

# **Productivity Improvement by the Implementation of lean manufacturing practice (takt time) in an automobile assembling plant**

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## **Abstract**

The demand of automobiles is continuously increasing in the automobile sector of Pakistan. Keeping in view the increasing demand of the automobiles, this research work is done in a well-known automobile assembling plant. The aim of the research is to improve the productivity of an automobile assembling plant with special focus on quality and quantity. The paint shop of the plant is considered as the major bottleneck in low productivity. Therefore, it is selected as the case to improve productivity and fulfill the market demand. Takt time of the identified process is recorded on the standard sheets. The major causes of low productivity are identified by cause and effect analysis. The alternative measures to improve the productivity are identified and compared. The alternatives are proposed to the company. The annual data is collected from Pre-treatment Electrode Deposition Line (PT-ED Line). Takt Time in one of the process of PT-ED Line of paint shop is reduced from 2.04 mins to 1.78 mins. This is done with the help of electrodes replacement and increasing of amperes of the electrodes in the Cathode Electrode Deposition (CED) process. This reduction in takt time increased the daily production of paint shop from 245 units to 280 units. This improvement in production somehow will fulfill the market demand of the selected automobile plant. The calculations are made for each type of shift operations at current, future and ideal conditions.

**Key Words:** Lean, Takt, Productivity, Automobiles, Assembling plant, paint shop, lean manufacturing

## **Biographies**

**Muhammad Ali Khan Nagar** is working currently as Assistant Professor in as Department of Industrial Engineering and Management from Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan. He has almost 16 years teaching experience the undergraduate level and few years at post graduate level. He has also supervised more than a dozen students at undergraduate level and a few at post graduate level. He is also PhD scholar in the same department. He has completed the Master of Engineering in Industrial Engineering and Management from the Department of Industrial Engineering and Management from Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan. He has also completed his PGD in Industrial Engineering and Management from the Department of Industrial Engineering and Management from Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan. He has also completed his MBA in Industrial Management

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