through consolidation, for example). For this calculation, €1 is worth $1.24.

² A.T. Kearney conducted the Tactical Logistics in the Chemicals Industry survey in 2014 to explore current practices in tactical logistics optimization in the chemicals industry and to define the benefits and barriers all players must overcome in the logistics value chain. Survey results are based on more than 30 interviews with experts from supply chain, logistics, and logistics-procurement departments within leading chemical companies and LSP firms.
Mid-Term Logistics Is the Missing Link

The chemicals industry is in tremendous flux (see sidebar: Industry Trends Reveal Gaps). The bottom line here is that planning for responsive, flexible logistics capacity, securing access, and optimizing usage become key success factors for chemical companies going forward.

Tactical logistics management, as the layer between strategic, long-term design and short-term operations, fills a gap to respond to market trends (see figure 1).

Industry Trends Reveal Gaps

Several factors are pressuring chemical companies’ supply chains:

The industry and its chemical flow patterns are more complex. Buyers of chemical products wait longer to place orders. Their own supply chains are stretched, so just-in-time ordering helps them minimize commitments and inventory. Booming growth in wildcard regions causes swings in supply and demand. And, taking the total chemicals market into account, the share of smaller-unit specialty products, as opposed to standard bulk products, that flow through the system has grown as end-market applications become more specialized and diverse.

Capacity is challenged. While new capacity additions have intensified competition, concurrent restrictions and bottlenecks are making it hard to send product from A to B to C. Increasing regulations, such as limitations on driving hours, support safety but also constrain capacity. Hazardous materials, or those that need to be heated or cooled, add to the difficulty of finding appropriate transportation. Something as commonplace, yet onerous, as growing traffic congestion worldwide hurts as well.

Prices and availability of logistics services grow more volatile. As daily or weekly conditions fluctuate, available capacity swings and becomes difficult to predict and expensive to procure at the last minute.
Long-term supply chain design often includes:

- A time horizon of three or more years for major strategic decisions, such as the size, capability, and location of warehouses, distribution centers, and filling lines, and plans for using in-house or logistics service providers’ (LSPs’) assets
- A time horizon of one year or more for procurement of logistics capacity, such as tenders for major lanes and the definition of preferred lanes and routes within the network (some companies determine these on an as-needed basis)
- Optimizing networks with one-off, status-quo network analyses

Short-term logistics execution often includes:

- Shared service centers, which are established using economies of scale to process shipment orders that apply harmonized processes and systems
- Daily operations supported by transport management systems that offer optimization functionality for shipment consolidation
- Outsourcing partners to handle administrative logistics services to achieve scale and complement internal logistics expertise. Partners may provide capabilities for lesser known regions or specific processes, such as customs optimization, for example

We find that a highly detailed focus and even higher accuracy characterize chemical companies’ short-term logistics, but the information they rely upon is often available for very short horizons (sometimes less than one week). This pushes players into a reactive mode of operation. Tight timeframes leave little or no room for significant optimization. Hence, there is a need for mid-term planning.

The Building Blocks of Tactical Logistics Management

Mid-term planning addresses three areas:

1. **Capacity planning.** This essential block accounts for the growing volatility and short supply of services during seasonally critical periods, such as Christmas. To smoothen demand and supply fluctuations, strengthening the accuracy of forecasts and improving the flow of capacity-relevant information are key. This can be accomplished by working more collaboratively and transparently with LSPs and internal units. It starts with a review of long-term plans for annual and weekly volumes. As the mid- and short terms approach, logistics managers reach out to their shippers, which confirm or adjust production and warehouse plans to match actual shipping volumes and timing. Carriers come into the mix at this point, to confirm that they will send the needed equipment and drivers. This approach is known as available-to-promise and is commonly used when managing production assets in the chemicals industry.

