

Supply chain design

Design



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Full time employees are offered health, dental, and life insurance for themselves and their dependents. They are also offered flexible work schedules, 401 k savings plans, paid vacation, holiday pay, and educational assistance/tuition reimbursement. Process Flow Diagram Below is a process flow diagram for the electric fan supply chain. The diagram roughly depicts the steps employees take when ordering and producing the fans.

Performance Metrics Two metrics used in Ordain Manufacturing are make to stock, which is when a company has a standard product made and ready to deliver quickly.

Another metric used by the company is productivity, which is the ratio of output to input. **Supplier Relationship** The supplier relationship for fans is that motors for the fan arrive pre-assembled. Ordain has the plastic injection molds to create the housing for motor of the fan. The factory that produces the plastic is in China. The motors are also produced in China and have 249 employees. 238 of which are production employees. On-time delivery is a metric used to ensure that orders are delivered in a timely manner. One goal for supplier improvement strategies is to leverage enterprise wide supply chain processes and systems.

Another method that can be used is to simplify the organizational process within the company to help save time and money when possible. **Supplier Improvement Strategy** The effective supplier performance management strategies are those that include the use of effective supplier scorecard process. An effective scorecard should have clear and measurable goals. The scorecard is used to track performance. Employees with desired performance are then rewarded through an incentive plan. The metrics on

the Radian's scorecard are not clear, which make the tracking of the supplier performance a difficult task.

The first step to effectiveness measure the supplier's reference is to revamp the Radian's supplier vendor scorecard. The new scorecard includes a scoring system of 100 possible points. The scorecard is designed to measure three main goals. The goals are on time to request, L T, PUMP, pay terms, and savings. The first goal measures supplier responsiveness performance and is worth 40 points. This goal measures the delivery of on time to request of components, which is also known as TROT. The component's lead-time is the second service related goal. The second goal is the Quality rating system, which is worth (20 points).

The PUMP is the measurement of quality supported by defects parts per million. The productivity rating system is worth (appoints). There are two criteria being evaluated these are the supplier's pay terms and savings. The scorecards should be updated at the end of each month, and sent to the supplier for their review. The supplier classification system can be used to establish the supplier's acceptable performance levels. A score between 100 - 80 corresponds to a Level I supplier. A score between 79 - 69 corresponds to a level II supplier. A score between 68 and below corresponds to a level III supplier.

An accurate sales forecast includes products offered, the price for each product, and the total estimated units of each product sold (Small Business Development Corporation 2013). Aggregate production plans help manage demand of a product by determining the amounts and timing of inputs,

transformation, and outputs. Each plan specifies the production rate, number of workers needed, and the inventory levels required by the customer. The main purposes of aggregate planning are to reduced production times, changes in labor, minimum inventory investment, better use of resources, and better customer service. A master production schedule gets information from forecasts, inventory, costs, inventory levels; production costs, customers order, and production lead times.

The main objectives of a master reduction schedule are to determine the amount of each product to be produced, determine the necessary number of workers needed for the production product, and determine available quantities and balances of each product. The master production schedule is tool used in planning future production. Lean production Principles Lean production can be very effective within daily operations. Incorporating lean and strategic planning helps to meet the demand of customers. Adoption of lean production is said to be the best strategy in response to demand. This requires a company to introduce the right product at the right time in the right place. The company must distinguish how much to produce in order to reduce waste.

The selection of right tools for Lean Production can provide insight regarding the planning and strategy to meet the demands. Inventory Management Inventory management at Ordain is especially tricky because the company produces and ships its fans from the China plant globally. The resources needed to build the fans are purchased locally from vendors with limited ability to supply the needed resources on time. The polymer supplier has a 93% success rate for delivering product when needed to the Ordain plant.
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Although this is a relatively high level of success, the cost to Ordain of being unable to meet the demand 7% of time can be detrimental to the company's success. Based on this, Ordain should pursue distinct its produced goods.

A hybrid of the fixed time period model and the fixed order quantity model is the most advantageous choice for the management of finished goods. Since the fans are primarily ordered during the warmer periods of the year, the time period model dictates that the fans would be shipped in advance of these periods. The summer periods do vary, however, in the northern hemisphere from the outworn hemisphere, keeping the demand for fans in the global market relatively balanced. Events like unseasonably warm weather also influence increased demand for the products. The on-hand, warehouse levels of finished products should be reduced to eliminate some of the extra costs associated with housing the products.

The inventory of raw materials should be increased to protect against the possibility of production shutdowns because of resource outages. The fixed order quantity method of inventory management would be best for maintaining adequate levels of these resources. At any point when the supply inventory reaches 40% of desired bevels, resurvey orders should be automatically placed to ensure minimal levels are maintained. Keeping at least a minimum supply of materials will prevent Ordain from running out of critical resources and being unable to fill orders placed by customers. Proper inventory management helps to support the company's bottom line and to maximize stakeholder profit.

When determining the inventory requirements of the electric fans components parts and finished goods, Ordain chose the vendor managed inventory so that the supplier would take full responsibility to manage inventory sold to the company. This way Ordain can order ND pay as related to shipping as a means to maintain inventory and costs. The billing of all transactions between suppliers is maintained by the financial department and delivered costs are tracked, recorded, and applied to the project costs. By using this system, Ordain is able to track multiple demand/supply characteristics which enable the company to make better decisions. By outsourcing " the emphasis on lean inventory would mean that there would be less room for error in deliveries".

Third-party logistics providers track freight using electronic data interchange technology and a satellite system to tell customers exactly where its rivers are and when deliveries will be made (Jacobs, 2011). This technology would be critical to Ordain as some parts are not made in-house and have to be consumed from other suppliers. By introducing the inventory segment, Ordain will be able to analyze the gross, scheduled, projected, and planned inventory costs associated with producing electric fans components. The single period inventory method will be used with Ordain. Knowing the potential profit or loss associated with stocking would be useful when using the single period method.