

Aligning a Misaligned Supply Chain

Improving supply-chain management to gain a competitive edge



Manufacturers know that a fluid supply chain keeps their products moving from the beginning stages of production all the way to their customers' hands. A misaligned supply chain can lead to higher costs, lower quality and poor customer service. Companies that gain a deeper understanding of their suppliers' capabilities and their own needs, and then diligently use that knowledge to improve their overall supply-chain efficiency, can dramatically strengthen their business and gain a competitive advantage.

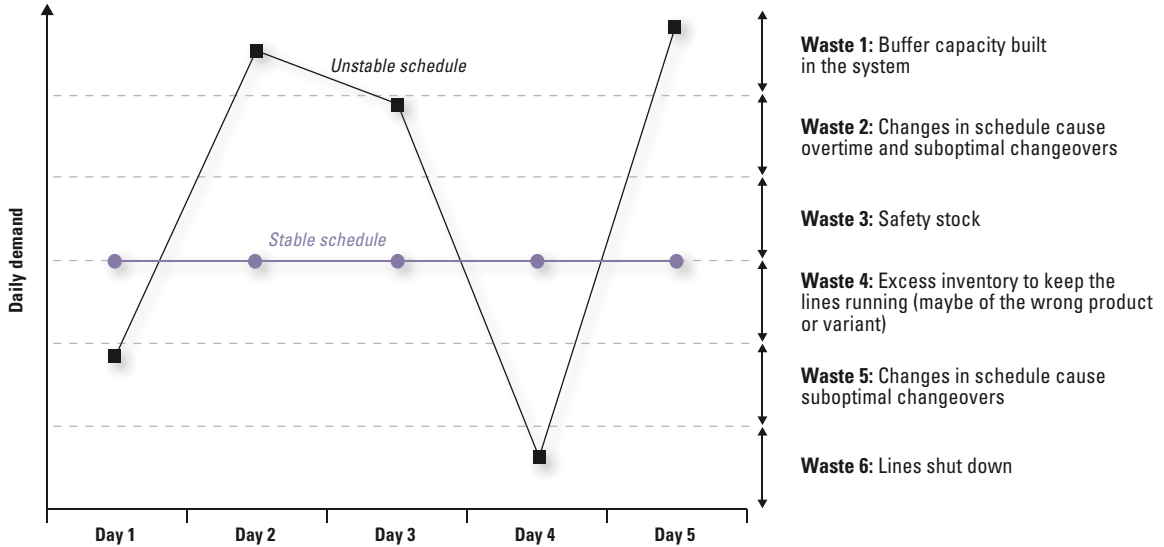
A U.S. manufacturer dealing with demand volatility was struggling to get critical components through its supply chain—bumping up against delivery delays, quality issues and lofty inbound logistics costs. New product launches, increased competition, promotions, marketing campaigns and shifts in consumers' expectations were all playing havoc with the supply chain. And although the company had successfully adapted to the volatility, its suppliers had not—key suppliers were wrestling with unexpected and accelerated demand for their components. Because of last-minute or cancelled orders, the manufacturer had inadvertently affected both the quality and costs in its suppliers' operations (*see figure 1 on page 2*).

Once the manufacturer understood what was causing the problems, the first step was to stabilize production schedules. Production accepted higher inventory levels in order to keep schedules fixed for longer periods of time. In return, suppliers agreed to shared-savings arrangements whereby the manufacturer got price discounts whenever certain production-stability goals were met.

The second step was to help key suppliers become more flexible, which in some cases meant agreeing to volume commitments to allow suppliers to plan and make the necessary investments in capacity. The manufacturer also linked its supply-chain managers' incentives

Figure 1

A misaligned supply chain due to unstable demand



Source: A.T. Kearney

to reaching production-stability goals specified in the shared-savings agreements with suppliers. This went a long way toward assuring compliance with the new policy.

The results were dramatic: a 20 percent net savings in inbound supply-chain costs and a significant improvement in quality and service levels.

This is just one example of how strains on the supply chain can cause big problems that, in turn, lead to waste and excessive costs, and how improvements in production planning and investments in new capacity can help start an impressive turnaround.

