Supply Chain Performance Excellence

Realizing potential within the supply chain to drive down costs and optimize service

A research study by Arthur D. Little shows that many companies are not currently taking advantage of Supply Chain Excellence Practices or are not doing so fully. Excellence Practices can help companies to identify the precise service levels below which any further decrease causes changes in the consumer's decision to purchase. With this knowledge, companies can develop supply chains tailored to the specific service needs of particular customer segments. The study also identified another leveraging method that is widely under-used: the Pull Principle, which can help to reduce cycle times and inventory. Only around one third of study participants had implemented a program to help suppliers make systematic improvements to their logistics performance. Arthur D. Little's experience shows that the use of the Pull Principle can raise the rate of complete, qualitatively flawless and punctual deliveries to 98% and also makes it possible to reduce supply chain costs by 20–30%.

Using the SPE-Index

Arthur D. Little uses the Supply Chain Performance Excellence Index (SPE-Index) to measure the efficiency of a supply chain and compare a company's performance to best practices. The index's structured questionnaire identifies six supply chain performance fields for evaluation:

- Key performance indicators
- Strategy & goals
- Supply chain processes
- Organization & qualification
- Technology & collaboration
- Sustainability & risk

Within this evaluation model a maximum of 1.750 points can be achieved. Companies with a high SPE-Index rating are those that have implemented Supply Chain Management Excellence Practices and, as a result, have higher levels of supply performance and lower supply chain costs than companies with lower ratings.

In the Arthur D. Little study, a technology company in the manufacturing sector achieved the highest current rating of 1.065 points. The average rating of 706 points shows there is a significant gap between those companies implementing supply chain concepts and best practices, and those that are not (see figure 1).

Undeveloped potential within the supply chain …

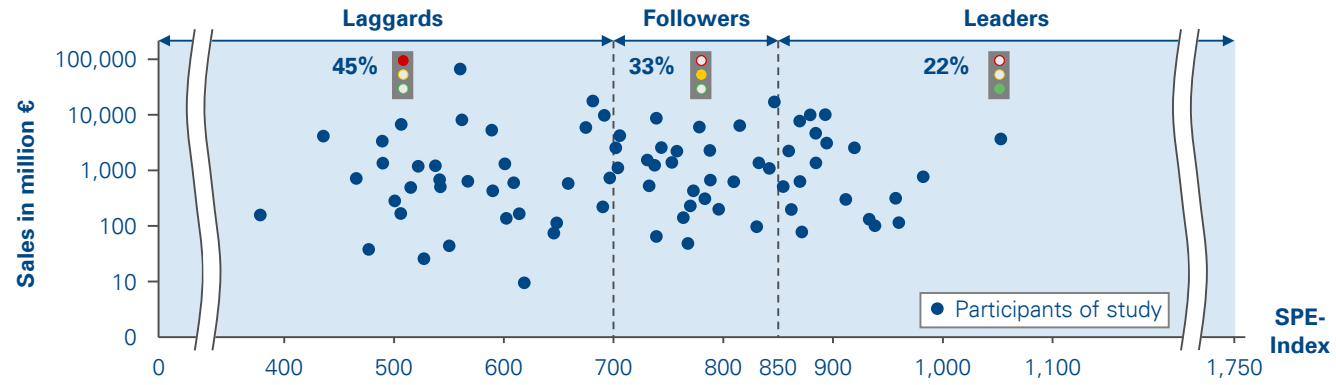
For companies with a low rating on the SPE-Index, Arthur D. Little identified two main reasons for poor performance and high costs within the supply chain:

- Lack of strategic alignment within the supply chain
- Lack of process integration beyond company borders

… is realized with Supply Chain Excellence Practices

This Viewpoint shows how best practice concepts and Excellence Practices can help companies with a low rating on the SPE-Index close the gap on those at the top.

Figure 1. Participants in the study distributed according to sales and SPE-Index



Source: Arthur D. Little

1. Strategic alignment of the supply chain

There are three basic designs for supply chains: speed driven, reliability driven and cost driven (see figure 2). The most suitable model for a company depends on its customers' needs. Analysis determines to what extent each of the seven criteria of value creation meets customer needs. In this way, logistics performance becomes an important part of the value proposition offered to customers, and allows the supply chain strategy to support the company's marketing and sales strategy.

If a company has diverse target groups, several supply chains are usually required to meet customer needs. By creating a specific supply chain for every target group, customer needs can be fulfilled in the ideal way. Furthermore, because each customer segment uses only the logistics services it requires, costs can be reduced.

Analysis of supply chains shows clearly that when companies try to meet all the criteria of value creation at the same time they are unable to establish a consistent strategy throughout the supply chain. In addition, this leads to a sub-optimal supply service for some product categories while other categories end up generating unnecessarily high costs.