   Shippers and carriers work directly with one another as well. Together, they can identify site-level constraints that may impede capacity and flexibility, such as excessive wait times for loading or overly rigid appointment windows. When shippers and carriers are well connected, it becomes markedly easier for them to share requirements and reallocate committed capacity for new lanes and volumes to accommodate last-minute customer
changes. Joint planning, for example, can give the LSP an extended window from pickup to delivery and enable it to best utilize capacity.³

2. Optimization. Once planning is underway, optimizing it is the next step. Proportions assigned to different carrier segments can be adjusted regularly to better respond to volatility and improve capacity utilization. For example, the U.S. head of logistics for a global chemical company told us that his firm analyzes its transportation needs quarterly and adjusts among lower-priced fixed capacity, medium-priced flexible capacity, and market-priced broker spot capacity where needed.

Each shipper’s and carrier’s situation is unique, of course, in terms of their committed volumes and supply chain characteristics, among other factors. Differentiating capacity in this way accounts for variability, and, at the same time, can lead to effective capacity consolidation and more flexible use of transportation modes.

3. Monitoring. Capacity markets do not tend to be regularly and systematically monitored, which leads to reactive logistics decisions. Actively evaluating capacity can help chemical companies’ logistics and supply-chain managers identify market developments as they appear and proactively take action. Monitoring brings other benefits, too. It can reveal actual utilization of fixed-capacity assets, such as internal and external warehouses and rail-tank cars, capacity available through frame contracts, and usage of full truckload (FTL) rates.

Putting these blocks in place can lead to notable improvements in delivery reliability. According to A.T. Kearney’s most recent Chemical Customer Connectivity Index (C³X), while chemical customers seem to have accepted market realities around product availability and pricing, they have consistently ranked delivery reliability as their most important buying criteria over the years (see figure 2). In fact, the survey showed that they are willing to pay up to a 5 percent premium to suppliers with strong delivery and product availability performance.

![Figure 2](image)

**Delivery reliability is chemicals executives’ most important buying criteria**

### How important are these buying criteria?

- **Availability**
- **Delivery reliability**
- **Price (per performance)**
- **Product performance and features**
- **New product applications**
- **Technical sales support**
- **Supply chain services**

![Graph](image)

Note: Rated on a scale from 1 (not important) to 5 (very important); percentages represent those that marked 4 or 5.

Source: A.T. Kearney Chemical Customer Connectivity Index (C³X)

³ To learn more about making chemical supply chains more efficient through pro-competitive collaboration between chemical companies and their LSPs, see chapter 4 of *Sustainable Chemical Supply and Logistics Chains: The Path Forward*. This report, released in 2013, includes the results of a study conducted by the European Petrochemical Association, Cefic, and A.T. Kearney, which reveals significant cost, service, and CO₂ emission benefits when members of the supply chain collaborate.
Getting in the Way of a Good Thing

In our survey, 70 percent of participants saw mid-term logistics as a vital advantage (see figure 3). One participant who has instituted such tactics told us: “We have improved customer satisfaction and loyalty by introducing proactive information flow to customers regarding logistical delivery constraint periods.” Another chemical company reduced transportation costs by increasing FTL share on small volume lanes. “We introduced fixed delivery schedules, which are automatically filled by our transportation management system,” its representative said. A third respondent told us, “To reduce firefighting in resolving the lack of transport capacities, we established logistics planning for specific ISO containers. This allowed us to increase productivity in our transport management operations.” (See sidebar: Strong Tactical Practices in Action.)

Figure 3
Tactical logistics management is highly relevant to most chemicals executives

How relevant does your company consider tactical logistics management?

- Highly relevant: ~70%  
- Medium relevant: ~20%  
- Not relevant: ~10%

Source: A.T. Kearney’s Tactical Logistics in the Chemicals Industry study

Strong Tactical Practices in Action

Here are three examples of effective, mid-term logistics practiced by chemical companies today.

**Differentiated capacity pricing.** A global chemical company regularly analyzes the structure of its transportation needs and balances its use of fixed, flexible, and spot capacity based on price. The firm monitors and tenders demand variability developments, adjusting proportions among different carrier segments on a quarterly basis.