There are many ways to better align and improve supply-chain performance. In this paper, we take an in-depth look at the benefits of having an aligned supply chain, and strategies companies can employ to achieve them.

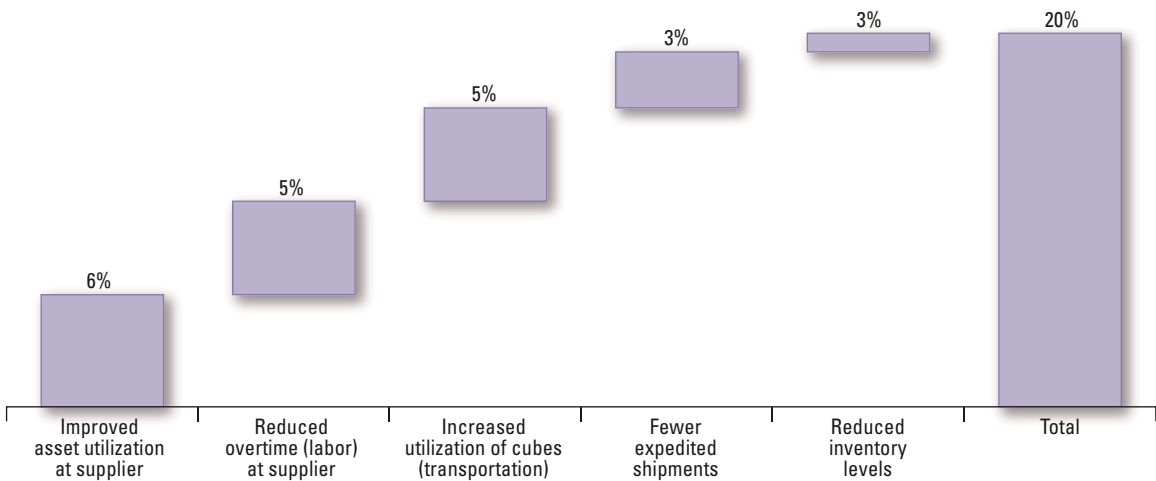
Aligned Supply Chains: The Upside

Properly aligned supply chains inevitably lead to lower costs, less required capital, higher quality and improved service. The following offers specifics in each area.

Lower costs. All costs go down when production planning and scheduling get more efficient, but the biggest reductions occur in overtime and line-changeover costs. Improved alignment also cuts logistics costs, as full truck-load shipments replace 11th-hour expedited shipments. If we define supply-chain costs as those related to all transportation, warehousing, inventory-carrying and manufacturing discrepancies, we can realistically expect a 20 percent reduction in costs (see figure 2).

Less required capital. When decisions are made based on future demand, and incentives are used to encourage more accurate forecasts,

Figure 2
Five areas of supply chain improvement



Note: Supply chain costs include all transportation, warehousing, inventory carrying costs and manufacturing cost variance

Source: A.T. Kearney

capacity investments will be more precise. Better utilized equipment minimizes capital tied to the supply chain, and more accurate capacity helps

production changes, and will reduce variability in the system. A system working at its optimum level and at a more constant pace usually produces fewer errors—and when errors do occur they are easier to identify and manage.

The best supply chains offer incentives for managers to estimate demand accurately.

Improved service. An aligned supply chain leads to a more stable system, and in stable systems it is easier to identify and react to change. The company just operates more efficiently and is better able to respond to customer needs.

avoid system overloads and the need for costly outsourcing. A sharper focus on demand will reduce inventory levels systemwide.

With all the benefits that accrue when alignment problems are minimized, why is misalignment still so common? Because misalignment costs don't seem to appear in most budgets (or at least it's hard to identify them as such). Additionally, there are very few cases in which key decision-makers have the

Higher quality. A well-aligned supply chain can help avoid system overloads and last-minute

Alignment Problems and Their Causes

The U.S. manufacturer in our example suffered from unstable demand, one of the three common major misalignment problems detailed below:

Unstable demand. Manufacturers typically respond to demand variability by continually adjusting production schedules, which leads to adjustments in supply requirements. Suppliers experience as much if not more demand volatility than the manufacturer—a scenario known as the bullwhip effect. When suppliers are forced to adjust their production schedules constantly to keep up with manufacturers' needs, they end up running overtime and carrying excess inventory.

