

# Integrating the Supply Chain



**By: Thomas J. Westbrook, J.D.  
President/C.E.O.  
World Wide Wood Network, Ltd.  
PO Box 2592  
Yelm, Washington 98597  
[www.wwood.net](http://www.wwood.net)  
[tjw@wwood.net](mailto:tjw@wwood.net)**

## **I. Defining the Supply Chain.**

We continually strive to improve our business processes to find ways that enable us to be more efficient and more productive. Making our supply chain activities more streamlined is one of the ways we can accomplish this objective. To do this, it becomes essential to integrate all participants in the supply chain within a collaborative process. Once this is done, it truly is possible to manage the supply chain and streamline supply chain activities.

Having a firm understanding of what comprises the supply chain is the first step in learning how to achieve supply chain integration.

According to The Supply Chain Council ([www.supply-chain.org](http://www.supply-chain.org)), the supply chain encompasses every effort involved in producing and delivering a final product or service, from the supplier's supplier to the customer's customer. Supply Chain Management includes managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer.

Simply put, supply chains link suppliers, customers, shippers and service providers together in the business process.

## **II. In the Beginning.**

In the early days of commerce, man first brought his wares to a centralized public market. To this place buyers came in search of products, found what was available, negotiated prices and usually took delivery in person. This centralized market was rich with information about the products on display, but it was not until reaching the market and searching for products that a buyer could even know what products were available.

Over time, with the advent of new communication devices and delivery mechanisms, commerce was able to decentralize. As the telegraph, telephone, telex and FAX were introduced and embraced by business as a tool to facilitate business processes, commerce began to spread over larger geographic distances. Then the train, automobile, airplane and other transportation methods began to move products between those locations at commercially affordable rates and times. This evolved gradually to the manner in which we have

conducted commerce for the last hundred or so years - a supply chain that is decentralized and usually disconnected.

### **III. Information is the Glue that holds a Supply Chain together.**

Historically, information flow has been a battle between the richness (the qualitative nature of information) and the reach of information. So, there has always been a trade-off between the quality of information and the ability to increase the number of people that can access the information. The trade-off has been to accept the way we do things as “good enough”. But, today we do not have to accept that trade-off. The development and adoption of Internet-based technologies is allowing information to extend its reach while maintaining its richness. Good enough is no longer acceptable.

Along with relationships, information and the mechanisms for delivering information are the glue that holds together the structure of business as we know it today. Companies that establish business relationships also establish channels of information flow. Some channels may be rich with information, such as personal communication between individuals via face-to-face meetings or telephone conversations. Other channels may extend further, such as electronic or digital information transmitted via the Internet.

Information normally flows through the supply chain along with the physical goods. As mentioned earlier, when commerce first began, information and goods did not come to people; people had to move to the marketplace to find the information and the goods. In that marketplace, the physical goods and information were bundled together with the person selling the goods. But, as the reach of communication and transportation extended over the years due to technological advancements, information and goods could move closer to the people. In some cases, both were delivered to their doorstep.

One of the earliest and simplest examples of how information was first removed from its physical barriers was during the battle of Waterloo. A gentleman named Nathan Mayer Rothschild amassed a fortune by running goods for the British through Napoleon’s blockade and transporting gold to finance Britain’s army in Spain. He was able to do this by moving information back and forth between Britain and the battlefield through a configured supply chain of some carrier pigeons and a few good men. Rothschild was able to create a network that separated the information from the physical goods and at the same time extended the reach of the information.

In today’s economy the creation of a networked supply chain is much easier to achieve through the application of digital networks, which make it possible to remove the link between rich information and its physical carrier. When information can be made available across the supply chain through a

collaborative process, the logistics of making, distributing and delivering goods become more efficient.

#### **IV. Transitioning to a Networked Supply Chain.**

A network is a conduit for information, and the intelligence of a network is determined by its functionality; the ability to collect, transform, store and distribute information. In the absence of a network, data is static and can only live where it resides. Once data is unlocked from where it is stored, the data becomes information. When information can be accessed and delivered across the supply chain, it becomes intelligence, and intelligence delivers value to supply chain participants.

When information is moved to the end of the networks, intelligence is no longer held hostage to the middleman in the business process. So long as the information can be decoupled from the physical goods, the information can flow to the ends of the network and be made available to the seller, customer and shipper.

The Internet provides the delivery mechanism to expand the reach of the information, and the network expands the richness of the information and the intelligence.

By connecting the business process both within the enterprise and between enterprises, the network moves information and intelligence by extending the reach and richness of the information. This allows the recipient to make intelligent decisions upon timely and accurate information.

#### **V. Disparate locations and systems.**

Recognizing that information often resides in disparate locations and within disparate systems, the ability to move information through the network is dramatically improved by the implementation of standards or by data transformation and transmission.

As we well know in the Wood Products Industry, the creation of standards is not an easy or quick process. Due largely to political agendas, egos, or the belief that competitive advantage is gained through “secret knowledge”, companies often prefer to have proprietary grades or nomenclature that they believe cannot be duplicated by others. Unfortunately, all this does is cause friction within the supply chain. Friction adds inefficiency and costs.

Value is created by connecting otherwise disparate systems and processes through a network’s functionality; thereby creating an information exchange. This

allows companies to communicate with each other in a way they could not communicate previously.

