

Process Improvement in Nestlé Chocolate Production

Executive Summary *MIE 463 - Team 3*

Background & Scope

Nestlé is one of the world's largest global food companies, covering baby food, medical food, bottled water, breakfast cereals, coffee and tea, confectionery, dairy products, ice cream, frozen food, pet foods, and snacks.

The Confectionary group at Nestlé Canada manages a Halloween product titled 70-Count Assorted Bars that contains 70 individually wrapped chocolate pieces consisting of Rolo, Crunch, and McIntosh. The Halloween season drives more than 50% of total annual sales for this product, which means correct production and supply functions are critical to meet demand. Finished chocolates are produced globally (UK, California etc.) and delivered to the Nestlé Canada Distribution Center (DC) and then transported to a 3rd party Co-Packer to be packaged before being returned to the Nestlé DC to await customer orders. There have been issues with the reliability and performance of the Co-Packer, including production inaccuracies and high scrap factors, which are magnified by a rigid supply chain that is inflexible to demand changes from high waste. The PIT team's job is to assess the root problems of the lengthy supply chain and co-packager waste and produce a set of solutions.

Respective targets for the performance measures of accuracy (increase by 5%), and waste reduction (to $\leq 3\%$) have been set to serve as success metrics for the project.

Analysis

The team conducted thorough analysis from a variety of angles before presenting a set of 4 identified issues. Analysis deliverables include a process maps, process boundaries and IGOE, stakeholder concerns and requirements, supply chain flow charts, wait time time study, and packaging process accuracy measurements.

Pulling together all angles of analysis, there were four main issues:

- A long supply chain involving redundant steps in transportation
- Inaccurate packaging machinery that places a surplus of chocolates in each bag

- Faulty chocolate dropper that drops chocolate into unopened bags, leading to significant product waste
- Lack of synchronization and flexibility in supply chain, causing wait times and inventory costs

Recommendations

Appropriate alternative solutions were created for each of the issues through stakeholder sessions and the team's industry research. For each option, the team evaluated 2-3 options before identifying the best ones, as outlined below:

- **Transportation Inefficiency**
Route materials directly from international factory locations (Rolo, Crunch) to Co-Packer, avoiding the unnecessary detour to the Nestlé distribution centre.
- **Excess chocolates dropped**
Replace the weight scale sensor with an infrared scanner to accurately drop chocolates.
- **Faulty chocolate dropper**
Install sanitized catch-all containers to recover wasted product.
- **Synchronization and flexibility in supply chain**
Potential solutions here, such as an ERP system, were deemed too high effort and costly in the short term. It is recommended that Nestlé reconsider this issue during the next major supply chain reorganization.

Next Steps

To ensure a continued momentum into the implementation of these solutions, the process improvement team has designated a steering committee including the Supply Chain Director, Franklin Godoy, as the project sponsor. Detailed communication plans have been created for each individual stakeholder, and the early win has been determined to be the chocolate dropper catch-all container. Further, a gantt chart will be presented at the next steering committee to outline detailed milestones and an implementation plan.