Case study: In a recent project, Arthur D. Little optimized the supply chain strategy of a medical technology company. We optimized two different supply chains with different logistics services to serve differing customer needs. The first supply chain was designed for customers who seek delivery within 24 hours and a high degree of reliability, and where demand is constant. This supply chain was built according to the principle of demand-oriented supply (Pull Principle). We used statistical methods and simulations to define coverage and safety stock in the warehouses. The second supply chain served customers who want to purchase randomly, in bulk, at low prices. This supply chain was designed according to the "Make-to-order" principle. With this approach, the goods are delivered directly from the production site to the customer without any interim storage. By segmenting the logistics service needs, the company was able to increase its "perfect order fulfillment" to 98%. Simultaneously the inventory decreased by 12%. This saved the company at least ten times the cost of the project.

Figure 2. Three basic designs of supply chains

Criteria of value creation	1 Speed driven	2 Reliability driven	3 Cost driven
Punctuality	●	◔	◑
Availability	◔	●	◑
Short response time	●	◔	◔
Cost efficiency	◔	◑	●
Proactive communication	◑	◑	◔
Reliability	◑	●	◑
High service level	◑	◔	◔

Product examples

- Speed driven:
  - Chemicals
  - Perishable foods
- Reliability driven:
  - Components & unfinished goods
  - Assets & utilities
- Cost driven:
  - Mass-producted articles
  - Commodities
  - Convenience goods

Source: Arthur D. Little

Customer needs: ● High ◔ Low

2. Integration of processes beyond company borders

The study shows that one of the main reasons for poorly executed delivery is the lack of accuracy in forecasting expected orders. A majority of the companies indicated that they had been aiming for more accurate forecasts over the last couple of years but had failed to achieve this.

It became evident that the most efficient way to improve the accuracy of forecasts is to exchange more information with key customers. Companies with high forecast accuracy have implemented the Excellence Practices below:

- Key customers are allowed access to their sales and demand planning figures.
- Collaborative planning, forecasting and replenishment is carried out with key customers.
- Electronic access to customers' sales, demand planning and inventory figures is in place.

Companies with a high rating on the SPE-Index usually collaborate closely with their key customers on the supply chain. This increases the competitiveness of the entire supply chain which delivers significant benefits for the key customers:

- The definition of a supply chain strategy is developed in conjunction with key customers.
- The main operating figures and target numbers are defined and aligned with key customers.
- The company regularly runs initiatives with key customers in order to improve both sides of the supply chain process.
- Capacity reservations are executed in order to give key customers the best service.
- Key customers receive additional services in fields related to logistics.

The study also highlights the fact that key customers often do not realize that exchanging information with the manufacturer is to their advantage. It is in the best interest of the manufacturer to promote the shared use of information.

The same phenomenon can be observed on the supply chain buy-side. In this case, manufacturers have not yet recognized the benefits of closer collaboration with their key suppliers. Key distributors are often willing to offer their services and products at lower prices based on more accurate sales figures and planning requirements.

A snapshot of supply chain performance

Figure 3 shows the two key ratios used to rate supply chain performance: "supply chain cost as a % of sales" and "perfect order fulfillment".

The supply chain costs consist of sales and demand planning, order management and scheduling, procurement and purchasing, warehousing and inventory turnover, write-offs and rate of return of stock and transport.

The results of the study are sorted by industry on the two axes, with the average and best-in-class for each industry shown. With the help of this illustration companies can compare their relative position within their own industry and gain a first indication of their potential for improvement.

Figure 3. Supply chain costs and perfect order fulfillment rate – industry average and best-in-class examples

Source: Arthur D. Little

Case study: Arthur D. Little helped a manufacturer of consumer goods to achieve sales data transparency for its key customers. With this information the company was able to configure capacity within its supply chain to reach the mutually agreed service levels within the usual fluctuations of demand. The previously used forecasts became obsolete as a result and reduced the key customers' workload. A forecast was only necessary for exceptional fluctuations in demand where the agreed margin was exceeded (exception forecast). Furthermore, stable and steady product demand allowed the consumer goods manufacturer to optimize its production logistics on the supply side. This made it possible to reduce the inventory of finished goods and intermediate goods. Additionally, the product quality increased and the finishing cost declined due to shared improvement projects undertaken with key customers. With production levels steady, costs declined by 28%.

Conclusion

Benchmarking is an effective way of making a fast analysis of the potential for improvement within a company's supply chain. There are two main levers that companies can use to bring about these improvements:

- The strategic alignment of the supply chain and the associated segmented logistics services assure the fulfillment of customer needs at minimal costs.
- Forced integration of processes beyond company borders through an upstream and downstream exchange of information produces more accurate planning and fewer losses at interfaces.

Projects completed by Arthur D. Little demonstrate that Supply Chain Excellence Practices can deliver significant financial benefits for the companies that use them. Supply Chain Excellence Practices are profitable.

Arthur D. Little's long-term benchmarking study of Supply Chain Performance Excellence is conducted periodically. Interested companies can participate in the study at any time: to take part, please request a benchmarking questionnaire free of charge from one of the contacts listed opposite.

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