Supply Chain: The New Frontier for Small Manufacturers

By

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Supply chain can be an elusive concept. For small manufacturers the question is - *what is supply chain and why should they care about it?* The short answer is that a basic tactical application of supply chain is necessary just to stay in business. A strategic application is the path to prosperity via superior financial performance. To elaborate on these answers we will take a brief look at how the concept of supply chain has evolved over the last two decades, what it means today, and how small manufactures can use it. We will also examine how supply chain strategies can be leveraged to reduce working capital, increase profitability, and sustain competitiveness in the global economy.

As a business concept, the term "supply chain" is relatively new. The term was first formalized by purchasing professionals in the early 1980’s and referred to the chain of suppliers that sold raw materials. As time went on, transportation and logistics became increasingly integrated with the purchasing function along with warehousing and materials management. And so, the concept of supply expanded to include these additional functions.

In the 1990’s the information revolution was facilitated by the introduction of the Internet and a variety of information sharing standards. For the first time information was recognized as a vital component of the supply chain. With tighter integration, financial settlement processes became more automated and streamlined between buyers and suppliers. Private e-markets and trading exchanges created virtual sourcing markets and provided increased visibility of transportation movements.

As supply chain evolved from its nascent form, it has been described in numerous ways. The definition of the concept will depend on the discipline or a defined point of view. Information technology vendors currently define the supply chain as an “adaptive network” to emphasize the critical role of information systems as a way to create visibility within and between trading partners. This visibility becomes the driver for quick response management—the ability to proactively manage the enterprise based on a 360 view of events in the supply chain.

The transportation and logistics group defines supply chain as a logistics function. Specifically, they refer to optimizing the movement of materials within and between
trading partners. The objective is to minimize the cost of materials and transportation while reliably supporting customer service targets. The key is to optimally balance the trade-offs between inventory, facilities, transportation, distribution, and customer service.

Purchasing professionals are perhaps the least enthusiastic about progressive supply chain thinking. To many in this group, suppliers are to be handled at an arms length distance. Adversarial price negotiations, redundant souring, and lengthy contracts are still widely used. But the challenge for “old school” purchasing professionals is that companies are now reducing the number of suppliers to cut down on transactional complexity—an indirect cost driver. This means transitioning from arms length relationships to long-term strategic relationships. This will require a radically different approach to supplier management than what many purchasing professionals are accustomed to.

As the concept of supply chain has evolved, different groups have defined it in their own unique way based on how their function contributes. The analogy is similar to the story of three blind men trying to describe an elephant. The problem is that each man is touching a different part of the animal and describes it based on where they are. What is needed is a holistic view of supply chain that incorporates all these different perspectives on both a theoretical and operational level. The focus of this paper, however, is on the operational aspects of supply chain. The goal is to establish a “working” concept of supply chain that can be put to practical use.

At the highest level, a supply chain is simply a network of companies that work together and for mutual gain. The operational definition is called supply chain management (SCM). At this point, it is helpful to divide SCM into two parts—managing the business relationships (strategic) and managing the shared processes (tactical). Of course, these two categories are not black and white distinctions because managing one part will involve the dynamics of the other part as well.

But generally, the strategic and tactical sides of SCM are handled in very different ways by different people within an organization. Each is distinguished by the use of different management methods and tools. To refine the focus down further, we will primarily deal with the tactical side of SCM in the context of how small manufacturers can use it.
Specifically, strategic SCM involves trading partner selection, articulating the terms and conditions of the relationship, and on-going governance of the arrangement. It is strategic in the sense that the objective is to leverage trading partners to achieve a future business advantage. Strategic SCM can be challenging due to the “soft” human factors involved such as building and sustaining trust, conflict resolution, power dynamics that determine who gets what, and dealing with new situations (exceptions) not defined by contracts. Emotions can run high when trading partners perceive opportunistic behavior on the part of other trading partners at their expense.

Tactical SCM is about managing the day-to-day processes that run between partner firms—the “hand offs.” These are the shared processes that must be coordinated with trading partners in order to achieve operational efficiency and effectiveness. Generally, there are three specific categories of shared processes—material flows, information flows, and cash flows. Together, these flows are often referred to as supply chain logistics or just logistics.

