

CASE: PRO FISHING BOATS—A VALUE STREAM MAPPING EXERCISE

A fishing boat manufacturer, Pro Fishing Boats, is having many problems with critical globally sourced parts. Pro Fishing has two manufacturing facilities in the United States. The firm's reliance on efficient global supply chain operations is increasing as the manufacturer is sourcing more and more parts overseas, including critical components. Recent problems with a number of these critical parts have caused line shutdowns. In response, Pro Fishing has mandated a six-week inventory on all globally sourced parts. Management has asked you to evaluate whether this is the right decision.

First, you must understand Pro Fishing's supply chain. Currently, there is very little visibility (knowledge of the current status) of inventory in the supply chain and communication with the supply base is minimal. In fact, the boat manufacturer does not have any visibility past the Tier I suppliers. Adding to the complexity of this problem, each part of the supply chain is handled by different departments within the company.

In order to understand the supply chain, Pro Fishing has asked you to map their supply chain. To do so, the company identified a critical component to follow in the supply chain. After having the opportunity to interview supply chain participants, including suppliers, you have collected the following information.

The component is manufactured overseas in China by the Tier I supplier, Manufacturing Inc. The Manufacturing Inc. production schedule is based on orders sent via fax from the Pro Fishing warehouse. The supplier operates on a 90-60-30 day forecast along with a weekly order. Upon completion of the component, Manufacturing Inc. sends the component via truck to the Shanghai Port where it is loaded onto a ship heading to the United States. Loading at the port takes 1 week and truck transport takes 3 days. Manufacturing Inc. holds a 9-week finished goods buffer

inventory. Manufacturing time for each component is only about 3 days. The ship bound to the United States takes about 14 days to travel overseas. Upon arrival in the United States the component is unloaded at the Los Angeles port. This takes about 5 days and customs inspects in Los Angeles. The goods travel by train to Chicago, which takes about 7 days. Goods are held in Chicago for about half a week. From there, the component is trucked to a Pro Fishing warehouse where the 6-week inventory buffer has been mandated. Shipment to the Pro Fishing warehouse takes 2 days. From the warehouse, the components are trucked to plants in the United States triggered by electronic orders from each of the Pro Fishing plants.

In talking to Manufacturing Inc., Pro Fishing has learned that its component is made up of two main raw materials: one from China and the other from the United States. To avoid the risk of running out of these raw materials, Manufacturing Inc. maintains a 4-week buffer on the China-based raw materials and a 12-week buffer in the U.S. based raw material. These Tier II supplier orders are by formal purchase order only. It is interesting to note that Manufacturing Inc. uses these suppliers to fulfill Pro Fishing's strict supplier qualification requirements.

QUESTIONS

- 1 Create a value stream map (VSM) of this supply chain. What other information is needed?
- 2 Where is there risk for supply chain disruptions or stoppages to the flow of materials?
- 3 Where do opportunities reside in improving supply chain operations and how has VSM helped to reveal these?

SUPER QUIZ

- 1 Anything that does not add value from the customer's perspective.
 - 2 An integrated set of activities designed to achieve production using minimal inventories of raw materials, work-in-process, and finished goods.
 - 3 The Toyota Production System is founded in these two philosophies.
 - 4 The set of value-adding and non-value-adding activities required to design, order, and provide a product from concept to launch, order to delivery, and raw materials to customers.
 - 5 The Japanese philosophy that focuses on continuous improvement.
 - 6 A philosophy in which similar parts are brought together in families for production purposes.
 - 7 Means only producing what is needed when needed and no more.
 - 8 A period of time during which the production schedule cannot be changed.
 - 9 Producing a mix of products that matches demand as closely as possible.
 - 10 A production control system that uses a signaling device to regulate the flow of material.
 - 11 If the lead time for an item is exactly five days, the demand is a constant four units per day, and the shipment container contains two units, how many kanban card sets would be needed?
 - 12 A firm wants to justify smaller lot sizes economically. Management knows that it cannot change the cost to carry one unit in inventory since this is largely based on the value of the item. To justify a smaller lot size what must they do?
1. Waste 2. Lean production 3. Elimination of waste and respect for people 4. Value stream 5. Kaizen
6. Group technology 7. JIT (just-in-time) production 8. Freeze window 9. Uniform plant loading
10. Kanban 11. 10 card sets 12. Reduce setup cost