THE customer-centric supply chain

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The importance of dissolving the “wall” between the customer and the supply chain.

THE AMERICAN MIDWEST is home base for a company that manufactures industrial equipment. Its customers include engineers, designers and maintenance personnel. In the past, the relationship between the customer and the supply chain ran through marketing—the customer talked to marketing and if the information communicated from the customer involved changes to orders, these changes were communicated to supply chain through the sales and operations planning system (S&OP) and the master production schedule (MPS). This relationship was not that unusual: marketing worked with the customer; the planning system coordinated activities; supply chain worked to the schedule. No need for supply chain to talk to—or even know anything about—the customer.
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The problem, however, was that this system was not working. It took too long for changes and requests to work their way to the supply chain. Even when they were communicated, the changes were often distorted as marketing added their "spin" to the information. Even worse, the supply chain and the customer were not even aligned. The supply chain focused on cost and meeting the schedule; the customer often wanted responsiveness and flexibility. Ultimately, customers became frustrated; supply chain personnel became confused (if we met the plan then why was the customer upset); and top management was concerned with competitive pressure increasing and long-term customers buying from the competition. In response to these developments, top management formulated a radical solution: Cut out the middleman. Instead of the conversation beginning with marketing, supply chain would get to know the customers up close and in person; supply chain would focus on those things that customers wanted (and would be willing to pay for).

The new system delivered unexpected results. Customers now began to see the firm in a far more positive light relative to the competition. In addition to strengthening their brand, they discovered that customer complaints dropped, lead times fell and performance improved. For the first time, the supply chain team was able to align its goals with their customers' needs because they understood whom they were serving from first-hand experience. When there was a problem, the supply chain team had a new perspective on the issues, and could think more creatively about how best to resolve them. Unlike in the past, cost was no longer the primary driver. Ultimately, the company had discovered the power of the customer-centric supply chain.

That firm is not alone. The conventional wisdom that supply chain should focus on fighting fires and reducing costs is now being challenged. Due to a perfect storm of forces including changes in the market, changes within the customer base, changes in technology and changes within the supply chain itself, companies are discovering the power of having supply chains where there is direct contact with key customers. In this article, we explore these changes, their implications for supply change management and their implications for managers—both within the supply chain and within the firm. The wall between the customer and the supply chain is coming down and things will change.

Welcome to the customer-centric supply chain

So, what is the customer-centric supply chain? We define it as a supply chain where managers know their key customers, where they work closely with these key customers and where the supply chain is structured to meet the ever-changing needs of those customers.

Such supply chains are increasingly becoming a feature of the strategic supply chain of the 21st century. Its presence was observed in the recently completed "Supply Chain Management: Beyond the Horizon"—a three-year project, jointly sponsored by the Department of Supply Chain Management at Michigan State University and APICS, that focused on identifying the developments that will affect the supply chain of the future (for more information, see the description found at the end of this article). One of the findings involved the increasing importance of the customer to the new supply chain.

In a recent article in Forbes, SCM World's Kevin O'Marah contended that the supply chain should be aligned with the desired outcomes prized by the key customers and the strategic promises made by the firm, as contained within the value proposition. In another recent publication, KPMG recognized the critical and increasingly important role played by the customer in the supply chain.

Like many things that have emerged in supply chain management, the customer-centric supply chain is the result of the convergence of major forces. We have identified five: (1) the emergence of the strategic supply chain with its integration in the corporate's business model; (2) the Amazon effect; (3) changes in the customer base; (4) changes in technology; and, (5) changes taking place in the supply chain.

What does it all mean? This paper is driven by a very simple premise: If the supply chain is to be strategic and if it is to be effective (i.e., excel at doing the right things
rather than doing things right), then it must become customer-centric—any other position is inconsistent with the notion of the strategic supply chain. Therefore, it makes sense to start our discussion of the customer-centric supply chain with the business model.

**The customer-centric supply chain: The role of the business model**

There is much discussion today of the strategic supply chain—unfortunately most of it takes place without telling the reader what exactly is meant by the term. We have a very specific definition of the strategic supply chain: It is a chain that is integrated into, supportive of and aligned with the firm’s operating business model; it is a supply chain where the focus is on business, not supply chain excellence. When we link supply chain to the business model, which operationally defines corporate strategy and objectives, we make the supply chain inherently strategic.

The business model (see Figure 1) identifies three critical components that must be consistently maintained in alignment for the firm to compete.

