New dimensions in supply chain management:

Eight strategies for improving performance from concept to customer

be enterprising

Table of contents

Executive summary

Striving to take their business to a new level, or just keep pace with increasing competition, many executives are realizing they need an expanded view of their company's business environment. There was a time when this meant looking deeper and harder into their own enterprise or slightly beyond to their immediate trading partners.

That's no longer good enough. Virtually every company—from manufacturer to logistics provider to retailer—is operating in a much more complex, multifaceted supply chain. This means their business is being impacted by a whole new set of factors from the far reaches of their supply chain.

The list of forces driving this change in supply chain dynamics is long, varied and, in most instances, not a surprise. It includes the usual suspects—globalization, a changing competitive landscape due to mergers and acquisitions, changing regulatory requirements, changing consumer expectations, and a high failure rate for new product introductions. There also are forces that are less top of mind, including shortening of product lifecycles, skyrocketing product variety, rising energy costs, increased congestion at ports and on roads, and the impact of real or potential natural disasters and terrorism.

Infor™ has analyzed those business forces and the impact they are having on manufacturers, logistics providers, and retailers and developed a new way for companies to view their supply chains. We call it the "concept-to-customer" approach to supply chain management.

In this whitepaper, we will describe concept-to-customer supply chain management in detail and the eight strategies customers can take to get a broader view of their supply chain for improved business performance.

Concept-to-customer supply chain management

In its simplest terms, the concept-to-customer approach to supply chain management can be defined as taking the broadest possible view of the variables impacting a business. It's a tacit acknowledgement that today's typical supply chain is multifaceted and multidimensional and requires companies to see it that way. Based on our analysis of supply chain management trends, we believe companies are best served by viewing their supply chains in terms of three dimensions: internal, external, and customer.

Internal dimension—the supply chain you control
A company's internal dimension encompasses the physical aspects of its business that are largely under its control. These include manufacturing, distribution, or retail capacity and the time and costs that go into sourcing, producing, and distributing products. Improving performance in those areas has, to date, been the priority of most supply chain management initiatives. For manufacturers, this has meant investing in automation and sales and operations planning technologies. For distributors and retailers, the priority has generally been on supplier relationship management, warehouse management, and transportation management solutions and the integration of those solutions to deliver visibility of supply.

Forward-thinking companies recognize that the internal dimension also encompasses the design of their products and the network they use to get them to customers. Network design includes such considerations as where to place manufacturing and warehousing facilities, how to design a distribution network, where to place retail outlets, and how to format stores.

Given the complexity and global nature of many supply chains, network design is of rising importance with significant impact on bottom-line results, as recognized by the many companies who have already made decisions to "offshore" production. However, there is mounting evidence that these decisions need to factor in multiple considerations, including traditional cost offsets such as production costs, distribution, and inventory as well as non-traditional considerations like the greater risk of product damage and delay resulting from offshoring.

Product design, another component of the internal dimension, encompasses all the considerations that go into the design process, including market requirements analysis, manufacturability, and the ease with which the product can be distributed throughout the supply chain.

Companies are being supported in the concept-to-customer approach by product lifecycle management and network design solutions that help them more effectively design products and make strategic decisions about where to place manufacturing, distribution, or retail capacity.

External dimension—the supply chain you don't control

The external dimension is comprised of business factors over which companies have little or no control. As a result, the external dimension has been a lower priority or absent from many supply chain initiatives. Included are external forces, some of which are predictable and some not.

Predictable external business factors include government regulations, trading partner mandates, environmental requirements, and the like. For each of these, advance notice in one form or another is usually available.

Manufacturers, for example, can prepare themselves to meet health, safety, or regulatory requirements such as US Food and Drug Administration (FDA) and UK Medicines Control Agency (MCA) regulations routinely applied in the supply chains for food, drugs, and cosmetics. Common trading practice mandates include Electronic Data Interchange (EDI) technology in the automotive supply chain and radio frequency identification device (RFID) technology, which is emerging as a mandatory requirement in some consumer goods and retail supply chains. Environmental considerations include well-known restrictions on the discharge of solid, liquid, and gaseous waste. These external factors drive complexity into the supply chain and dictate where and how a product is produced, how it is stored, which regions and which trading partners it is shipped to, and how information about it is communicated.

With the right approach and technologies, companies can incorporate these predictable external factors into their strategic, tactical, and operational planning. For example, manufacturers can build sourcing intelligence into their supply chain planning routines. Logistics providers can utilize real-time services to support up-to-date restricted party screening lists. And retailers working with their key suppliers can develop RFID technologies to increase visibility of product and boost warehousing efficiencies.

