

Improving Automotive Efficiency through Lean Management Tools: A Case Study

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Abstract : Managing and improving efficiency in the current highly competitive global automotive industry demands that companies adopt leaner and more flexible systems. During the past 20 years the domestic automotive industry in North America has been focusing on establishing new management strategies in order to meet market demands. The lean management process also known as Toyota Manufacturing Process (TPS) or lean manufacturing encompasses tools and techniques that were established in order to provide the best quality product with the fastest lead time at the lowest cost. The following paper presents a study that focused on improving labor efficiency at one of the Big Three (Ford, GM, Chrysler LLC) domestic automotive facility in North America. The objective of the study was to utilize several lean management tools in order to optimize the efficiency and utilization levels at the "Pre-Marriage" chassis area in a truck manufacturing and assembly facility. Utilizing three different lean tools (i.e. Standardization of work, 7 Wastes, and 5S) this research was able to improve efficiency by 51%, utilization by 246%, and reduce operations by 14%. The return on investment calculated based on the improvements made was 284%.

Keywords : lean manufacturing, standardized work, operation efficiency, utilization

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