- **The key customer.** The customer is the ultimate judge of what is produced. What is important about this component is that the business model recognizes that while all customers are important, some customers are more important than others. These become the key customers.

- **The value proposition.** This is what the firm offers to attract and retain key customers.

- **Capabilities.** These are the resources, skills, processes and assets that the firm draws on to deliver the value proposition. The supply chain resides here, along with corporate processes, measurement, capacity and corporate culture.

The business model strives to ensure consistent alignment between the three elements—what the key customer expects, what the firm has promised (the value proposition) and what can be delivered (capabilities). Two points must be made. First, maintaining this alignment is no easy task given that most firms are operating in environments characterized by aggressive competitive forces, changing technology and government actions that are often difficult to predict. Second, and important from the perspective of this article, the business model demands that the supply chain know who the key customers are, what they want (recognizing that not all outcomes are equally important) and how they will use the outputs generated by the supply chain. Simply put, you cannot be strategic without knowing who your key customer is.

**The Amazon effect**

Amazon is a modern retail juggernaut. Since its founding in 1998, Amazon has grown from being simply an on-line bookstore to a one-stop omni-channel retailer for everything from furniture to food to streaming entertainment services. In addition to a global footprint, Amazon has also expanded successfully into Cloud computing and storage. More importantly, it has changed how customers shop and what they expect—regardless of whether the customers are end users or a business. These changes are most evident in the following areas.

- **24/7 customer service.** Amazon’s customer service is always available by various means—on-line chats, telephone or e-mail. In addition, Amazon service is very accommodating with customers.

- **Easy to place orders.** A second area where Amazon has developed a unique reputation with its customers is the ease with which orders can be placed. Once you set up your account, establish the method of payment and allow one click shopping, then all that you have to do is click on the place order button and your order is placed.

- **Continuous flow of information about the order.** Once an order has been placed, Amazon continuously communicates with the customer regarding the status of the order (it has shipped, it will arrive by such a date). There is continuous visibility regarding the order.

- **A relentless focus on improving customer service.** Amazon realizes that its customers want products that are priced fairly but delivered quickly (and are willing to pay for it). Consequently, Amazon is always searching for and experimenting with new ways of reducing delivery lead
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times when the customer needs the product now. Amazon Echo, experimenting with drone deliveries and the use of bicycle messengers and Uber carriers for product delivery are examples of this relentless focus on improving customer service.

• **An informed buying process.** When you buy from Amazon, you are faced with customer reviews and alternative/complementary products. You are also given the option of buying from non-Amazon sources.

• **A trusted source.** Ultimately, with Amazon, you get a good price, although it is not always the lowest. However, what you also get is access to a source that you trust and that you know will honor its sales.

• **Reliable deliveries.** Amazon Prime customers know that their orders will be delivered in two days—free. And, if you want next day delivery, it’s extra. The result is one of the most predictable delivery systems in the retail market. This trait has also helped to set customer expectations for delivery—no more than four business days from the time an order is placed.

• **Easiest return process.** Finally, no one offers an easier return policy. If you don’t want a product, simply go online, click on the order placed and then indicate the item that you wish to return. After recording the reason for the return, Amazon sends a preprinted, prepaid UPS label. More importantly, your money (less shipping) is credited back to your account when the package has been scanned as received by the UPS pickup service.

These various attributes have not only shaped how customers view their interactions with Amazon but also their interactions with other companies. For example, at the 2015 Supply Chain Outlook Summit conference, sponsored by Supply Chain Management Review, one of the participants—a manufacturer of automation equipment—observed that his customers were now demanding the same things that Amazon was offering: full information, reliable deliveries and 24/7 service. The Amazon effect is real and it is changing what customers expect from supply chain management.

**Changes in the customer base**

Writing in *Forbes*, Micah Solomon noted that a major marketing change took place in 2015—the Millennial customer, born between 1982 and 2004, replaced the Baby Boomers as the key consumers. Numbering about 80 million, Millennials now make up over 25% of the U.S. population. More importantly, unlike Baby Boomers, this generation is growing in size. Millennials are fundamentally different from baby boomers in their demands and these demands are directly affecting and shaping the supply chain. Consider the following:

• **The customer is the star.** Millennials expect the buying and shopping experience to be focused on them. They want the marketing experience to differentiate between buying (a regular activity that involves fairly standard products) and shopping (where the act of identifying the product to be delivered is critical).