However, the external dimension also includes forces that are difficult or impossible to predict and, as such, can knock a business off balance with no warning. Macroeconomic factors like a sudden spike in fuel prices, worker strikes, and delays in shipping due to customs noncompliance or port congestion, or major weather-related disasters can put significant stress on the supply chains of manufacturers, logistics providers, and retailers. Problems that occur inside your suppliers' or your customers' supply chains can also lead to delays in sourcing, production, and movement of finished products, threatening continuity and quality of service to the end customer. Straddling the line between predictable and unpredictable are pressures from your competitors, some of which you can foresee and respond to and some of which you can't.

To meet the challenges of the external dimension, companies need capabilities to help them increase and extend their supply chain visibility, sense and respond to changes in real time, and improve the measurement of performance across supply chain nodes and modes.

Customer Dimension—where you have influence, but not total control

The customer dimension for many companies is generally a combination of business characteristics over which they have influence, but not total control. While companies have no direct control over the purchase of their products, they have ways to influence purchase decisions. At a high level, these include leveraging product lifecycle management processes to offer customers the features and functions they want, when they want them, and at an attractive price. On a more tactical level, companies can deploy promotional strategies to influence and shape demand to better meet their business goals.

With the concept-to-customer approach, these decisions are based on a customer-centric view of the supply chain. For a manufacturer, the customer dimension incorporates what the ultimate consumer needs, not just what the next company downstream in the supply chain needs. It may mean that companies which channel their products through distributors organize their demand management processes to reach out beyond the distributor to the end customer. This will help ensure that supply is synchronized to customer demand, not to the buying practices of the distributor.

For the retailer, it means looking further upstream in the supply chain to influence the actions of manufacturers and logistics companies so consumer expectation for more availability, more choice, and faster response can be met. Examples include retailers who increasingly seek to own the recipe of a new product, meet a certain price point on the shelf, or cater to a certain segment of their consumer market—such as products with low carbohydrates, products that promote fair trade, or products that use environmentally friendly ingredients.

Supply chain leaders generally leverage a combination of product lifecycle management, supply chain management, and customer relationship management solutions to better control the customer dimension.

Health Care Customers Focus on End-Customer Demand to Drive their Supply Chains

Two Infor customers in the health care industry have recognized the value of driving their supply chains based on end-customer demand instead of sales to their first tier customer.

One, a leading provider of dental equipment, achieved a nearly 90% reduction in forecast variability and a 93% reduction in safety stock by incorporating its customers' sales-out data into the company's demand planning solution. With a well-established distributorship, the company is using Infor SCM Demand Planning collaboratively with its trading partners to deliver what its end-customers need based on their sales to dental professionals.

The other, a leading producer of health care products that sells through distributors, is using Infor SCM Demand Planning, Info SCM Inventory Planner, and Infor SCM Replenishment Planner to capture input from end-customers to improve its forecast accuracy. The result has been improved service levels for its customers and a sharp reduction in its need for costly drop shipments, from 51 per month to 13.

Eight strategies for leveraging concept-to-customer supply chain management

Implementing concept-to-customer thinking in supply chain management requires a set of actions and business processes that are unique to every business. But the bottom line for each company is the same—the need to establish a more resilient supply chain that makes it possible to better manage and adapt to all, not just some, of the business dynamics impacting the company. This includes improving insight and control over your own operations; catering to, influencing, and responding faster to events beyond your control; and focusing on the customer and signals from upstream trends to plan and drive your supply chain.

To help implement and foster concept-to-customer thinking, Infor has identified eight supply chain strategies that enable enterprising organizations to take the actions necessary to build anticipation and resilience into their supply chains.

1. **Dynamically adjust your network.** For many companies, the physical ownership of manufacturing, warehousing, transportation, and/or retail capacity represents the largest fixed-cost element of their businesses. Despite this financial and competitive importance, too few companies have a strategy to assess their networks on an ongoing basis to ensure they are optimized to meet their business needs. Often, companies don't sit down and design networks; they inherit them as a result of acquisitions or they evolve their networks over time as they expand their operations. Infor recommends that companies assess their supply chain networks multiple times per year.

   By leveraging network design solutions to dynamically evaluate their networks, manufacturers, logistics providers, and retailers can avoid the pitfalls of making minor adjustments to networks that are fundamentally ill-suited to meet current and future business needs. In some cases the gains from efficient manufacturing and distribution processes are negated by the physical location of assets or a company's capacity to make, move, and store product as the demand mix changes from year to year. In addition, the effects of external pressures—rising fuel costs, differential regional tax rates, regulatory compliance, and environmental concerns—can be mitigated if networks are regularly assessed for effectiveness in meeting requirements. Although short-term actions can compensate for a poorly designed supply chain network, long-term profitability and competitiveness depend on having the right capacity and the right location of physical assets.

