



DRESSING FOR THE WEATHER

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Top supply chain challenges motivate action

IN ORDER TO UPGRADE THEIR SUPPLY CHAINS AND outperform competitors, manufacturing firms are concerned with improvements in their demand planning and forecasting, cost reductions, sourcing optimization and inventory reductions. As research indicates, they aim to implement improvement efforts in these areas within the next two years.

“In the past two years, we have actively worked to reduce costs and inventory by introducing vendor-managed stock and working with suppliers to achieve better prices and lead-times.” This statement of a large British electrical equipment manufacturer is often on the agenda of manufacturing firms.

As manufacturing firms increasingly use their supply chains to outperform competitors and to gain market share, supply chain challenges are notably on the top agenda. However, what are the biggest challenges that manufacturing firms foresee while managing their supply chains?

To answer this question, we surveyed 259 manufacturing firms from various industries listed on the stock exchange in the United States and Europe asking them: What major improvements or changes were implemented for the underlying supply chain of your manufacturing firm’s main product line in the past two years? What major improvements or

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changes will be implemented in the next two years?

Approximately 61 percent of respondents were C-level executives, vice presidents, directors or department heads, mainly in the function of supply chain management (40 percent), logistics (19 percent), production and procurement (17 percent), general management (10 percent) and other logistics-related fields (13 percent). The sample firms' annual sales ranged from \$14 million to \$171 billion whereby 65 percent of the firms' annual sales were above \$1 billion (with a mean of \$15 billion). The range of number of employees varied from less than 100 to 398,200 (with a mean of 59,621). The analysis is based on a broad and representative sample.

Accepting the data

Our respondents identified demand planning and forecasting improvements, cost reductions, sourcing optimization and inventory reductions as the four major supply chain challenges in the next two years. The picture slightly changed since 2006. Whereas cost reduction had been the top item in the agenda back then, followed by sourcing optimization and demand planning and forecasting improvement, the latter one is now regarded as top priority for manufacturing firms.

Demand planning and forecasting improvement.

Aligning supply and demand in today's complex and dynamic manufacturing environment remains challenging at best. As sources and capacities for manufacturing have increased, many firms have moved away from focusing solely on plant-level production planning. They adopt demand-driven approaches so that they can cope with changing customer demand more efficiently. Still, many manufacturing firms spend an inordinate amount of time and resources for better demand prediction. Yet, in spite of the significant investment, static forecasts are often out of date within hours of creation, questioning the real value of traditional planning tools as it relates to near-term demand volatility.

Not surprisingly, 48 percent of the respondents identified demand planning and forecasting improvement as the top priority in 2009 and 2010 for manufacturing firms. The most common method of dealing with uncertainty is building up inventory in the supply chain. Departments buffer against their lack of confidence in the forecast with safety stocks. As each link in the chain creates its own buffers, inventories skyrocket.

"Our international sites do not forecast into our main manufacturing plant very effectively. We are working to put new computer systems in place so that forecasting can be more accurate and timely," says a supply chain executive at a leading U.S. steel pole and tube manufacturer. More accurate demand planning and forecasting improvements are needed

for managers to predict shortened market visibility in uncertain environments.

"New standard reporting systems based on consolidated data for demand planning and all other reports are needed," says a top executive at one of the leading U.S. technology hardware and equipment manufacturers. A key capability for manufacturers is to be able to respond rapidly to what is happening at the moment. As such, manufacturers need to transition from a supply chain driven strictly by forecasts to a demand-driven one. Rationalizing and optimizing what firms are best at selling, making and delivering — and aligning the sales force with that mindset — will help a manufacturing firm to create a more customer-focused mindset without sacrificing operational efficiency. Ultimately a demand-focused approach to planning can significantly improve demand planning and management efforts and help overall costs and customer service efforts.

