

# ASCM Case Competition School Round

*Developed in collaboration with Deloitte Consulting LLP*

## **Juice-Perfect' Manufacturing Strategy & Operations:**

### **Unplanned Downtime Reduction**

#### **Company Background**

Juice-Perfect, a California-based juice manufacturing company, has 6 manufacturing plants around the US that produce various sizes and flavor of juices and smoothies. In recent years, management noticed that Juice-Perfect's market share has been decreasing due to its inability to sustain the level of expectations and market demands. A group of internal analysts conducted a thorough investigation of the root causes of the performance decline and published a report that identified problems in Juice-Perfect's manufacturing and supply chain operations as the critical factors. In response, leadership at the company decided to contract a team to help identify improvement areas in their supply chain and propose a plan to reform the manufacturing processes across all plants. Management has decided to pilot the changes on the packaging lines only at one of the plants. Using internal performance metrics (Exhibit A) Juice-Perfect want to identify the worst performing plant in their network. With an aim to boost the day-to-day operations of this plant, Juice-Perfect is asking us to uncover pain points within the plant's filling/packaging line and recommend improvement strategies that they would be able to implement nationwide.

#### **Juice-Perfect' Manufacturing Supply Chain Operations**

Juice-Perfect employs industry-regulated manufacturing strategies uniformly across all locations. The manufacturing process, employed by Juice-Perfect, is based on a standard beverage manufacturing procedure. The complex manufacturing process can be broken down into two main areas: Upstream Production (which will be called, "production") and Filling/Packaging. The three manufacturing capabilities that govern the performance of the Filling/Packaging operations are: raw material management, asset management and factory efficiency. To ensure the efficient plant operations, the three main interconnected manufacturing capabilities will have to be managed practically and economically.

#### **Raw Material Management**

The manufacturing process consists of several main steps leading to juices being filled in bottles/cartons and packed. The first step is "Raw Material Processing" in which raw materials are procured, sorted and processed, to prepare them for production. The processed materials (raw materials) are then staged at the packaging lines based on order requirements and other raw material availability. Juices produced are then filled into the assigned containers and sealed. Once this is complete, the finished products are packaged in different configurations depending on order requirements.

Since the Filling/Packaging lines operate independently from the production processes, Juice-Perfect has separate teams in charge of operations and packaging material procurement, inventory management, production planning/forecasting, personnel training, assets maintenance and shipments oversight. Due

to the complexity and the fast-pace of the manufacturing process, Juice-Perfect needs to optimize the acquisition of packaging raw materials from the vendor. Juice-Perfect acquires a variety of packaging products (different sizes of bottles/cartons, caps and label wrappers) to provide its current offerings to its customers which include three different sizes of bottles or cartons: large, medium, and small that would hold 2 different products: pure fruit juice and smoothies. Of those variations, there are 10 different flavors of fruit juices and 7 combinations of smoothies. It is also imperative that the communication between functional teams, operating in the upstream processes and the packaging lines, must be seamless to effectively manage, forecast and maintain inventory levels of packaging containers and perishable produced goods.

### **Asset Management**

Production not only relies heavily on sales forecasting, market demand, and a thorough analysis of the historical performance data but also on well-predicted and executed asset maintenance. These aspects, and personnel involved, must work together synchronously. An efficient asset maintenance plan must be created and executed around production plans and take into consideration the level of technical expertise and the time it takes to perform the best-standard practices. Mismanagement in these areas could result in devastating results. For an instance, during one of the peak demand periods, predictive maintenance by the asset maintenance team failed because spare parts were not stocked in inventory. This led to inaccurate equipment repair history, material costs, wasted product and varying degrees of downtime. Lost production time was not the only repercussion of this oversight; significant orders were cancelled. As a preventative measure to mitigate unexpected downtime, Juice-Perfect needs to develop a robust strategy for the asset management program. Production and maintenance operators need to be assigned to each process line effectively, responsible for prioritizing work according to the production plan and manage the transfer of workstream.

As described, Juice-Perfect' manufacturing processes are very complicated. There may be various issues and aberrations that may detract from the performance of the network of manufacturing plants. Juice-Perfect wants the consulting team to identify key operational improvement opportunities based on the data given and a thorough research of industry trends/standards as well as provide strategic recommendations to be nationally implemented and elevate the company's overall performance.

### **DRAFT DATA EXHIBITS**

- A. Yearly Performance Overview
- B. Inventory Delays
- C. Maintenance Schedule
- D. Process Flow Chart
- E. Facility Layout
- F. Maintenance Day Planning and Execution