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Productivity Improvement of Exhaust Gas Recirculating (EGR) Elbow by Using Value Stream Mapping of Lean Manufacturing -A Technical Review

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Abstract

The manufacturing industry is adopting lean manufacturing practices. Many manufacturers struggle to produce a product, produce the right products or services in the right place and timely delivery meeting. To survive in today's competitive world, manufacturers need to come up with innovative ways reducing production lead times to improve productivity and performance goal. Today, it is aimed at improving production performance by reducing production lead time and dissipation of existing production the most important goals for almost every manufacturing company. Each industry's shop floor contains multiple stations that work together to complete specific activities according to a timetable in order to fulfil the production rate. Machine breakdowns, inventory shortages, and tool shortages all cause delays in meeting demand. Excess inventory at workstations accumulates as a result of excessive mobility, faulty machine shop design, and inaccurate location of operation, to name a few examples, all of which waste time at workstations and impede production rates. The only lean tool recommended in the literature to eliminate Muda, or bottlenecks, across the manufacturing line is value stream mapping. Before implementing techniques, value stream mapping uses a current state map to record the current status of the production line. The main purpose of this study is to design | Effective Value Stream Mapping (VSM) to improve productivity in automobile part manufacturer company in to delete non-value functions and establish a future state for the action plan's process improvement to sum up, the proposed Future Value Stream Map (FVSM) aids in the effective identification of inefficient activities and industrial processes, according to this research. By lowering the manufacturing lead time, VSM serves as an input for improvement.

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Productivity Improvement of Exhaust Gas Recirculating (EGR) Elbow by Using Value Stream Mapping of Lean Manufacturing –A Technical Review

Devendra Dabhi^{1,*}, Keyur Parmar²

Abstract

The manufacturing industry is adopting lean manufacturing practices. Many manufacturers struggle to produce a product, produce the right products or services in the right place and timely delivery meeting. To survive in today's competitive world, manufacturers need to come up with innovative ways reducing production lead times to improve productivity and performance goal. Today, it is aimed at improving production performance by reducing production lead time and dissipation of existing production the most important goals for almost every manufacturing company. Each industry's shop floor contains multiple stations that work together to complete specific activities according to a timetable in order to fulfil the production rate. Machine breakdowns, inventory shortages, and tool shortages all cause delays in meeting demand. Excess inventory at workstations accumulates as a result of excessive mobility, faulty machine shop design, and inaccurate location of operation, to name a few examples, all of which waste time at workstations and impede production rates. The only lean tool recommended in the literature to eliminate Muda, or bottlenecks, across the manufacturing line is value stream mapping. Before implementing techniques, value stream mapping uses a current state map to record the current status of the production line. The main purpose of this study is to design I Effective Value Stream Mapping (VSM) to improve productivity in automobile part manufacturer company in to delete non-value functions and establish a future state for the action plan's process improvement to sum up, the proposed Future Value Stream Map (FVSM) aids in the effective identification of inefficient activities and industrial processes, according to this research. By lowering the manufacturing lead time, VSM serves as an input for improvement.

Keywords: Lean manufacturing, Value Stream Mapping (VSM), takt time, time study, waste

INTRODUCTION TO LEAN MANUFACTURING

Japanese car company, Toyota, has launched Lean Production (LM) or Toyota Production System (TPS), and has now been approved. many countries in every name because of its proven benefits of quality improvement, cost reduction, flexibility and speed. answer. Reduced production can best be described as waste disposal in a production-related production system effort, time inventory at various stages of production. Depending on production is an effective and popular tool in many manufacturing industries and resources to deal with non-essential tasks as well waste. Any kind of waste, in the literal sense that work does not add any value to the final product, it must be reduced or possibly, eliminated by low production costs. As the saying goes the saved cent is earned by the cent and is very important in production. The main theme of the

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Application of lean manufacturing in automotive manufacturing unit

October 2019 · International Journal of Lean Six Sigma

● Harwinder Singh · ● Jagmeet Singh

Purpose This paper aims to apply lean manufacturing using value stream mapping (VSM) in the manufacturing organization (automotive suspension and fastening components section). To validate the VSM approach, simulation has been done. Design/methodology/approach VSM approach has been used to implement lean stages in the U-bolt section. Current state map was prepared and future state map has been ... [\[Show full abstract\]](#)

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Evaluating lean thinking using value stream mapping in manufacturing industry - A case study

January 2017 · International Journal of Productivity and Quality Management

● Harwinder Singh · ● Jagdeep Singh · ● Deepinder Singh · Kultaran Singh

Value stream mapping is an important lean manufacturing tool used to improve business in a competitive market by eliminating non-value adding activities or wastes from the value stream of a product and improving in providing in process operations. This paper aims to address the application of lean manufacturing using value stream mapping (VSM) concepts in a casting organisation. Using value ... [\[Show full abstract\]](#)

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Application of lean manufacturing using value stream mapping in an auto-parts manufacturing unit

March 2013 · Journal of Advances in Management Research

● Harwinder Singh · Amandeep Singh

Purpose This paper aims to address the application of lean manufacturing using value stream mapping (VSM) concepts in an auto-parts manufacturing organization. Using value stream concepts, both current and future states maps of the organization's shop floor scenarios have been discussed to identify sources of waste between the existing state and the proposed state of the selected organization for ... [\[Show full abstract\]](#)

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Assessing lean thinking using value stream mapping in a manufacturing unit – A case study

January 2019 · International Journal of Business Excellence

● Jagdeep Singh · ● Harwinder Singh · Surjit Kumar Gandhi

This paper aims to assess the lean manufacturing thinking using value stream mapping (VSM) concepts in an electronics manufacturing organisation. Using value stream concepts, both current and future states maps of the organisation's shop floor scenarios have been discussed. The research begins with collection of the process information through which, current value-stream map is generated, which ... [\[Show full abstract\]](#)

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