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Supply Chain Integration and Benefit

In the current state of global economy and volatile market environment, different companies in a supply chain are forced to act together. The integration among supply chain trading partners is vital for cost reduction, growth and profit. The central focus for companies is to bring products from sources to markets together. Companies share and manage product procurement, marketing and shipping in collaboration. The performance of entire supply chain depends on the coordinated effort of each supply chain partners. Lack of coordination can result in one partner in a supply chain shouldering the majority costs, risks the price escalating. Coordinated contracts allow the risk of rising prices to be shared across the supply chain, as well as, the customer.

According to the Global Supply Chain Forum, SCM is ‘the integration of key business processes from end user through original suppliers that provide products, services, and information that add value for customer and other stakeholder’. Companies connect across the globe to find strategic partners that offer low production costs, yet capable to produce quality product. The companies find the best logistics transport and support for reliable and faster delivery. The optimal supply chain coordination does not always mean the fastest operation; it may adequately mean to provide time sensitive delivery or pickup, quality product with low cost, and well-managed customer service. The relationship between supply chain partners and the product flows across a supply chain is shown in figure 1.

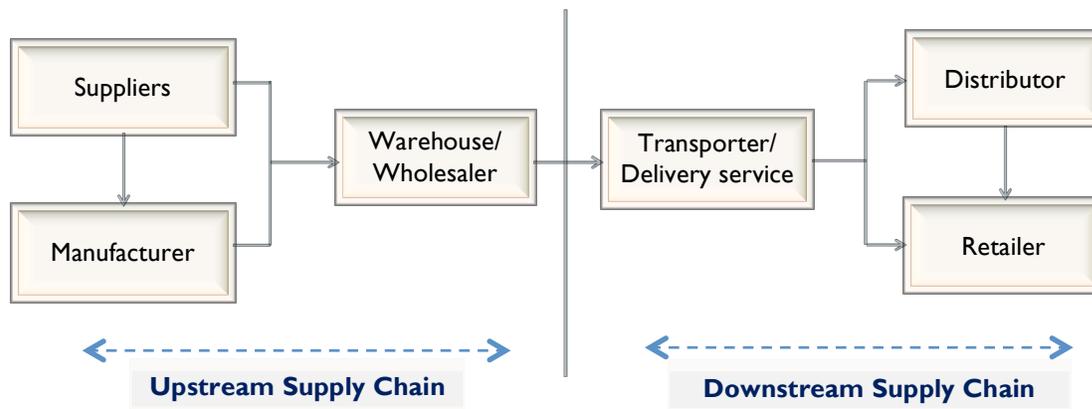


Figure 1: Basic Supply Chain Flow

Although the supply chain integration is significantly acknowledged, an all-in-one smooth integration is rarely achieved in practice. One of the most common problems in SC is the variability, which is termed as the ‘bullwhip effect’. The variability in any service implies additional risks and uncertainty. The larger the uncertainty in a supply chain, the higher is the costs required for safety inventories, time in transit, or cost of deliveries. The following nine issues are seemingly essential for organizations to operate as a coordinated supply chain: (i) growth in global market, (ii) price volatility in markets, (iii) short product life, (iv) demand unpredictability in markets, (v) increasing capacity utilization, (vi) managing outsourcing, (vii) managing inventories, (viii) increasing e-business, and (ix) high level of customer services.

Process evaluation, system renovation and information sharing between SC partners are the keys for the success of each chain. Besides, the collaboration between different companies in the chain, the business process change may considerably cutback the process variability, production and procurement costs, lead times and workloads. This may not seem to reduce product cost or inventory costs instantly. However, these together capitalize the above nine issues, and enable supply-demand harmony, increase order frequency, and consequently contribute to the total system wide costs. The prior realization of the current business process, system adaptation and the set goal for future state are prerequisite to achieve desired business growth and success.

Example: Supply Chain Magnitude

National Semiconductors (NSC) is one of the world's leading manufacturers of semiconductors. NSC is a global production network, which integrated a wide variety of tasks related to capital and technology intensive to labor intensive, the industry is taking the form of to exploit the comparative advantages required for each task. Following is the production and supply chain features of National Semiconductor production system.

Features	National Semiconductor Supply Chain
Product range	More than 10,000 different products
Product type	wireless handsets, display and imaging technologies, information infrastructure and information access devices
Production quantity	4.2 billion chips are manufactured each year
Chips production location	Four in the US, one in Britain and one in Israel
Chips shipping location	Seven assembly locations in Southeast Asia 3,800 customers worldwide
Distribution system	Distribution cost is 1.2% of sales Final product ships to hundreds of facilities all over the world 20,000 different routes 700 logistics employees 42 Freight Forwarders 15 different airlines are involved

Order cycle lead time

- Lead time in the Past Delivery cycle was 9 to 25 days
 - Current lead time 2 days for Asia, 2-4 days for North America, 2-5 days for Europe
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Source: National Semiconductors