These three process flows are interdependent in the sense that one flow does not occur in the absence of the other flows. The three processes move in different directions at different times, but they are always linked together in a cause and effect chain. For example, information signals and regulates the flow of materials. Materials are then shipped, received, handled, and stored. At some point there is a change of material ownership which then creates a financial obligation. Obligations are eventually settled via the transfer of cash between trading partners. For our purposes then, supply chain improvement means optimizing these three logistical flows via the discipline of tactical SCM.

Today, perhaps the two biggest things that have blind-sided American manufactures have been the effects of globalization and outsourcing. American manufacturers are in mortal combat with other countries – China, Mexico, Japan, and Canada – for a limited pool of increasingly demanding customers. As a whole, American manufacturers have lost much ground to foreign competitors who have the advantage of lower labor costs, lower tax burdens, and trade agreements that give them favored treatment. Additionally, many of these global competitors are relatively new, so they do not have the problem of transforming an organization steeped in antiquated business practices.
The erosion of the American manufacturing base has been going on for years. It started in the early 1980’s and has been significantly escalating since the 1990’s. Remember the fight to “Buy American” movement? Super retailers like WalMart were once avid proponents of the “Buy American” movement, embellishing American made products with “made in the USA” labels. But we do not see this anymore. Retailers discovered an important lesson — although many consumers would support American industry when given a choice, they will never pay more money for the privilege. The bottom line is that consumers want the best product for the lowest price without regard to where it is made.

Lesson learned. Now, retailers like WalMart are the biggest importers of foreign goods, often packaged under their own private brands. Consumers see “made elsewhere” labels on just about everything they buy now. The reality is that most people do not understand the economic implications and how this will eventually impact them personally. Already we are beginning to see a middle class squeeze as the U.S. industrial base shrinks and transitions to a mature or declining stage. The jobs lost will not be coming back because they are no longer here!

So you might wonder what has been going on for the last 15 years. How have manufacturers been compensating for the competitive gap? The answer is that the large manufacturers and super retailers have been squeezing their suppliers for price concessions on a yearly or systematic basis. Small manufactures have no choice if they want to remain a supplier, so they cut their selling price. This has enabled finished goods manufacturers to keep their prices relatively competitive in the global economy.

The problem is that price cuts that are not concurrent with increased operational efficiencies have to be funded somehow, most often from the supplier’s gross margin. To the point, American manufacturers have stayed in the game by reducing profitability throughout the supply chain. But the large manufacturers have the most power and, like a CEO of a corporation, will be the last to feel the pinch. It is the small manufacturer who has lost the most in this profit re-distribution scheme. Many are teetering on insolvency. Others are already insolvent and the only thing keeping them going is artificial cash flow (other people’s money) created by stretching payables and the miracle of modern financing—asset loan revolvers, receivables factoring, equity fire sales, etc.
This game can go no further. It is do or die time for many small American manufacturers. Out of desperation, many have reverted to the traditional cost cutting approach of “squeeze’ em hard and often,” referring to their own organization and their suppliers. But this strategy is doomed to fail because competitive price pressures are increasing at a much faster rate than what non improvement-based cost cutting can compensate. Many small manufacturers have cut margin so far that going any further would sacrifice bare minimal profitability necessary to stay in business.

The paradox is that at some point cost cutting without real improvement will eventually force a manufacturer to reduce (or not invest in) strategic assets — quality people, facilities, advanced machinery, information technology—in order to maintain profitability. This trade off comes with terrible price because the attrition of these assets will quickly erode gross margin anyway as cost, quality, and lead time worsens. This is the stealing from Peter to pay Paul scenario. So, what is the way out of this catch-22 dilemma? In today’s global market, a sustainable competitive position can only be achieved with continuous operational improvements to the supply chain.

Back in the beginning, all firms were vertically integrated. They would purchase the needed raw materials and perform all of the value-add activities to transform the raw materials into something that could be sold. Over time, it became more economical to outsource certain manufacturing functions. Today, original equipment manufacturers (OEMs) have outsourced as much as 70% or more of their manufacturing processes! This has introduced efficiencies and reduced cost for OEMs, but it has also made them very dependent on their supplier network.

Therein lays the irony. OEMs can squeeze their suppliers for price concessions at their own peril. That is, OEMs unwittingly undermine themselves when they force their suppliers to fund price cuts from gross margin which in turn may force some suppliers to reduce strategic assets. Ultimately, price cuts without improvement will eventually compromise the ability of suppliers to sustain the quality of outputs necessary to fulfill OEM requirements. Now, large manufacturers are realizing that they are in the same boat as their suppliers. As such, their supplier’s problems are very much their problem.