Cost reduction. More than 46 percent of the respondents identified cost reduction as the most powerful way to increase profit margins. "Further cost reduction in logistics is planned by decreasing processing times within distribution centers," says a logistics manager at a large consumer goods manufacturer. He is not alone. Many blue chip firms like Rolls-Royce, L'Oreal, Lego or Chrysler currently improve their supply chain operations by cutting costs. Chrysler, for example, vows to cut its costs by 25 percent in the next three years.

Other cost reduction efforts in the field of supply chain management would add value and bring new business benefits. First, process efficiencies drive costs down as teams find best practices and streamline the end-to-end system of supply and delivery, taking cost out wherever possible. Second, shorter cycle times and visibility across the supply chain increase responsiveness and customer satisfaction, reduce customer turnover and help to retain valuable customers. Third, lean techniques reduce waste and non-value-adding steps, assuring best processing across the enterprise. Fourth, asset utilization and elimination of unnecessary assets reduces the need for working capital. Finally, lower inventory levels that more closely meet the actual demand will reduce working capital needs and minimize carrying costs.

Sourcing optimization. Sourcing optimization is the third top challenge in the next two years. As many firms step back and examine their core competencies, they realize that outsourcing non-core products and activities to suppliers creates synergies that can reduce costs, shorten lead-time or improve service. Although significant economic benefits can be realized from outsourcing all or parts of the supply chain processes, without the right systems, processes and supplier management competencies, such efforts bear very high risk.



In the current economic situation with fewer incoming orders, reduced sales, idle production capacities and lower profits, the two supply chain challenges, cost reduction and sourcing optimization, go hand in hand. With the major portion of added values being outsourced to suppliers, purchasing organizations are pressured to reduce costs in the supply chain at the buyer-supplier interface.

It is not uncommon that manufacturers, for example in the automotive industry, announce plans to cut purchasing costs by up to 25 percent. However, buying firms must be cautious not to destroy established buyer-supplier relationships. They should not follow the practice we saw in the early 1990s when Jose Ignacio Lopez de Arriortua, who was first responsible for General Motor's and later Volkswagen's purchasing organization, was on the front pages of business magazines. Suppliers were forced to cut prices severely and

continuously and competitive quoting was the favored method. Suppliers were seen as "rivals" and whether and how suppliers were able to achieve cost reductions was solely their problem.

Today, buying firms avoid talking solely about the supplier's price. Instead, they strive to take costs out of the entire supply chain. Measures to achieve this include simplifying the purchasing processes, using more common parts to realize economies of scale, initiating supplier circles, engaging in supplier development activities or transferring know-how about lean production systems to suppliers. In the end, buying firms must ensure that burdens are shared equally and that suppliers' profits are protected. Otherwise, the financial situation of many suppliers will deteriorate, and we will see even more supplier bankruptcies in the future.

What is new compared to the cost reduction efforts in the supply chain we

have seen earlier? Today, cost reduction along the supply chain is not limited to the production and delivery of materials and components. Instead, firms also seek cost down at the buyer-supplier interface through an increased outsourcing of innovation and R&D tasks. Suppliers assume development responsibilities and invest in the development of customer-specific products. This means that the buying firm transfers some of the costs and risks associated with new product development to the supply base. However, they need to be aware that higher levels of innovation and R&D outsourcing to suppliers require enhanced collaboration and supplier management capabilities—an additional burden placed on the engineering and purchasing functions.

In the end, purchasing can only realize substantial and sustainable cost reductions if the outsourcing of production and R&D goes hand in hand. Purely power-based negotiations will have harmful consequences in the long run.

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In a heavily outsourced environment, manufacturing firms need to put more systems in place to compensate for the fact that they can no longer control the entire operations inside the firm boundaries. In an outsourced supply chain environment, the need for excellent inter-company and intra-company information flows (e.g., between the firm and its suppliers) becomes a high priority.

“Over 100,000 new product introductions per year or, in other words, 74 items, which the German sportswear giant Adidas delivers every second worldwide, is a good example of how complex and challenging purchasing decisions are to handle such volumes through the supply chains,” says John McNamara, head of operations strategy and planning at Adidas.

