Chapter 1: 21st-Century Supply Chains

Study Questions

1. **Compare the concept of a modern supply chain with more traditional distribution channels. Be specific regarding similarities and differences.**

   Traditional distribution channels typically had an order fulfillment time of 15-30 days. But if something went wrong, this time would increase dramatically. It was a common practice to maintain inventory at every stage of the supply chain like retailers, wholesalers, and manufacturers. The market was characterized by scarcity to the primary goal of traditional model was to ensure availability of products. However, today customers want more options in product offerings. Modern supply chain is geared towards meeting the changing consumer needs. Transportation capacity and operational performance has become more reliable and economical. Logistical systems are capable of capable of delivering products at exact times. So customer orders can be fulfilled faster. With massive development in information technology, the need to maintain inventory has reduced dramatically. The occurrence of failures, characteristic of traditional supply chain, has been replaced by a commitment towards zero-defect of six sigma performance. In essence a high level of performance is achieved at a lower total cost with commitment of fewer financial resources than that in the past.

2. **What specific role does logistics play in supply chain operations?**
   Logistics is the primary conduit of product and service flow within a supply chain arrangement. It is the work required to move and to position inventory throughout a supply chain. It is a combination of order management, inventory, transportation, warehousing, material handling and packaging as integrated throughout a facility network. Logistics is essential for effective supply chain connectivity.

3. **Describe and illustrate an integrated service provider. How does the concept of integrated service provider differ from traditional service providers, such as for-hire transportation and warehousing?**

   Integrated Service Providers (ISP) also known as third-party logistics providers provide a range of logistics services that includes all work necessary to service customers. With the regulatory changes in the transportation the traditional logistics services providers started offering warehousing and shared transportation services. Therefore the ISPs initiated the radical shift from single function to multifunction outsourcing. Their services include order entry to product delivery and in certain situations they also provide wide range of value-added services. For example United Parcel Services (UPS) stocks Nike shoes and warm-ups at its Louisville warehouse and processes orders hourly. All the related communication and financial administration are handled by an UPS call center in San Antonio. Therefore UPS handles the basic logistics and value-added services for Nike.

   In contrast the traditional service providers, such as for-hire transportation and warehousing specialize in specific functions. For instance, the for-hire transportation industry consists of carriers who specialize in moving products between geographic locations. The companies offering warehouse services are traditionally called public warehouses and they provide storage supplemented by specialized services.

4. Compare and contrast anticipatory and response-based business models. Why has responsiveness become popular in supply chain collaborations?

Anticipatory and response-based business models are the two ways used by firms to fulfill customer requirements. However the fundamental difference in the two models is timing

Anticipatory model has been the traditional business practice, which was mainly forecast driven. Since information about purchasing behavior was not readily available, and the channel partners were loosely collaborating, businesses were driven by forecasts. However the forecasts used by the manufacturers, wholesales, distributors, and retailers were often different that led to a lot of excess inventory in the system. All the work was performed in anticipation of future projections, so the likelihood of misgauging customer requirements was very high. In addition each firm in the chain duplicated the anticipatory process.

Response-based model aims to reduce or eliminate forecast reliance by joint planning and rapid exchange of information between supply chain partners. This model has been made possible because managers can now obtain and share accurate sales information faster. Consequently customers can be provided with their desired items faster. This model requires fewer steps and therefore less cost to complete a fulfillment process compared to the anticipatory model. Response-based model is similar to a build to order model however the former has a faster response time and allows higher degree of customization.

Responsiveness propelled by information technology development has become the cornerstone of today's supply chain collaboration. Higher responsiveness can not only increase the level of customer satisfaction but can also reduce the overall cost of doing that.

5. Compare and contrast manufacturing and geographic postponement.

Manufacturing and geographic postponement are strategies and practices that reduces the anticipatory risks of supply chain performance. The factors favoring one pr the other form depends on the volume, value, competitive initiatives desired customer service levels. **Manufacturing or form postponement** aims at manufacturing the products one order at a time with no preparatory work or component procurement until the customer specifications are fully known and customer commitment is received. The goal of this postponement strategy is to maintain products in a neutral or non-committed status as long as possible. In an ideal situation a standard or base product is manufactured in large quantities to obtain economy of scale while deferring the finalization until the customer commitment. In this scenario, economy of scope is introduced by producing the base product to accommodate a wide range of different customers. An example of manufacturing postponement is observed in mixing paint color at retail stores to accommodate the individual customer's request. This strategy not only reduces the risks of logistics malfunction but also increases the use of light manufacturing and final assembly at logistical facilities

On the other hand, **Geographical or logistical postponement** focuses on response acceleration. This strategy aims to build and stock a full-line inventory at one or more strategic locations. Forward deployment of inventory is postponed until the customer order is received. In an ideal situation this postponement strategy eliminates the risk of anticipatory risk of inventory deployment while retaining manufacturing economy scale. An example of geographical postponement is the Sears Store Delivery System. The logistics of the appliances is not initiated till the customer order is received. An appliance purchased on Monday can be installed at customer's home as early as Wednesday. And there is a possibility that the product is not manufactured until that night or early Tuesday.