The cause: Production schedulers' incentives are to reduce manufacturing costs within their company; supplier costs are not part of their budget or incentive system. This is a problem if suppliers don't have the flexibility to adapt to changes in demand quickly and cost-effectively. Suppliers that use expensive equipment dedicated to producing a single component are the most at-risk, because if demand for that

component disappears, the equipment sits idle. Demand instability is also a problem for suppliers engaged in production that requires long changeover or start-up times. Suppliers that produce commodity-type products are less likely to be affected by unstable demand because they can compensate for the loss of one customer's orders with demand from other customers.

Underinvesting in capacity. When suppliers are uncertain about demand from manufacturers, but have invested in dedicated capacity, they face significant risk. If their product doesn't sell, the expensive capacity will sit idle. So suppliers often invest below expected demand. These underinvestments show up in the form of overloaded production lines, which can lead to delayed product launches, late deliveries, quality problems and poor service. Suppliers typically do not assume responsibility for underinvestments (and they are very difficult to prove), so it is often the manufacturer's job to identify symptoms of underinvestment and react to them quickly.

The cause: Underinvestment usually happens when the supplier has to buy expensive equipment for a dedicated use, in a situation where there is significant demand uncertainty (for example, new-product launches).

Supplier overcapacity. Manufacturers often overstate their forecasts to trick suppliers into investing in adequate capacity. Overstated demand may lead to excess capacity for the supplier, which in turn leads to higher costs for everyone in the supply chain. This seems to be a common problem, and a costly one for industries with high-value components, such as automotive and aerospace, and where expensive equipment is being used. It is also a problem in cases where production is labor-intensive and lacks the labor flexibility to reduce staffing levels if demand is lower than expected.

The cause: Supply-chain managers are not usually penalized if their suppliers end up with excess inventory.

required information, incentives and power to address misalignment problems.

A Perfect Supply Chain?

In a perfect world, a truly aligned supply chain would involve only one decision-maker who has access to all available information. That person

would also have the incentives and power to make decisions that minimize supply-chain costs. But, we do not live in a perfect world. Instead, supply-chain managers often try to maximize their budgets rather than minimize supply-chain costs, and as a result, make decisions that raise overall outlays. The further we

get from the perfect world scenario, the more likely the supply chain will be misaligned.

There are several keys to a properly aligned supply chain. Figure 3 highlights the following:

Understand true demand. Supply-chain managers armed with thorough knowledge about demand can plan better and avoid waste. Frequent and accurate communication with chain partners regarding demand can help, and collaborative planning and forecasting tools can improve information sharing. In the past few years, new technologies have contributed significantly to supply-chain collaboration, but true collaboration requires getting past the tendency to overestimate demand in order to avoid shortages.

Improve visibility of total supply-chain costs. To make decisions that keep supply-chain costs low requires first understanding the costs of all

partners up and down the chain. This information is not easy to obtain, as most suppliers try to “hide” their true costs in order to protect their core knowledge, competitive advantage and negotiating power. There are a few ways, however, to get a good idea of supply-chain partners’ cost structures. For example, some OEMs set up a small in-house operation, similar to a supplier’s, to get a reasonable estimate of the supplier’s costs.

Align incentives. The best supply chains offer incentives for managers to estimate demand accurately. Even if they have all the necessary information, managers will not help supply-chain partners reduce their costs unless there are incentives to do so. And company executives will not require their managers to help supply-chain partners unless the company can share in the benefits. The solution to this age-old

