Simulation Study of a Power and Free Conveyor System for a Leading Vehicle Manufacturer - Case Study

Summary

A leading global automotive company wanted to check the feasibility of their power and free conveyor system after introducing a lineup of new vehicles and find out ways to improve their system.

Aims/Objectives

- To validate throughput from the system
- Identify the Bottleneck in the system
- Provide recommendations to alleviate the same

Client's Challenge

- Check feasibility of the system to meet target production with new model mixes
- Identify and alleviate any bottlenecks in the conveyor system
- Study the impact of system output on the percentage of vehicles that are loaded on the conveyor system

PMI's Approach.

- We modeled the conveyor system in 3D using Tecnomatix Plant Simulation
- Operating rules for loading and carrier routing in the system were defined and improved through simulation
- System throughput, time-in-state graphs, number of vehicles in the system were tracked

Finding & Recommendations

We found that the target was not achieved even when only 20% of the vehicles were loaded on the system

Lack of hangers at one of the loading stations lead to filling up of buffer and causing blockage at a production shop

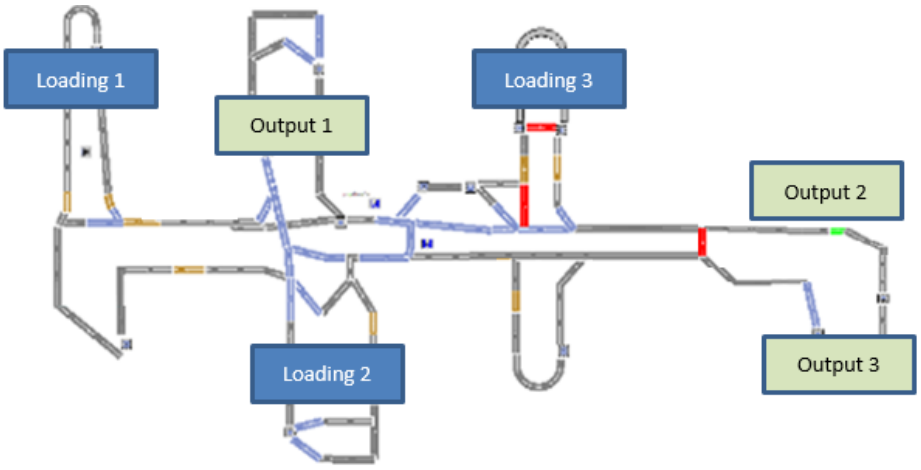
- *Relocating a portion of another underutilized buffer helped achieve throughput when 40 to 80 % of the vehicles were loaded onto the conveyor*

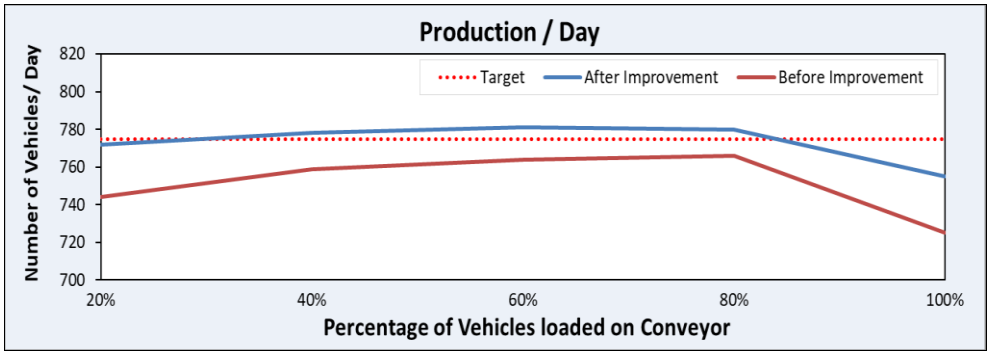
A paint shop system where vehicles are unloaded from the conveyor system was running at its full capacity

- *Installation or expanding the existing paint shop would allow the conveyor system to handle 100% of the vehicle being loaded*

Supporting Videos and Images -

Media3.mp4





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