• **They crave a true, authentic personalized experience as customers.** Shopping is important to these consumers. They want to be involved in the design and delivery of the product. They don’t want a transaction; they want an experience. That is why we see the rise of providers such as Blue Apron, Fresh Now and M-Tailor. In these experiences, the supply chain is highly visible and the buying experience highly personalized.

• **They care about your company’s values.**

• **They expect your technology to work.**

• **They want to collaborate and co-create with your brand.**

• **Convenience and speed are key.** They want systems with which placing orders is easy—and speed, not cost, is king.

One result of this change in customer base is the increased importance of supply chain visibility. Visibility, something previously demanded by the corporate buyer as a way of dealing with supply chain risk, is expected by the new consumer.

**Changes in technology**

Technology has always played a major role in supply chain management, whether it was computers and MRP planning of the 1970s and 1980s or robotics and the Internet. Yet, the technology that promises to bring the supply
chain closer to the customer is the Internet of Things (IoT). IoT refers to the network of physical objects, or “things,” that are embedded with software, sensors and network connectivity that enable the collection, exchange, analysis and communication of data in real time. IoT includes smartphones, sensors in cars, equipment, appliances, fitness monitors, smart watches and product tags. To get an idea of the impact of IoT, consider the following: By 2020, it is estimated that there will be over 201 billion such devices. Along with RFID, improved analytics and social media, what IoT brings to both the supply chain and the market is: (1) the improved ability to quickly sense and seize opportunities taking place on both the supply and demand sides, and, (2) the ability to offer the market new services that are derived from this sensing and seizing capability.

The first opportunity was recognized in a 2017 SCM World Report on the digital supply chain. With IoT, the authors noted, smart sensors can now be embedded in products to quickly identify how customers use these products and more importantly to flag potential faults in the products—flaws that by themselves and occurring in isolation may seem random but are indicative of systematic problems in the products when aggregated. This allows supply chain managers to get out in front of potential problems.

This is exactly what the tire manufacturer Pirelli has done with its Connesso tire, an integrated tire and software platform that collects information about the condition and use of tires. This information is then relayed to the Pirelli Cloud for storage and analysis. The data can be used to help Pirelli flag the presence of any potential design flaws. Simultaneously, Pirelli is able to offer its customers a new service based on this sensing capability. Using an app, drivers can now access real-time performance information. If there is a problem, the app directs the driver toward the closest available repair shop where the tire can be fixed or replaced. And, the app can automatically book an appointment with the shop. In this example, we see the two capabilities offered by the new technology in action.

However, there are two important impacts. First, these new technologies enable organizations to quickly identify (sense) changes both in supply and demand, often without relying on other organizations to participate. Second, and more important, these developments short-circuit the “bullwhip” effect that has persistently plagued the supply chain manager.

Both researchers and practitioners have long realized that a simple, small change in a customer order becomes amplified as it moves through the various components of the supply chain. More importantly, as the order moves through the system, it consumes time (thus delaying responsiveness) and the information becomes distorted. Consequently, what’s received is dated and you can’t be sure whether you are dealing with actual customer issues or are seeing the impact of the actions of the various parties downstream. This changes with the new technology. Information that took weeks to become available to supply chain managers can now become available in days; information that was corrupted now clearly reflects what is actually taking place in either the supply or customer spaces.

The challenge for supply chain managers in this new world is two-fold. First, to reduce the time from the moment that this information is collected until that information is made available to the supply chain manager. This means addressing the extent to which the firm’s own planning system is a source of delay as the various systems interface with each other. The second is to shift from deliberate management to fast management—from waiting until all of the information is in and then acting after thorough analysis, to acting quickly on the basis of incomplete and changing information (recognizing that you will be wrong some of the time but that your supply chain has sufficient robustness to absorb any errors created by “wrong decisions” and that the costs of waiting until you are certain outweigh the costs of acting quickly).

One computer company experienced first-hand the power of this new technology. Previously, it took between 45 days to 80 days for the company to become aware of problems involving its personal computers. Even then, the information could not be trusted. By reviewing social media comments, review boards and other comments...
posted by the customers of its newly released personal computer, it was able to identify a design/quality problem in its power adapter within five days.

Before leaving this discussion, we should note that the visibility created by these new technologies into both the demand and supply spaces is not only critical to the supply chain manager, it is also being increasingly demanded by the customers who want to know more about the products they use and consume.