Inventory reduction. As demand and supply in the value chain do not match perfectly per se, inventories are needed as buffers between supply chain stages. Inventory can be essential for maintaining a steady flow of production and high capacity utilization. The amount of time required to convert purchased materials and parts into finished products depends on the magnitude of these inventories. But with the widespread use of just-in-time deliveries and vendor-managed inventories as well as just-in-time production, firms can operate with minimal levels of inventory. This made supply chain and operations managers aware that inventories prevent the discovery of problems in the supply chain and on the shop floor and can be detrimental to productivity. As a consequence, these managers commonly take inventory levels as indicators for process capability and efficiency.

Inventory reductions can significantly reduce costs, however they also expose defects in the manufacturing process, forcing managers and workers to eliminate (rather than accommodate) sources of process variability. Inventory reductions can also result in productivity gains, and might serve as an indicator that process variability has been reduced and that less buffer stock is required. Marvin B. Lieberman and Lieven Demeester described in an article on inventory reduction and productivity growth published in *Management Science* that a 10 percent reduction in inventory leads — with a lag of about one year — to an average labor productivity gain of about 1 percent. In combination, inventory reduction will remain a challenging task in the upcoming years, as 40 percent of the respondents approve.

Additional stresses

Challenges in supply chain management are manifold. Besides the four top challenges previously mentioned, manufacturing firms will pay close attention to a number of other issues:

Customer service improvement. Customer service efforts were approved by 33 percent of the respondents. Logistics is concerned with the timely and accurate flow of finished goods from the production line to the customers. Customer service levels directly depend on the performance of the logistics system of the firm. Customer service may also represent the best opportunity for a firm to increase its market penetration and profitability. Therefore, excellent customer service helps to achieve a close interaction with customers to fulfill specific requirements and in reverse to be able to penetrate higher margins and achieve higher customer loyalty.

Network optimization. More than ever, value creation occurs in networks consisting of suppliers, manufacturing sites and logistic service facilities. As a consequence, a precise management of the global supply chain network is a prerequisite for a timely market introduction of new products, smooth product ramp-ups, high delivery capability and quick response to customer demand. However, as firms grow over time and expand their supply chain network, it might happen one day that the network is not optimal anymore. To avoid bottlenecks, redundancies and other suboptimal structures that decrease the overall performance, 31 percent of the respondents will focus on network optimization in the next two years.

Consolidation of facilities as well as inbound and outbound optimization. Closely related to network optimization is the consolidation of facilities as well as the inbound and the outbound transportation optimization. Typical business drivers for facility consolidation are changes in volumes required by the customers in regional markets, product line extensions, mergers, acquisitions or divestiture of product

SUPPLY CHAIN CHALLENGES (2009-2010)

Others	8%
Reverse logistics optimization	7%
Know-how enhancement of employees	22%
Consolidation of facilities	24%
Outbound transportation optimization	26%
Inbound transportation optimization	27%
Network optimization	31%
Customer service improvement	33%
Inventory reduction	40%
Sourcing optimization	42%
Cost reduction	46%
Demand planning and forecasting improvement	48%

Figure 1. The hierarchy of challenges that can be reversed and improved

SUPPLY CHAIN CHALLENGES (BAR CHART)

