

Case Problems

CASE PROBLEM 10.1

Somerset Furniture Company's Global Supply Chain

The Somerset Furniture Company was founded in 1957 in Randolph County, Virginia. It traditionally has manufactured large, medium-priced, ornate residential wood furniture such as bedroom cabinets and chests of draws, and dining and living room cabinets, tables, and chairs, at its primary manufacturing facility in Randolph County. It employed a marketing strategy of rapidly introducing new product lines every few years. Over time it developed a reputation for high-quality, affordable furniture for a growing U.S. market of homeowners during the last half of the twentieth century. The company was generally considered to be an innovator in furniture manufacturing processes and in applying QM principles to furniture manufacturing. However, in the mid-1990s, faced with increasing foreign competition, high labor rates, and diminishing profits, the Somerset Company contracted to outsource several of its furniture product lines to manufacturers in China, simultaneously reducing the size of its own domestic manufacturing facility and labor force. This initially proved to be very successful in reducing costs and increasing profits, and by 2000 Somerset had decided to close its entire manufacturing facility in the United States and outsource all of its manufacturing to suppliers in China. The company set up a global supply chain in which it arranges for shipments of wood from the United States and South America to manufacturing plants in China where the furniture products are produced by hand by Chinese laborers. The Chinese manufacturers are very good at copying the Somerset ornate furniture designs by hand without expensive machinery. The average labor rate for furniture manufacturing in the United States is between \$9 and \$20 per hour, whereas the average labor rate for furniture manufacturers in China is \$2 per day. Finished furniture products are shipped by container ship from Hong Kong or Shanghai to Norfolk, Virginia, where the containers are then transported by truck to Somerset warehouses in Randolph County. Somerset supplies retail furniture stores from this location. All hardware is installed on the furniture at the retail stores in order to reduce the possibility of damage during transport.

The order processing and fulfillment system for Somerset includes a great deal of variability, as do all aspects of the company's global supply chain. The company processes orders weekly and biweekly. In the United States it takes between 12 and 25 days for the company to develop a purchase order and release it to its Chinese suppliers. This process includes developing a demand forecast, which may take from one to two weeks; converting the forecast to an order fulfillment schedule; and then developing a purchase order. Once the purchase order is processed overseas by the Chinese manufacturer, which may take 10 to 20 days depending on the number of changes made, the manufacturing process requires approximately 60 days. The foreign logistics process requires finished furniture items to be transported from the manufacturing plants to the Chinese ports, which can take up to several weeks depending on trucking availability and schedules. An additional 5 to 10 days are required to arrange for shipping containers and prepare the paperwork for shipping. However, shipments can then wait from one day to a week for enough available containers. There are often too few containers at the ports because large U.S. importers, like "Big W" discount stores in the United States, reserve all the available containers for their continual stream of overseas shipments. Once enough containers are secured, it requires three to six days to optimally load the containers. The furniture pieces often have odd dimensions that result in partially filled containers. Since 9/11, random security checks of containers can delay shipment another one to three weeks, and smaller companies like Somerset are more likely to be extensively checked than larger shippers like Big W, whom the port authorities don't want upset with delays. The trip overseas to Norfolk requires 28 days. Once in port, one to two weeks are required for a shipment to clear customs and to be loaded onto trucks for transport to Somerset's warehouse in Randolph County, which takes from one to three days. When a shipment arrives, it can take from one day up to a month to unload a trailer, depending on the urgency to fill store orders from the shipment.

Because of supply chain variability, shipments can be off schedule (i.e., delayed) by as much as 40%. The company prides itself on customer service and fears that late deliveries to its customers would harm its credibility and result in cancelled orders and lost customers. At the same time, keeping excess inventories on hand in its warehouses is very costly, and since Somerset redesigns its product lines so frequently a real problem of product obsolescence arises if products remain in inventory very long.

Somerset has also been experiencing quality problems. The Chinese suppliers employ quality auditors who rotate among plants every few weeks to perform quality control tests and monitor the manufacturing process for several days before visiting another plant. However, store and individual customer complaints have forced Somerset to inspect virtually every piece of furniture it receives from overseas before forwarding it to stores. In some instances, customers have complained that tables and chairs creak noisily during use. Somerset subsequently discovered that the creaking was caused by humidity differences between the locations of the Chinese plants and the geographic areas in the United States where their furniture is sold. Replacement parts (like cabinet doors or table legs) are difficult to secure because the Chinese suppliers will only agree to provide replacement parts for the product lines currently in production. However, Somerset provides a one-year warranty on its furniture, which means that they often need parts for a product no longer being produced. Even when replacement parts were available, it took too long to get them from the supplier in order to provide timely customer service.

Although Somerset was initially successful at outsourcing its manufacturing process on a limited basis, it has since discovered, as many companies do, that outsourcing can result in a host of supply chain problems, as indicated. Discuss Somerset's global supply chain and possible remedies for its supply chain problems, including strategic and tactical changes that might improve the company's supply chain performance, reduce system variability, and improve quality and customer service.

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Case Problems

CASE PROBLEM 11.1

Somerset Furniture Company's Global Supply Chain—Continued

For the Somerset Furniture Company described in Case Problem 10.1 in Chapter 10, determine the product lead time by developing a time line from the initiation of a purchase order to product delivery. Discuss the company's possible transportation modes and channels in China and to and within the United States, and the likelihood of potential problems. Identify and discuss how international trade specialist (s), trade logistics companies, and/or Internet exchanges might help Somerset reduce its product lead time and variability.

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