To drive home this point, consider how several leading automakers responded to a recent revelation by the Guardian. In 2016, the British newspaper published an article that linked the supply chains of some of the largest European automakers to illegal mines in India where child labor and debt bondage was widespread. In fact, according to this article, children as young as 10 years old were being used to extract and sort mica—the mineral that made car paint shimmer. This was dangerous, hard labor. In many cases, the children were working at the mines rather than going to school because their families needed the money.

Three Indian exporters—Mohan Mica, Pravin and Mount Hill—seemed to be the major transgressors. These companies, in turn, sold their raw materials to customers such as Fujian Kancai, a company whose customers included cosmetics giant L’Oreal, P&G, PPG and Axalta (the last two customers are leading car paint suppliers in a $19 billion world car paint market). In response to the Guardian article, Vauxhall (part of the GM group), BMW and Volkswagen launched investigations into their paint supply chains, because this finding, if supported, is against company policies that prohibit such practices. Each company came to the meeting armed with their measures (that often did not align). Consequently, the first two hours of every meeting were devoted to deciding on which measures to use and how to “translate” between the various measures. The meetings went downhill from there. This all changed when the supplier hired a new, more strategic head of supply chain management.

One of the first actions taken was to use their key customers’ key measures as their own measures. While initially greeted with surprise, people began to see the benefits offered by this approach. First, meetings with customers became shorter and less contentious. Gone were the two hours needed to decide whose measures to use. Second, the supplier began to recognize what constituted value for its customer—it was anything that caused the customer’s key measures to go up. The supplier began to build a strong case for why working with them was not simply good for costs; it was also good for them. By the way, it goes without saying that this approach works best when the customer’s measures align with the firm’s value proposition and strategic statement. When this alignment fails to occur, there are problems. This led to an interesting observation about supply chain management in the 21st century: Previously, good customers could fire bad suppliers; in today’s environment, good suppliers can and do fire bad customers.

Another innovation involving managers is that for the

**The new manager**

If these prior four factors were not enough, there is evidence emerging that supply chain managers themselves are recognizing the need to become customer centric, according to data generated from the Beyond the Horizon research project. After talking with managers from over 60 leading supply chain management systems, the research team began to realize that a critical test of the effectiveness of the supply chain was the extent to which the supply chain and its management was customer centric. This test focused on performance measurement.

Specifically, those supply chain managers that used their key customers’ key measures as their own seemed to continuously excel in performance. The epiphany for this came out of an interview with the top management team of a Midwestern manufacturing and design company. As presented by the vice president of supply chain management, prior to this change, meetings with the firm’s key customers were often contentious and drawn-out affairs. The meetings went downhill from there. This all changed when the supplier hired a new, more strategic head of supply chain management.

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supply chain to be truly customer centric, its personnel had to think of the key customer not as a market segment, but as an actual person. This point was driven home in an interview with a manufacturer of inexpensive bicycles that were sold through large retailers such as Meijers, Toys R Us and Walmart. Previously, the manufacturer had thought that its key customers were parents and children. This focus turned out to be wrong. Parents bought their bikes based on availability and not on brand recognition. Availability, in turn, was influenced by two specific people working within the customers’ organizations: the store manager and the purchasing agent. So, the managers goals became to make it easy for them to place orders and for the sales to be profitable. With this change in orientation, the bike manufacturer’s sales increased.

Finally, supply chain managers have recognized that they are the prime determinant of Moments of Truth (MOT) in their companies, a concept first proposed by Jan Carlzon, the former CEO of SAS Airlines. Carlzon noticed that the customers’ views of the company serving them were strongly influenced by their last direct interaction, or Moment of Truth, with that company. They were strongly influenced by factors such as the frontline personnel, inventory and capacity—factors under the control of the supply chain. His goal was that every MOT should enhance the airline’s reputation with its customers. If that is the goal (it appears to be so given the factors discussed under the change in customers), then the supply chain by definition must become customer centric. When the supply chain misses a delivery, the result is a negative MOT; when a delivery driver goes out of his or her way to ensure that an order is delivered on time and with quality, that is a positive MOT.

**From straight lines to triangles: Implications of the customer-centric supply chain**

In the past, our relationship with our customers was a straight-line relationship similar to that found in Figure 2.