2. **Take a global view of demand.** With market horizons expanding for many companies, it has become increasingly important to evaluate customer demand on a global or at least, regional level. Multiple channels to market and a global customer base produce demand patterns that vary across regions, seasons, and the lifecycle of your products. By taking a global view, your company can create an environment that delivers the most complete picture of customer demand on your business and intelligently detects trends and changes at the regional, product, channel, and customer levels.

   Effective demand management is more than just forecasting—it's about anticipating demand and taking opportunities to influence it to deliver the financial and business performance your company is seeking. Deploying a collaborative demand-planning solution is a proven first step in providing the foundation for integrated business planning. It delivers a global view of demand, gives your company the visibility to sense and react quickly to changes in customer buying patterns, and sets the parameters for the inventory, production, sourcing, and distribution plans that follow.

3. **Work the supply network.** Working the network means dynamically making decisions about all the factors that go into getting products into your customers' hands. In an extended network, there are multiple routes by which product can reach customers. Effectively working the network necessitates making a number of strategic decisions such as whether to make or buy; whether to supply products using manufacturing facilities in America, Europe, or elsewhere; picking one distribution center over another; and determining how much stock to hold and where.

   Today, supply chain leaders can take advantage of optimization technologies to make these decisions based on a holistic picture of demand mix and supply capacity factors. By taking this approach, you can increase the likelihood that you will choose the best option in terms of customer service and total cost of supply. Network optimization affords you the means to manage the complexity stemming from the predictable external factors and customer mandates referred to earlier. These include factors such as regulatory constraints in shipping product from one region to another or, in the case of a fresh food company, complying with retailer mandates about the amount of remaining shelf-life on delivered product. Where network optimization really scores, though, is in its ability to help companies react quickly to those unpredictable external factors such as disruptions in supply stemming from a manufacturing or supplier failure, rising fuel costs in specific regions of the world, or the opportunity presented by unusually high demand for your products. Anyone can plan in steady-state conditions, but optimization-based planning tools can give you the edge when it comes to steering your way out of trouble.

4. **Boost asset productivity.** For manufacturers, there is no substitute for effective planning and scheduling to maximize returns on critical assets such as equipment, materials, and people. For logistics providers and retailers, there is no less a need for effective planning and scheduling to maximize the use of warehousing and transportation assets. Today, advanced planning solutions take manufacturers, logistics providers, and retailers beyond the confines of traditional planning and into fast, responsive, problem-solving engines that are cognizant of constraints from the internal dimension—the things you can control. These capabilities routinely provide greater visibility and control over capacities, material availability, labor skill deployments, and task sequencing to ensure that you make the most of your capital investments.

It is important to recognize that the route to capital asset productivity varies dramatically within manufacturing, logistics, and retail industries and even between the types and styles of any one of these industries. In other words, no one size fits all. In manufacturing, for example, food production demands require a radically different planning discipline from that required for making engines or high-tech and electronics equipment. Therefore, boosting the productivity of your capital assets involves choosing the planning and scheduling technologies that best fit your business model. The same is true in deciding the warehousing and transportation management capabilities you need.

5. **Expand your visibility.** Today, product travels more miles, passes through more hands, and crosses more systems on its journey to your ultimate customers' hands. This adds numerous points in the supply chain where the smooth movement of goods can be disrupted. By extending your visibility up and down the supply chain, you can create a resilient supply chain that enables your company to adapt more quickly to the forces of the external and customer dimensions. Initially, this might mean gaining visibility of inventory wherever it might be—at a plant, in a warehouse, in transit, or at a store. Supply chain visibility solutions and technologies such as RFID can facilitate real-time visibility of inventory, regardless of where it is and improve your ability to predict and plan for product arrival.

   Demand visibility solutions can help manufacturers see what retailers are selling so they can adjust their production to optimize business results and, in doing so, accommodate more requirements from the customer dimension. Conversely, retailers can implement solutions that provide visibility further up the supply chain, so they can understand when product will be delivered to their stores and even further back to what is being produced. In doing so, retailers put themselves in a position to influence production and product design to ensure they have products that will help them secure long-term relationships with customers.

6. **Know what happens, when it happens.** As supply chains continue to increase in velocity, business processes that rely on exception reporting or periodic variance analysis to detect and respond to supply chain concerns can no longer cope with the demands for immediacy which are placed upon them. To minimize the effect of an external event or maximize the opportunity of a new customer demand, you need to know about it as early as possible so you can put the right people to work on it.

