Company Name:
Toyota Texas Manufacturing

The Problem:
Reduce non-value added waste in the tape application process.

The Solution:
Create a synchronization cart to eliminate or reduce “muda”.

Team Members:
Paula Cruz
Juan Silva
DeCari Beard
Travis Starr

Ingram School of Engineering
Texas State University
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Background
Toyota Texas Manufacturing is one of two Toyota plants in the world that manufacture Tundra and Tacoma trucks; producing on average 900 total trucks per day. Our project is within the paint department, focused specifically on a tape application process in paint finishing. Toyota believes there is always a better way to perform a process and reduce non-value-added waste. A synchronization system was proposed in order to minimize inefficiencies during this portion of the painting process.

The Problem
During the final stage of the painting process, an adhesive black tape is added between the window frame in order to give the impression of a bigger single window. However, this process has been producing excessive amounts of waste, in areas such as movement, overstocked materials and energy consumption.

The Solution
Our group created a synchronization system using Lean Manufacturing process methodologies, accompanied by ergonomic principles and design techniques to reduce the numerous types of waste created during this process. We were able to achieve a 88% reduction in energy consumption minimizing the total heating plates form 16 to 4. A 60% decrease on process inventory was achieved by having only 8 packages in the process instead of 20. Lastly, were able to reduce wasted motion resulting in a 8 second decrease in cycle time (about 14%).