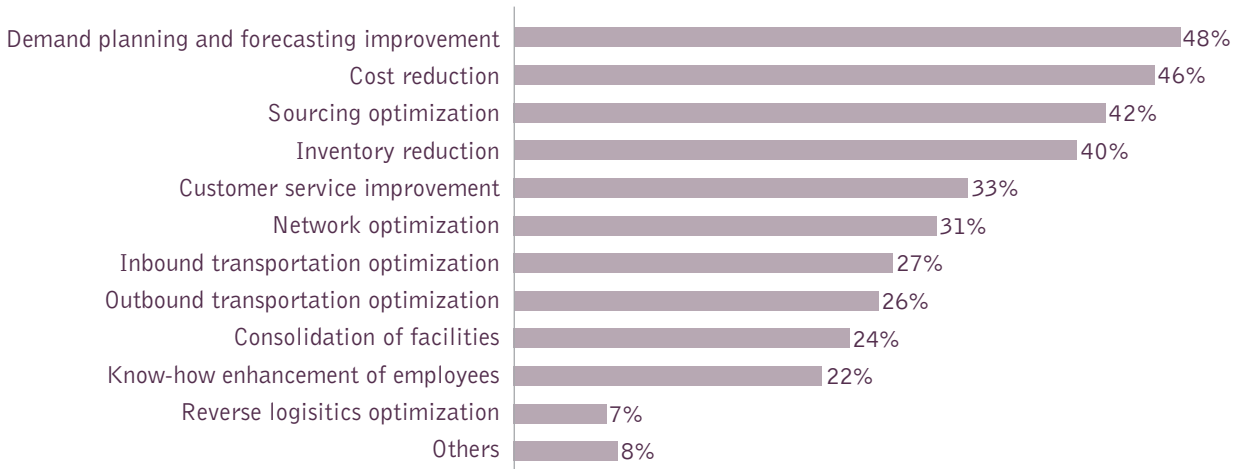


Figure 2. Pictorial of hierarchy of challenges

lines. In order to ameliorate suboptimal network systems, consolidation of facilities helps. In that context, new network nodes emerge, for example, through the implementation of lead production facilities or regional distribution centers that optimize inbound and outbound transportation. Inbound transportation optimization is designed to create optimal inbound material shipments and loads to assembly and component facilities.

Optimal plans must be created considering potential supply chain constraints. Outbound transportation and logistics is at the other side of the process of managing and optimizing the outbound shipment of vehicles from assembly plants through consolidation hubs to distributors or customers.

Know-how enhancement of employees. The right employee training, development and education provides significant payoffs for the employer. Hence the hiring, training and retention of qualified employee is high on the agenda of many companies. In the coming years, 22 percent of the firms plan to enhance the “supply chain knowledge” of their employees. Better and well-trained employees — blue- and white-collar alike — are the basis for supply chain innovations, increasing process efficiencies, the ability to adapt to new technologies, and last but not least, higher job satisfaction, employee motivation and reduced employee turnover. Qualified people who understand the business of running supply chains are scarce.

Reverse logistics optimization. In many countries, new laws require companies to implement reverse logistics systems, for example, for electronic equipment. Since the reverse supply chain consists of three separate entities — the assembly plant, the disassembly plant and the recycling

plant — operations have to be planned from a larger perspective that comprises those three entities. From the supply of products to collection, dismantling and reuse, the inventory of products and components must be properly maintained and inventory policies in reverse supply chains must be altered in terms of the level and location of buffer stocks. Since reverse logistics optimization is seen by a relatively small number of the respondents as a key supply chain driver, firms still seem to react to fulfill the required reverse logistics activities, but to a lesser degree see reverse logistics as a means for differentiation or cost reduction.

Finally, value creation through “other” improvement initiatives, such as consolidation of outbound distribution networks or ERP system implementations, were also considered as a challenge supply chain and operations managers will tackle in the next two years.

Developing, selling, manufacturing and delivering customized products can be a challenge for the best organizations. Customers will only be satisfied and buy again if service and price are aligned with their expectations. Supply chain management plays a crucial role in meeting these expectations. An inefficient and poorly functioning supply chain can negatively impact every aspect of an organization, jeopardizing the long-term performance and success of a business.

Manufacturing firms that re-evaluate how the current supply chain strategies and structures — including infrastructure, technologies, processes and organizational structures — support their business must continuously adapt to changing customer preferences and competitive environments. In the end, business strategy and supply chain strategy must match and support each other. ❖