   Event management technologies can help companies sense what is happening both inside and outside the organization and increase the speed with which problems are detected and corrective action taken. Accepting that forces encompassed by the internal, external and customer dimensions drive chaos into the supply chain and disrupt plans, the quick detection of non-conformities and automated responses enabled by event management solutions will produce a more resilient supply chain. Event management solutions proactively bring issues to the attention of all stakeholders for fast resolution or initiation of a more long-term planning action. For example, knowing immediately when there has been a catastrophic breakdown in manufacturing will make it possible to allocate production to another factory. Knowing immediately when there has been unexpectedly high customer demand will make it possible to meet this demand by re-routing product as it moves through the supply chain. As companies strive to deploy concept-to-customer supply chains, event management technologies will be an important tool to deliver the responsiveness they need.

7. **Design to deliver.** A holistic view of the supply chain is incomplete without consideration of the design of the product itself. Because supply chain leaders know that up to 70% of new product introductions fail, product lifecycle management is increasingly being incorporated into supply chain thinking in two ways. First, product lifecycle management is being used to get product designs right the first time so the incidence of failure and time to market can be reduced. Some new product introductions fail because of unexpected compliance issues such as the use of materials that are banned in one area and not another. Effective use of product lifecycle management solutions can help avoid these complications.

   On another level, some manufacturers have recognized that introducing a third-party logistics provider into the supply chain process can be beneficial to both manufacturers and customers. For example, the final configuration of many cell phones and computers is being completed by logistics providers rather than the manufacturer, enabling the manufacturer to produce, ship, and stock at a level lower than the finished product. This approach is more flexible and takes cost out of the manufacturing process. In addition, it allows for a greater degree of customer-specific configuration and enables the delivery of final configured products often within 24 hours—to the customer's ultimate advantage. However, taking advantage of these postponement strategies, as they're called, requires designing the product with this in mind. Infor sees many companies doing just that—completing the circle from concept to customer.

8. **Track performance for continuous improvement.** To sustain the concept-to-customer supply chain approach, it is necessary to measure and track how well your company is addressing challenges from all three dimensions across your business and against your key performance indicators.

   There are a number of analytics and performance management solutions available that can streamline the way information is collected, analyzed, shared with supply chain partners, and reported to government agencies. Simply improving information flow can help to significantly reduce ongoing operational costs, in addition to facilitating better overall decision making.

Concept-to-customer benefits

By implementing some or all of the eight strategies outlined in this whitepaper, companies can derive tangible business benefits from the concept-to-customer approach. At its most fundamental level, concept-to-customer thinking leads to improved decision making because you have more complete, more accurate, and timelier knowledge of all the factors influencing your business. In addition, this type of thinking improves visibility and your ability to anticipate and respond to both risk and opportunity in the management of your supply chain.

More specifically, supply chain leaders who adopt the concept-to-customer approach can count on optimizing the flow of information and products throughout the supply chain. This, in turn, sets the stage for several business benefits, including:

- **Reduced operational expenses.** The clearer picture of end-customer demand and greater control over manufacturing and logistics capacities help companies reduce total operational costs, while varying the mix between the different cost elements of inventory, production, and transportation expenses.

- **Improved profitability.** The concept-to-customer approach can improve profitability by increasing the success rate for new product introductions and making internal operations more efficient and cost-effective.

- **Improved customer service.** Manufacturing, logistics providers, and retailers who adopt the concept-to-customer approach have more visibility up and down the supply chain so they better understand their role in meeting end-customer demands.

- **Improved competitiveness and faster growth.** The disciplined, strategic approach to understanding the internal, external, and customer dimensions of your business facilitated by concept-to-customer supply chain management puts your company in a better position to outperform competitors whose decisions are based on less complete and less insightful information.

Conclusion

Whether your company manufactures, distributes, or sells products directly to customers, it is critical to incorporate all supply chain business drivers into your decision making. The concept-to-customer supply chain management approach developed by Infor provides the conceptual framework for addressing business forces within the internal, external, and customer dimensions of your supply chain—enabling a true multidimensional view of the factors impacting business performance. With supply chain management and complementary solutions covering everything from product and network design to exception management and performance analysis to executing last mile delivery, Infor offers what customers need to build on this conceptual framework and implement the business strategies necessary for leveraging the value of supply chain management—from concept to customer.

About Infor.
Infor delivers business-specific software to enterprising organizations. With experience built in, Infor's solutions enable businesses of all sizes to be more enterprising and adapt to the rapid changes of a global marketplace. With more than 70,000 customers, Infor is changing what businesses expect from an enterprise software provider. For additional information, visit www.infor.com.

Infor Corporate Headquarters
13560 Morris Road
Suite 4100
Alpharetta, Georgia 30004
USA
Phone: +1(800) 260 2640

be enterprising