The interdependency between trading partners means that what is good for one firm will often be good for the others. Inherent in this statement is that the old days of win-loose games are over. It just doesn’t work anymore. For firms that are interdependent
on one another, a loss for one will eventually be a loss for the others. Now that such firms are sailing on the same ship, so to speak, collaboration is the winning strategy, not adversarial gaming. This kind of thinking is difficult to put in to practice because American business has always been adversarial at the firm level. Old habits die hard!

This is where supply chain management comes into play. To elaborate on the prior definition, the term supply chain describes a complex system of interdependent organizations that are linked together for the purpose of producing something for customers. But this high level concept is too abstract to be of practical use. Earlier, tactical SCM was discussed as the method for improving the supply chain via the optimization of the three logistical flows between trading partners.

When firms are interdependent, this means that their processes are linked together, effectively creating integrated processes that flow between the firms—information, materials, and cash flows. Because no one firm is the exclusive “owner” of an extended process, this means that firms must collaborate to improve them. That is, trading partners have to coordinate their efforts to minimize the costs, lead time, and variance within these processes in order to maximize operational efficiencies between them. With this premise, we can further refine our definition of supply chain improvement as the collaborative improvement of logistical process flows between trading partners via tactical SCM.

Traditionally, companies are conditioned to improve operations within their four walls without regard to outside firms. But because of interdependence, this is not an effective approach for firms that share critical processes. If a company improves the part of an extended process that is within their direct control at the expense of another firm that controls the other part of the extended process, then there has been no real or sustainable improvement. This is a classic “shifting of the burden” dynamic that can occur, for example, when a large manufacturer goes to a just-in-time replenishment system.

If the improvement is unilateral, the net result may be that inventory is pushed out of the larger firm onto the smaller firm. The larger firm thinks that it has won a financial victory. But soon the large firm experiences “cost creep” as the smaller firm pushes cost back onto the large firm in covert, sometimes creative ways. Eventually, this recoil effect results in a higher cost than what the large firm started with. In addition, the large
firm has eroded good will with their supplier making it all the more difficult to collaborate in the future. This scenario plays out every day as companies push and pull against one another in a game that both end up losing. Meanwhile time and resources are squandered and global competitors seize the opportunity to grab more market share.

Supply chain is an abstraction in the sense that it describes a network of organizations that work together for mutual financial gain. It is a theoretical model that attempts to describe and predict business behavior. As we have increased our understanding of how firms work together, it would be more accurate to replace the term supply chain with the term “value network”.

First, the term supply chain suggests linear dynamics. In fact, a supply chain operates as an open system and as such is regulated by the dynamics of interdependence, feedbacks, and time delays. Second, the term supply chain reflects its origins and so tends to emphasize the sourcing of raw materials. This is a myopic view today because, in reality, sourcing is only part of the picture. Buyers, suppliers, and third party service firms work together, sometimes sequentially, sometimes concurrently, to add value to a product that is eventually sold to a customer. Thus, the term value network better describes this phenomenon. However, the term supply chain will remain persistent through this paper because it is the current norm.

When it comes to actually improving their piece of the supply chain, manufacturers need something more than a theoretical model to work with. As an abstraction, a supply chain belongs to no one organization. That is to say, there are no financial performance metrics for a “supply chain” per se. At the end of the day, the financial impact of supply chain improvements must reflect on the financial statements of a firm(s). So when consultants and academia speak of improving the supply chain—what does this mean exactly?

Let’s be honest, who really cares about the whole theoretical supply chain (except academics). A small manufacturer is concerned with what they can do now to improve their piece of the supply chain. They want financial results on their books. To the point, supply chain improvement is a collaborative effort with other firms within the “sphere of influence” of a single firm that drives the improvement. The firm driving the improvement is the change agent and the others are trading partners that can potentially contribute to the improvement effort.
Most always the sphere of influence is one tier down stream (the customers) and one tier up stream (the suppliers). That is, the portion of the supply chain that any manufacturer can improve is between themselves, their customers, and their suppliers. There are also third party organizations that provide value-added services such as transportation, facilities, financial, information, etc. This 3-tier portion of the supply chain is really an extension of a manufacturer’s own enterprise in the sense that it behaves, for all practical purposes, like a single enterprise. The term “extended enterprise” is useful here to distinguish this part of the supply chain from the larger abstraction that can go on seemingly forever (see Figure 1.).

