

The Issue: A UK-based manufacturer of fresh-baked muffins, cupcakes, and specialty bakery items to coffee shops and convenience stores had a need to reduce the lead time it took to service their customers. Because of the high end nature of these coffee shops and specialty bakeries, the product had to be freshly baked. However, the plant had almost nine hours of work in process at any given time. Since they ran a two shift operation, it was possible to meet the one-day lead time customers required, but it was getting increasingly difficult.

The Solution: A two-week agenda was developed, and the first week was spent teaching lean concepts and creating current state and future state value stream plans for a priority line in the plant. During week two, we conducted a 5S event for the line and a changeover kaizen blitz on the equipment that deposits and swirls the icing onto the cupcake. Because the plant was running small batch sizes, there were many (42) changeovers per week. Each changeover took 45 minutes, so there was over 30 hours of downtime per week on this line, due to the cleaning changeovers. Our videotape of the current state process identified many ways to reduce the changeover time. Some tasks were eliminated, internal tasks were converted to external tasks, some activities were done more quickly by using other cleaning methods, and better tools (that were already on site at the plant) were used to facilitate the changeover. Finally, we reduced the batch size of the icing, so there would be less icing to remove from the hopper once all cupcakes were iced.

The “Set in Order” step of the 5S event also led to the creation of an assembly line to create flow. Prior to our visit, each step was a discreet step. Icing, sprinkling, drizzling, inner packing, and outer packing were all conducted independently, with racks of WIP in between each discreet step. During the kaizen, we created an assembly line, so there was a continuous flow from the creamer until the items were packaged.

The Results: The assembly line eliminated over four hours of WIP (44%). This enabled the plant to become more responsive in reacting to customer orders with one day lead time, and enhanced product freshness, a must for the marketplace.

Although nobody initially believed a 50% reduction in changeover time was possible, they were believers by the end of the event. The 45 minute changeover was performed in 16 minutes. We eliminated 64% of the downtime with no compromise of product quality or associate safety.

Because this equipment was cleaned 42 times per week, the 29-minute savings represented an incremental 20 hours of uptime *per week*. Said another way, this enabled them to produce an incremental 2200 cases each week, or 114,000 cases per year, with no additional expenditures.

This increase in output is especially important because this is a highly profitable, capacity-constrained line, and it was accomplished with no capital.



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