**Pooling external storage.** A global chemical company has centralized its European external storage to gain better visibility into the capacity used by different businesses. Its shared-service center coordinates business-unit requests for extra storage and assigns it to external warehouses, thus ensuring available capacity and favorable cost synergies.

**Market information database for shipping.** One major chemical company established a global database for ocean transport that is fully integrated into its ERP system and is managed by a group within the central logistics department. It is a service to the company’s businesses for finding the best fit for loading dates, pre-carriages, or ocean sailings according to customers’ requested delivery dates. The database has helped to increase the fulfillment of yearly committed capacity contracts.
So why haven’t more chemical companies incorporated tactical logistics into their operations or achieved a company-wide holistic approach?

The answer is, it isn’t easy. Logistics is often decentralized, for one thing, with responsibilities set up by business units, regions, and modes. Transportation logistics is handled separately in Europe and the United States, for example, and further parties oversee surface, sea, and air, with specialized responsibilities divided among other areas, such as road versus rail, and bulk versus packaged goods. These different silos make a holistic approach difficult.

Companies know that a holistic system is important but have not yet tackled it (see figure 4). The head of supply-chain management for one chemical company indicated to us that such management has been on the company’s agenda for years, but they have not yet been able to implement it. Fragmented logistics responsibility and the need to optimize tactics already in place are challenges that other participants in our survey shared.

These companies revealed that they face barriers to tactical logistics optimization in three critical areas:

1. **Organizational alignment.** Probably the biggest barrier, chemical companies lack a strong interface between their logistics staff and the logistics procurement department. Without logistics demand information and the proactive updates that such an interface can provide, companies often gain valuable insights only after the fact.

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**Figure 4**

The chemicals industry has room for improvement in implementing tactical logistics management

“Does your company have a dedicated resource responsible for tactical logistics optimization?”

- Yes: 20%
- No: 80%

“Is there central transparency regarding which tactical practices are applied today in your company?”

- Yes: 10%
- Partially: 60%
- No: 30%

“Are identified good tactical practices rolled out for other regions and modes?”

- Yes: 20%
- Partially: 50%
- No: 30%

Source: A.T. Kearney’s Tactical Logistics in the Chemicals Industry study
Mutual trust and collaborative commitment between parties has yet to be established. Better optimization comes when LSPs are willing to share information about their network utilization with shippers, a step they often are reluctant to take, given their fear of losing competitive advantage.

Without someone responsible for tactical logistics management, opportunities and solutions to pain points go unrecognized.

2. Data availability. Many shippers concede that transparency into assets is not at the same level for logistics as it is for production. They lack a database to reveal real-time information about warehouse capabilities, current utilization levels, and cost.

Similarly, they lack logistics supply-market data. Logistics partners may provide some information, but chemical companies often do not sufficiently monitor supply capacity and price developments between tenders.

As one logistics procurement head told us, “We would happily share tactical logistics planning information with our LSPs, if we had it ourselves.”

Shifting resources to mid-term planning would reduce the need for firefighting. But many miss this opportunity by focusing too much on short-term goals.

3. Support for outsourcing excellence. Reliable demand information is hard to obtain in the tight timeframes of today’s dynamic chemicals markets. Instead, for one- to three-year tenders, companies just have historic data to share.

Yet, LSPs require more timely information for their price calculations. To ease this situation, shippers could provide them with regularly updated outlooks on expected capacity requirements for a given tactical horizon.

The growing tendency of chemical companies to outsource transactional-purchasing and logistics activities, such as tendering and transport management, to fourth-party logistics providers (4PLs) often widens the gap between business units and procurement. LSPs have found that the quality of tender information deteriorates as a result.