In a number of supply chains both types of postponement strategies are combined to create a highly responsive strategy.

6. **Define and illustrate cash-to-cash conversion, dwell-time minimization and cash spin. How does supply chain strategy and structure impact each?**

   Cash-to-cash conversion is the time required to convert raw material or inventory purchases into sales revenue. It is directly related to inventory turn. Its benefits are realized by reducing and sharing risk and inventory investment. In traditional business the benefits were enjoyed at the expense of business partners. For example, terms of 2% net 10 meant that a prompt payment discount could be earned if the invoice is paid within ten days from the time of delivery. In a response based system these benefits can be shared by managing the inventory transfer velocity across the supply chain. To facilitate such arrangements supply chain partners often use dead net pricing, which factors discounts and allowances in the selling price. Therefore incentives of timely payment are replaced by performance commitments at a specified net price. Managing supply chain logistics as a continuous synchronized process also serves to reduce dwell time.

   Dwell time is the ratio of the time that an asset sits idle to the time required to satisfy its designated supply chain mission. As an example dwell time would represent the ratio of the time inventory is in store to the time it is moving or contributing to achieve supply chain objectives. Dwell time can be reduced if the supply chain partners are willing to eliminate duplicate work. Therefore each firm could be designated to perform and be accountable for the value-added work in order to reduce the overall dwell.

   Cash spin basically refers to free cash spin. This concept aims to reduce the overall assets committed to the supply chain performance. Therefore capital invested on inventory or warehouse can be made available for redeployment by revising the supply chain arrangement. Free capital can be reinvested in other projects that would have otherwise not been considered.

Challenge questions

1. **What are the operating challenges related to the Toys R Us plan to establish 600 temporary or pop-up seasonal retail outlets? Be specific concerning the supply chain challenges leading into, during, and after the Christmas selling season**

   There are several challenges when Toys R Us establishes temporary retail outlets.

   Staff: Firstly, recruiting temporary staff and training the staff to meet the customer service requirements of Toys R Us may turn into a significant challenge.

   Space and location: As these stores are new, they should be located in the places which are easily approachable by customers like malls. Getting space in these places, which are already crowded, may turn into a significant challenge.

   Inventory: Because of their temporary nature of these outlets, it might be difficult to actually forecast the demand for each of these individual temporary retail outlets, resulting in either stock outs or excess inventories.

Logistics: One of the major challenges is the logistics. As these stores are new, Toys R Us needs to develop a new distribution system temporarily, which is a substantial challenge. At the end of season, moving all the remaining inventory back is also a big challenge.

2. How do the concepts of SaaS and cloud computing differ from the services offered by traditional data processing service centers?

SaaS (Software as a Service) and Cloud computing is a major step in current computer and software industry in turning into utilities. SaaS helps the small companies access the software, which is very costly otherwise. Moreover, the other major advantage is that it these companies based on their usage. Similarly, Cloud computing helps small companies to access a substantial amount of computing power and space at a significantly lower costs and pay as per their usage. The other major advantage with SaaS and Cloud computing will cost a significantly lower initial capital requirements is that when compared traditional date processing, This feature helps not only small companies but also big companies, to try new technical advances with out significant capital investments

3. Discuss how reverse logistics can create value?

In highly competitive markets environments, which we see in many industries, customer service plays a significant role. Reverse logistics plays a significant role in the customer service as well as in improving customer perception. In addition to the benefit it provides to customers, reverse logistics also helps company to objectively measure quality of its products.

4. What is the primary value proposition of Kane Is Able's collaborative distribution service? Be specific concerning how this collaborative distribution service differs from traditional services offered by 3PL's.

Kane Is Able is actually creating shared value. The primary value proposition of Kane Is Able's is financial as well social. Kane Is Able, with its innovative collaboration will result in sharing the infrastructure, resulting with few trucks, great utilization and fewer deliveries etc., and leading to substantial financial savings. In addition to that it will also help all the participating companies to reduce their carbon footprints.

The traditional services offered by 3PL's are only responsible for transferring the goods for the source to the destination, with in the specified time. But Kane Is Able service helps the companies to perform the similar activities at a lower cost and at a much lower carbon foot print.