To summarize, the extended enterprise is that portion of the larger supply chain abstraction that can be directly improved by a manufacturer. This means improving processes that flow across three tiers extending from a manufacturer to suppliers and customers including any third party service organizations. Fundamentally, improving the extended enterprise is no different in principle than the way progressive companies have always improved their business—getting people to work together on a big picture objective. Everybody understands how their function contributes to the overall objective.

The key is to realize that customers and, in particular, suppliers are now part of the company, not just external resource inputs. You would not, for instance, want to improve one function within your company at the expense of another function, effectively sub-optimizing both functions and creating a net loss for the firm (although...
this is still common enough). Likewise, you would not want to promote win-loose gaming within the extended enterprise for the same reason. The extended enterprise is the “whole” company. To see it this way is to jump a big conceptual hurdle.

The dynamics of power and control are different in the extended enterprise. A firm cannot directly control trading partners like they can employees because trading partners are sovereign organizations. A firm can influence, motivate, or coerce trading partners, but they always have the choice to play along. That’s why it is important to develop a coherent business case for collaborative improvement that clearly shows how all firms will benefit financially from a supply chain improvement effort. Financial motivation, not “do it or else” threats, is the way to appeal to the self interests of trading partners. This kind of motivation is powerful fuel for creating the kind of synergies necessary to drive home real and sustainable improvement.

To further narrow the scope of potential improvement, the concept of extended enterprise needs to be vetted in more detail. For a firm to be included in the extended enterprise means that the firm performs a vital process for the manufacturer that the manufacturer cannot do without—a strategic outsourced function. Commodity suppliers and customers are not strategic because they can easily be substituted. That is, a manufacturer will not have to look far to find another supplier of a stock item or service. Likewise, commodity customers are relatively easy to find because demand for commodity products are pervasive and customer loyalty is based almost entirely on price.

Suppliers and customers that are within the sphere of influence—a tier up and a tier down—but are not part of the extended enterprise are still a part of a company’s supply chain. This is an important distinction to make because improvement should always be targeted within the extended enterprise not in the “outer” supply chain. The reason for this is that improvements to anything other than the extended enterprise are non-sustainable. Given the risk, volatility, and lack of influence in the outer supply chain, it is doubtful that real improvement can be achieved. If it is, it will not last for long.

So, the first step for a small manufacturer looking to improve their supply chain is to delineate their extended enterprise. Next, determine where the key leverage points are for improvement. First, determine which suppliers and customers you have the most influence with. Then target extended process flows that, when improved, will reduce
working capital and will enable price reduction while maintaining or increasing profits. Further, make sure that such improvements are not funded by the reduction of strategic assets.

Such improvement is the mythical “low hanging fruit” that consultants are constantly talking about. These quick hit initiatives can pay big for all firms in the effort because working capital reduction results in a one-time cash windfall. What is happening is that cash is being reclaimed that was previously tied up in working capital assets that are no longer needed. This is because as a company improves its extended enterprise, it can do more with fewer assets.

The best part is that this particular kind of cash windfall is tax free, so every penny can be applied to fueling growth or funding more improvements! The taxes were paid on the capital when the assets were purchased. This is better than cash flow that come from cost reduction and revenue enhancement because these cash windfalls (profits) are taxed heavily.

The bottom line is that supply chain improvement is not an option for small manufacturers. Cost cutting strategies that are not based on real improvement and that promote win-lose gaming scenarios will not save the day. For many firms, gross margin cannot erode any further without pushing into the red zone. The solution is to improve extended processes between trading partners in such a way that all firms are financially self-motivated to participate.

For manufacturers, continuous supply chain improvement is the paradigm for achieving real and sustainable prosperity—the new frontier. When firms collaborate to improve the supply chain, something quite extraordinary happens—synergies increase the size of the financial pie and escalate the competitive performance of all trading partners. When American manufacturers master this, they will be fierce competitors in the global economy and it will not be them on the defensive.
This article is Part I in a series of articles on supply chain improvement for small manufacturers. Part II deals with how supply chain improvements specifically impact the financial value drivers of a company.

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