Historically, logistics has been viewed as a cost center. Compared to other levers that drive company performance in the chemicals industry, such as raw materials, energy, and regulation, logistics receives less attention and limited resources. In turn, these resources are pushed to their limits and logistics staff into firefighting mode to ensure timely deliveries. All hands go to operative logistics to resolve issues that arise because tactical planning is not in place. Shifting resources to mid-term planning would reduce the need for firefighting, yet many organizations remain stuck in this vicious cycle. They may be achieving decent performance by focusing on short-term optimization, so the potential that mid-term planning can bring may not be apparent. The opportunity for truly world-class logistics performance may be lost as well.
Three Keys to Comprehensive Logistics Excellence

To achieve logistical performance that is outstanding enough to be a competitive differentiator, it could behoove chemical companies and their logistics partners to work together for the common good, much like Dumas’ Three Musketeers. They use collaboration, mid-term planning, and more prolific information exchange to put the building blocks of tactical logistics into place.

**Bring the experts together.** On the corporate side, the three parties that are key to the collaboration are logistics planning, logistics operations, and logistics procurement. For mid-term, tactical planning, they will want regular exchanges and alignment.

Logistics procurement retains the lead in contracting logistics services, with other parties weighing in on specifications and information exchange. By having the various logistics experts in discussions, good ideas for making improvements have a higher chance of bearing fruit.

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Successful logistics performance requires working together for the common good.

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**Extend planning to logistics assets.** Translating sales and operational planning (S&OP) results into transportation and warehousing requirements can be a basis for freeing and optimizing bottlenecked capacities and for better leveraging market price fluctuations. S&OP is already applied to planning the use of production assets for the short, mid-, and long term. This information stream could be incorporated into logistics as well. Systematically translate production or, even better, distribution plans, into logistics plans. In the short term, augment detailed planning with evaluations of actual customer and transport orders. Market information from logistics suppliers will further enhance this planning.

**Improve end-to-end information exchange.** Outsourcing of tendering can divert time-consuming administrative tasks to a partner to free up procurement resources to focus on more value-adding tasks, such as supplier relationship management. Make it a requirement, however, that 4PLs work extensively with their customers to improve demand-information quality and that shippers establish ways of regularly sharing collaborative planning information with all concerned parties.

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The Questions to Ask

When demand suddenly fluctuates, the chances of chemical companies getting the capacity they need at the right price are much higher when they have secured that capacity and shared resources across their logistics team in advance. Otherwise, they may come up short with transportation or pay a premium for it.

Looking at the big picture, if a chemical company fails to plan short-term logistics, logistics staff will feel it fast. A lack of the right long-term logistics will make its presence known, too, especially when a chemical company has spent a great deal of money on infrastructure or agreements that do not work out. Now, the next area to consider is tactical logistics planning. Responding in the moment to today’s volatile chemical markets may be working for chemical
companies to a point, but it can divert them from the possibilities mid-term planning can bring, from alleviating the firefighting to conserving resources for short-term planning, instead putting them to more effective and profitable use for the mid- and long term.

Not sure where your company stands with this complex subject? There are six questions that your logistics staff can ask of their own areas, as well as of LSPs and chemical shippers:

- Does your company have transparency on tactical logistics capacity information?
- Is there a dedicated responsibility for tactical logistics optimization?
- Are logistics procurement, central logistics functions and businesses fully aligned and do they continuously share information?
- Is demand information systematically translated into logistics capacity requirements?
- Are capacity requirements regularly shared with procurement and LSPs?
- Are logistics supply side developments systematically monitored and leveraged to improve delivery reliability and logistics cost?

Answering no to two or more of these questions could make a strong case for the “all for one, and one for all” approach of tactical logistics planning. No swords, plumed hats, or tights required.

The authors wish to thank Raj Kumar (New York), Armin Scharlach (Berlin), Otto Schulz (Düsseldorf), Andrew Walberer (Chicago), Sven Rutkowsky (Düsseldorf), and Saurabh Tejwani (New York) for their valuable contributions to this paper.
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