

Supply Chain Analytics: Third Shift Implementation Impact

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Abstract: A Midwest supermarket chain has two warehouses to service their retail stores. The grocery warehouse of interest (Warehouse A) used \$1 million of overtime labor in 2016. Due to throughput constraints in Warehouse A, retail stores that are geographically closer to Warehouse A are being supplied by the second warehouse. This results in excess transportation expenses. This study conducts an in-depth analysis of the impact of adding a third shift to Warehouse A to create optimal workload distributions. Data gathering and observation efforts include work sampling studies, dock utilization studies, and benchmarking of congestion, pick rates, and order processing times. Overall, the deliverables of the Third Shift Implementation Impact project will allow the Midwest supermarket chain to reduce overtime expenses, understand relevant variable impacts, and improve the workload balance at Warehouse A across all shifts. The theoretical cost savings associated with this project is estimated to be \$650,000 each year.

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