Figure 3
Keys to a properly aligned supply chain

	Basic	Advanced
1. Understand true demand	Monthly or weekly updates are based on manufacturers’ demand and inventory	Constant updates help to adapt to changes in supply, including events at suppliers
2. Improve visibility of total supply-chain costs	Capacity assumptions are based on communication from each player (monthly or weekly), and sometimes audits Cost estimates provided by supply-chain players or based on market	Exact capacity known on a daily basis, exceptions that might affect real capacity are visible Real costs are accessible and updated on a regular basis, ascertained by visits to facilities and benchmarks, among other things
3. Align incentives	Supply-chain managers are offered some incentives to estimate demand properly and avoid misalignment costs Contracts are used to align incentives among companies	Incentives and penalties are established by a single decision-maker, based on total costs. Actions and decisions are rewarded or penalized based on their impact on total supply-chain performance.
4. Coordinate decisions and back compliance	Some decisions are discussed, some others are taken independently	Key decisions are made, or at least approved, by a single decision-maker across the entire supply chain Different players establish clear rules for all decision making. Decisions outside the rules require approval from a supply-chain leader.

Source: A.T. Kearney

dilemma is two-fold: incentives for supply-chain managers and strategies that allow companies to share in the benefits accrued through an improved supply chain. We often recommend shared-savings agreements, and bonuses (or discounts) for meeting operational goals. The best incentives are those linked to reducing total supply-chain costs.

Coordinate decisions and track compliance.

There is little chance to reduce supply-chain waste without coordinated actions and strong compliance by all companies along the supply chain. Typically, a strong player in the supply chain takes

Misalignments occur because the costs don't seem to appear in most budgets (or at least it's hard to identify them as such).

the lead in ensuring coordination and compliance. If there is no strong player, establishing a cross-company organization can fill this role by being accountable for and having the power to achieve cost savings.

By focusing on these four areas, supply-chain managers will have the required information, incentives and power to align a misaligned supply chain.

The Case of Toyota: Aligning a Misaligned Supply Chain

Like all automotive manufacturers, when Toyota's supply chain is misaligned it pays dearly.

But Toyota, unlike many of its U.S. and European counterparts, has been able to minimize such misalignments and therefore reduce its supply-chain costs and the costs of its suppliers. How does the Japanese automaker manage what other OEMs cannot? Toyota's success lies in its ability to reach advanced levels of performance in the four areas discussed earlier.

1. Toyota knows the operations and costs of its suppliers. Toyota thoroughly understands its suppliers' operations. The manufacturer often produces a small number of components in-house in order to better understand production factors and costs, and makes sure that everything it requires of its suppliers is feasible and will not create quality or supply problems. Thus, Toyota is able to estimate supplier margins, make decisions to reduce its own costs and those of its suppliers, and ultimately share in the savings with its suppliers.

2. Toyota is transparent with its demand plans and has a strong focus on maintaining demand stability. There is no room for error in Toyota's demand plan; the company strictly adheres to it, and any required change is communicated to suppliers in a timely manner. This allows suppliers to plan their operations in the most efficient way possible, thus minimizing changeovers, overtime costs and production-line shutdowns.

3. Goals are based on a total cost perspective. Toyota planners determine their goals only after considering all costs along the entire supply chain, including components. Supply-chain managers are penalized for actions that

affect a supplier's ability to deliver the product at the expected cost and quality.

4. **Toyota sets very strict manufacturing and delivering requirements, controls compliance at suppliers, and quickly reacts if there is an exception.** Because of its deep knowledge of all supply-chain operations, Toyota can set operating targets that help maximize total supply-chain performance. By carefully monitoring compliance and quickly reacting to exceptions, Toyota is able to avoid deviation from its imposed requirements. Having set operating parameters that maximize total supply-chain

performance and ensure product quality, Toyota makes itself the sole decision-maker in the supply chain.

Toyota's example shows that increased knowledge and the focused use of that knowledge are key to managing supply chains. Companies that gain a thorough understanding of how their suppliers operate, and then accurately assess their own needs, will be able to create procedures that increase efficiency along the entire supply chain. This in turn will lead to cost savings, higher quality, better customer service—and an overall competitive advantage.

Authors

***Joachim Ebert** is a partner based in the Chicago office. He can be reached at joachim.ebert@atkearney.com*

***Joan Gelpi** is a consultant based in the New York office. He can be reached at joan.gelpi@atkearney.com.*

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Marketing & Communications
222 West Adams Street
Chicago, Illinois 60606 U.S.A.
1 312 648 0111
email: insight@atkearney.com
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