KYDEX LLC 1: Reduce Masterbatch Inventory

Overview
KYDEX has a high inventory of masterbatch (the pigment they use to color their plastic sheets). As of October 2011, there was about 300,000 lbs. of masterbatch (MB) in inventory. This project required an analysis of their plastic forming process, a study of the company's inventory control system, and an assessment of the parameters set for operation.

Objectives
This project had two objectives: 1) Reduce the amount of space MB takes us by 50% and 2) Reduce the amount of MB volume in inventory by 50%. KYDEX is a Japanese-owned company, therefore all of their kaizen projects have a standard goal of 50% improvement.

Approach
- During first site visit, photos of the current inventory setup were taken
- Information on the scheduling process, ERP system, and concatenation method was gathered. Data concerning what was in inventory was requested and received
- 4 concepts were generated: 1) Redesign the MB containers; 2) Find an alternative resin mixer; 3) Find causes for runouts/defects and eliminate them, 4) Redesign inventory storage
- 1 concept was selected: Redesigning the MB containers and racking system
- CAD models of a new container, new racks for the containers, new carts to transport the containers were created
- New containers will be 512 inches³ less than current containers
- Upon brainstorming ways to reduce the amount of MB in inventory, research on product yield was considered
- Learned that all products were produced by product yield instead of their color yield, therefore data of the color yields, product class yield, and product raw material yield were requested and received

Outcomes
Finally, list the outcomes for this project making sure to clearly convey their implications for the sponsoring company:
- A storage racking system created in order to maximize space
- New MB storage containers were created, they are a prism shape with dimensions of 16’x16’x14’
- Two container designs were created with the only difference being the way the MB can flow out of the container
- A carrying system for the new MB storage containers were created so a pallet jack can be used to relocate containers
- Yield data from 2011 was examined and a list of jobs that may benefit from being produced by the color yield rather than the product yield was compiled. This list was done using a 15% difference cutoff. Actual cutoff must be set by KYDEX
- It was found that 3300 jobs may benefit from being produced by the color yield rather than the product yield