Review of Implementation of Lean Manufacturing in Manufacturing System

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Abstract— Implementation of lean manufacturing very helpful to all manufacturing arrangement. It reduces all kind of waste and non-value added activities. Today many companies choose lean concept because today market is very tough and to survive its product to this market lean is beneficial. Lean is very wide concept. It is applicable to all type of different organization like automotive, piece of clothing, electronics, ceramic objects etc. There are many tools and techniques available for lean. Companies are selected tools as per its requirement. There are many large, small and medium sized companies obey the lean manufacturing concept. Lean mainly includes involvement of management and involvement of employees. Some companies develop its own lean strategy which helpful to reduce wastes and improve quality. Here I motivated to apply lean concept in manufacturing system i.e. automobile industry. Today industries are facing various problems related to quality and customer demand. The present study has been undertaken for analyzing different types of wastes in a Diesel Locomotive Plant’s Light Machine Shop (camshaft section) with an aim to design strategies for developing and implementing a Lean Manufacturing Program in such machine shops. The study has been carried out in a phased manner. For the purpose of modeling for developing a strategy for implementation, the controls identified have been grouped into broad generalized category Expert opinion has been utilized to identify factors and parameters affecting development of a generalized approach for implementation. Generalized of various measures for developing an approach to be used by industry in future has been suggested using expert belief. It has further been suggested that the implementation of the development approach be carried out in three phases. With the help of lean we increase production rate and improve quality.

Key words: Lean Manufacturing, Camshaft Section, Automobile Industry

I. INTRODUCTION

Now in these days Lean Manufacturing is very helpful to all manufacturing system. Lean it means less everything which not good for company. Lean reduces human effort, space requirement, investment etc. Lean concept is developed by Toyota Company and it known as Toyota production system. Lean it means manufacturing without waste. Lean consist various tools and techniques. Lean is adjustable approach to customer demand. It covers quality circle, just-in-time, supply chain management, kaizen, kanban etc. Lean reduces all kind of waste and reduces non-value added activities. Aim of the every industry that reduces waste, improve quality, reduce cost and shorten lead time. Lean also minimize inventory level; improve labour productivity, utilization of equipment. By using lean concept industry satisfy its customer requirement. Many Companies choose lean concept because today competition is very tough and survive in this market lean concept is very helpful. Some companies implement lean practice by using its own way. Companies develop its own lean strategy which helpful to reduce wastes and improve quality of product. Hence company very flexible to its customer requirement.

Lean concept is not use for particular industry. Lean is wide concept use in various industry like electronics, automotive, ceramic, garment etc. Research will study some standard steps for lean implementation which are helpful to various organization. By using this lean concept we achieve quality system. Produce finished goods as per customer requirement.

The research aim will be proficient through following objectives.

- Understanding and Map the process of industry.
- Identify different factors which are associated with process and its effects on performance of process.
- Analyze and valuing result.

II. LITERATURE REVIEW

John S. W. Fargher, Jr., Ph.D., Director [1] the presentation and paper represent several actual case studies of firms that the Missouri Enterprise has been involved as the facilitator and consultant. These case studies are used to illustrate the steps in implementation of lean manufacturing and remanufacturing, providing actual, very positive results.

Nor Azian Abdul Rahman, Sariwati Mohd Sharif, Mashitah Mohamed Esa [2] The Kanban system is one of the manufacturing strategies for lean production with minimal inventory and reduced costs. However, the Kanban system is not being implemented widely by manufacturing companies in Malaysia. Thus, the objectives of this case study are 1) to determine how does the Kanban system works effectively in multinational organization; and 2) to identify factors hindering Malaysian small and medium enterprises (SME) from implementing Kanban. Findings of the study suggest that top management commitment, vendor participation, inventory management and quality improvement are important for Kanban deployment and towards lean manufacturing.

U. Dombrowski, T. Mielke [3] In this paper common approach can be explained by using the 4P Model. It consists of 4 levels that are all necessary for a sustainable lean implementation. The levels are: philosophy (long-term thinking), process (eliminate waste), people and partner (respect, challenge and grow them) and problem solving (CIP and learning). After reformulating the indicators into requirements for leaders, they were assigned to the five principles improvement culture, self-development,
The goal of this paper’s objective is to be applied in order to an manufacturing system are the lack of innovation, active industry.

This paper mainly focuses on automotive - focus at the Trim and Finale Department. Then, the implementation of basic lean tools such as 5S, standardized work, line balancing, visual controls, point of use storage, and quality at the source, the small manufacturer was able to rapidly increase throughput and reduce quality defects by 80%. Based on observations derived from this case study, hypothesis statements are generated regarding obstacles and solutions to lean implementation in small and medium manufacturing enterprises.

The goal of this paper sheds light on the concept of lean production. Analyze tools and concepts that have to be applied in order to become a lean operating organization and evaluate how and in which functions these tools can be used and Investigate how important the lean philosophy and management behavior are as well as related implementation issues.

The purpose of this project is to analyze the implementing of the lean methodology to low volume car production. There are many problems occur at the production line such as breakdown of the machine. The project has started with identifying problem at the AMM plant focus at the Trim and Finale Department. Then, the data has been analyzed by using Total Quality Management Tools such as fishbone diagram and Pareto chart. By applying the lean tools, the problem can be minimized and gain the high profit at the same time. The lean tools only can be suggested without implementation because of the rules and policy of the company.

This paper describes a preliminary study in developing a conceptual model to measure leaness in manufacturing industry. In this research, a conceptual model for leanness measurement in the manufacturing industry has been developed and designed in two main levels, namely the dimensions and the factors.

Conrad Volkman, Senior Program Manager, Manufacturing [9] this document gives an overview of how to use the kanban framework. It introduces the concepts of kanbans as signals and kanban rules as supply policies. This document provides a small set of ideas and application examples that illustrate how to model pull scenarios. This document also attempts to raise the level of interest and curiosity to try additional scenarios.

Noor Azlina Mohd.Salleh, Salmiah Kasolang, Ahmed Jaffar [10] TQM and LM can bring more benefits to a company but there is still lack of case study on company that has implemented both initiatives. Preliminary status of Integrating TQM and LM has been established from survey conducted on the highly practices LM in Malaysian automotive companies in 2011. It was found out that the company has been practicing TQM and LM separately. Other type of software can also be used to measure the level of TQM and LM implementation and can determine whether the model is adaptable for other industry and for all type of manufacturing process.

Suprassis Jaryapathirun, Andrew P. Ciganek, Thaloengsak Chotiwanakewmee, Chayanun Kerdpitak[11] This paper presents a case study of the use of an e-Kanban system to minimize operational and logistics issues for a parts supplier within the automotive industry. Measures of operations and logistics performance are examined both before and after the implementation of the e-Kanban system through a series of observations, in-depth interviews, and documentation reviews.

III. CONCLUSION

By these review paper we conclude following points

- Lean Manufacturing concept is very helpful to all type of organization like large scale, medium scale and small scale.
- The company follows some strategy which are very helpful to increase production rate and improve quality.
- The using lean concept reduces waste of all kinds and increase productivity.

The objective for my PG dissertation is to implement Lean manufacturing to cement industry and improve the productivity of the same.

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(IJSRD/Vol. 2/Issue 10/2014/047)

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