By coordinating cross-company processes, a large number of processes can be automated, thereby reducing duplicate data entry and data entry errors. This also removes inconsistencies, errors and misunderstandings that otherwise routinely arise, which cause additional marketplace friction, waste of work and time.

Business processes and communication no longer have to end at the edge of companies. The processes can be managed as they should be, chains of activities performed by those enterprises or organizations that are best suited for the task.

Thanks to intelligent networks and enterprise-to-enterprise information exchange, a manager can view supply chain management as a process and management challenge, rather than a technological challenge. Companies can now turn to optimizing their business process with their customer and suppliers; not just within their organization.

Streamlining the supply chain is not an end game, however. Collaboration throughout the business process is possible as a result of the increase in richness and reach of information enabled by intelligent networks.

## **VI. Integrating the Supply Chain.**

The supply chain has always been about companies working together. These relationships have always involved some degree of collaboration to solve bottlenecks in the supply chain and overcome bumps in demand or supply. As Chris Newton, a senior research analyst with AMR Research, notes, "Traditionally these activities have been very silo based, and not a lot of real collaboration was going on." The problem was that the interaction between the individual players in the supply chain was primarily human-to-human. The speed with which information traveled limited the utility of that information.

Take for example, the shape of the supply chain with the advent of the American Industrial Revolution. In those days (1930's) Ford and GM had to have the total supply chain captured internally, essentially due to lack of communication and connectivity. If others made products or performed services they needed, they could not find out about it, or if they did, the costs associated with having outsiders provide the product or services was much higher than they could replicate internally.

With the advent of the telephone these companies were able to move away from this centralized or internalized concept; thereby allowing them to create a network. So, when the cost to do something internally was more than doing it

outside the company, they could more efficiently have it done outside. This started the expansion of the supply chain.

As communication and Information Technology (IT) solutions became more common and user-friendly from the 1960's to the present, the FAX machine and computer enabled companies to extend the reach of information at faster speeds. Coupling this with more efficient means of transportation, goods were able to move greater distances at higher rates of speed. Increased reach and speed of information and the physical flow of goods shortened inventory cycle times, as well as time to market. The supply chain was becoming more fluid, but was far from being integrated.

Today, the Internet has allowed companies to move these functions to web-based networks where clusters of businesses that typically do business with each other come together via the connectivity of the Internet. Companies can collaborate and communicate with each other through a single Internet interface. When all the participants in the supply chain become connected electronically, allowing the unfettered flow of information, the supply chain becomes fully integrated.

Utilizing web-based technologies, companies are starting to integrate their supply chains in a system-to-system manner, minimizing the need for human contact, human data entry or any sort of human involvement. Moreover, data can move in real-time and disparities in size of companies are becoming less critical as software providers come up with solutions that allow small companies to connect with large customers through the Web. While the applications to connect companies with their trading partners are far from free, the Internet is a relatively inexpensive medium, unlike a value-added network (VAN) that charges a per-transaction fee for data transmission.

e-Commerce is driving a revolution of the supply chain, as we have known it. With processes that once took days or week now taking minutes to perform, the potential for cost savings through improved efficiency is greater than ever.

Fortuitously, e-Commerce solution providers have come forward with new tools that enable supply chain participants the opportunity to connect and collaborate via web-based networks. While analysts, consultants, solutions providers and enterprises continue to debate how companies ultimately will integrate those new tools into their operations and the shape of the supply chain of the future, there is a consensus forming around one vision for the next-generation supply chain. The underlying theme is connectivity.

As a result, we are moving from production based supply chain to a fulfillment-based model. In industrial age, production was the primary business activity. In the technology age, fulfillment becomes the primary business activity. The

trading networks that are set up turns the chain upside down and creates a demand chain where customer orders drives the business activity. Consequently, fulfillment of customer demand is the key. It is no longer about just tossing the customer a product; it is also about improving customer relationships through better customer service.

## **VII. Benefits of the Integrated Supply Chain.**

How the benefits of an integrated supply chain are perceived or even measured will largely depend upon whether you are a supplier, customer or third party provider like a shipper. Or, it may depend upon how you view yourself.

An obvious benefit is reduction of inventories. Moving from the source, hold, sell and supply mode of operation to the sell, source and supply mode. Or, put another way, from “just in case” inventory management to “just in time” inventory management. Better inventory management allows increased turns in the inventory cycle, which reduces holding costs while increasing cash flow.

By having better information and better access to that information, customer service can be substantially improved by being able to make more timely and accurate sales, replenishment and shipping decisions. Emerging technologies allow trading partners to collaboratively plan, track orders through the fulfillment process, maximize process efficiency based upon historical performance data and provide superior service to the point of delivery.

Finally, process automation across the extended enterprise reduces the amount of manual process and potential error. This removes the opportunity for incorrect data entry. Incorrect data or information causes reliance upon confusing and contradictory information, which often leads to customer dissatisfaction and disputes between trading partners. Not only does this reduce cycle time, if it occurs repeatedly over time it is likely to cripple the very relationship that is the heart of the business process.

The companies that adopt the collaborative tools and processes available today, and into the future, will find that the ultimate benefit of participating in a networked supply chain is a significant competitive advantage over their competitors that do not participate. In that case, supply chain integration does become the end game.