The new relationship at the heart of the customer-centric supply chain is illustrated in Figure 3—a triangle. There is now a direct relationship between the customer and supply chain management. However, this new relationship brings with it certain key implications for both the supply chain manager and for corporate management overall. These include the increasing need for fast management, acceptance of the “preferred status” as the new black and the need to embrace the new realities of the customer-centric supply chain.

**Fast management**

Managers must now manage fast rather than manage deliberately—a fact that was first realized during the Korean War. Then, the U.S. military was shocked by the losses suffered in air-to-air combat. Advances in technology from propellers to jet fighters, combined with the best pilot training system in the world, should have given the U.S. Air Force a huge advantage over its adversaries. Yet, the Air Force found that pilot mortality was distinctly bimodal in distribution—with many pilots being shot down within days of their introduction to combat. To understand this situation, the Air Force brought in one of the best “out-of-the-box” thinkers—Colonel John R. Boyd. After reviewing the data, he determined that the reason for many new pilots being shot down lay in their decision-making process, which was too deliberate. That is, they waited until they were sure that they were facing an enemy. With closure speeds in excess of 1300 mph, pilots were left with little if any reaction time. By waiting, they became victims, not victors. Boyd realized that jet propulsion technology had changed the rules of air-to-air combat. Pilots needed to make faster decisions, with less information. So, the Air Force began training pilots to make decisions using the OODA loop procedure—a four step cycle, consisting of Observe, Orient, Decide and Act—to guide their decision making.
The same thing is happening in supply chains. Technology gives us the capability to see further and faster. Supply chain managers need the equivalent of an OODA loop to take advantage of new technologies and make decisions at the new speed of business. This new strategic response cycle consists of the following steps: (1) sense (the threats/developments); (2) assess (are these developments important now or in the future); (3) formulate (a response); (4) deploy (the response); (5) evaluate (did the response work?); (6) recalibrate (are our original goals still appropriate or do they have to be re-evaluated?); (7) learn (by asking: What went wrong? What went right? What was missing?); and, (8) repeat. In today’s world, the coin of the realm is management by speed, not by cost reduction.

Preferred status is the new black

Today’s key to success is achieving “P” status, or “preferred” status. For customers, this means that they are viewed as the preferred customer by their suppliers; for suppliers, this means that they are viewed as the preferred supplier by their customers. In practical terms, this means that whenever a customer has a need to meet, they will consider you first. Achieving “P” status provides a strategic advantage, even in an environment where customers have many choices in suppliers. If you understand what has the greatest value to your key customers, and if you align your supply chain to these metrics, you will be in the best position to grow the preferred status relationship—increasing top line revenue and increasing market share. This is the lesson that Amazon has painfully taught its many competitors—because it is the “P” supplier to many of its customers, these customers always turn to Amazon when they have a need to fill.

Embrace the change

While many firms will chose to ignore these developments and continue to do business as usual, other firms—and managers—will embrace the change. The latter will flourish as they discover new ways to better serve their key customers. For the former, survival will be more problematic. For these firms, we offer the advice given by W. Edward Deming when he was confronted by a Board from a large multi-national that wanted to know if they had to do everything that Dr. Deming recommended regarding Total Quality Management: “No, you don’t have to do everything that was recommended. Survival, after all, is not mandatory.”

The brave new world of the customer-centric supply chain

The business landscape is changing quickly. New business models, changes in the customer base, the powerful Amazon effect, new technologies and changes in the supply chain itself are all forces that need to be addressed strategically.

Adapting to these changes will require companies to implement strategic, customer-centric supply chains. To enable this transformation, companies must first identify their key customers, and then structure their organizations so that the supply chain team is side-by-side with sales and marketing in building and managing those relationships. When faced with decisions and trade-offs, the key question should always be “what would make us the ‘P’ supplier for this key customer?”

Deming’s admonition is not just directed at firms:

The brave new world of the customer-centric supply chain will require supply chain managers to embrace the change, drive it in their organizations and learn to manage with their customers in mind rather than focusing strictly on costs.

About Supply Chain Management: Beyond the Horizon

Strategic Supply Chain: Beyond the Horizon (SSC:BTH) is a long-term project aimed at identifying and exploring emerging issues in supply chain management both domestically and internationally. This project, jointly sponsored by Department of Supply Chain Management, the Eli Broad School of Business and APICs, has over a three-year span studied over 60 leading supply chain management organizations. The results and insights obtained from this project have been fine-tuned and tested in a series of focused workshops. This project has been led by David Closs and Pat Daugherty of the Department of Supply Chain Management at Michigan State University.