How to reduce waste on Industries by using Lean Six Sigma Tool

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Abstract— A number of manufacturing companies have several issues and complexities that causes distortions and wasteful in activities. Such issues cannot be fully solved and it is a fact that a number of companies have issues with the waste and delivery. Tools of lean manufacturing can increase the speed of process and hence removal of waste. Issues related to quality and other precision of process can be solved through employing a suitable technique. Lean six-sigma can be used to address the issues of waste as well as variations. The characteristics of Lean and Six Sigma tools are incorporated in lean six-sigma. Lean six-sigma is the method designed to solve the issues of waste and highly varying production. Wastages of resources increases the production cost and reduces the profitability of organizations. Organizations needs to adopted processes and tools to remove errors from the system and mechanize the production process.

Index Terms— Minimum 7 keywords are mandatory, Keywords should closely reflect the topic and should optimally characterize the paper. Use about four key words or phrases in alphabetical order, separated by commas.

1 INTRODUCTION

The effectiveness of two tools, Six Sigma and Lean Production has been combined into a Lean Six Sigma. Lean Six Sigma is used for maintaining proper productivity, output and reduction of waste. The tool or techniques aims at the reduction or removal of inefficient production process. This removes the unnecessary cost associated with production process. Management is always concerned with the adopted of tools and technologies to remove errors and inefficiencies from the business activities. When cost of production is reduced, profitability of industries increase.

2 Lean Six Sigma Benefits:

When issues and problems are resolved from the entire system, it is called process improvement. Outcomes of customers are focused to improve the entire process. A process map is used with different expected outcomes, activities and interactions to maintain a focus. The important aspects can be focused by the process. Several successful companies including six-sigma, Motorola etc. use powerful tools of six-sigma. Quality is increased by 10 times because of six-sigma technique implied. For continuous improvement in the organizational structure, six sigma techniques are used. These include Champions, Green Belts and Black Belts. Based on customer and financial impact, project can be given priority. Through continuous improvement, a culture can be transformed using six-sigma.

3 Methods:

Waste can be effectively reduced by using Lean Six Sigma during the process of manufacturing. The integration of Six Sigma and Lean Manufacturing is called Lean Six Sigma. The integration has done of both quality improvement techniques. The process increases quality and reduces waste by cost reduction mechanism. Tools that eliminate waste are added to Lean process. During the production system, 7 types of waste can occur that include conveyance, delay, over processing, correction etc. In the day-to-day process, delays occur in the manufacturing process. One of the biggest reasons for ineffectiveness is

delays, poor performance, inefficiencies etc. But in process terms, delays are one of the biggest causes of ineffectiveness, inefficiencies, and poor performance. Delay can be reduced by using different process methodologies. The productivity of the companies is improved and systems are stabilized.

The cost of the process is minimized by using Lean six-sigma. Waste is eliminated by cost reduction from different sectors by using the technique of lean six-sigma. Inefficiencies are identified and removed by the philosophy of lean. Defects are removed from the systems and production is expanded. Various types of inefficiencies in the system are created because of unutilized talent, transportation, delay or wait in production, over-production etc. The process removes the complexities and errors from the system. (P.Arunagiri & Babu, 2013)

4 Example:

Lean six-sigma was used by the Mid-States Aluminum Corp. in Fond du Lac, for working on improvement projects. A Value Stream Map is created for the quoting process and lean office was used to channelize the process and reduce the time by half. The organization mapped its process of extrusion press and reduced the press downtime by using 5 Whys and Pareto Charting. Setup times were reduced by the use of Setup Reduction. (Larrabee & Voss, 2012)

Different issues can be addressed by using a combination of Lean as well as Six-sigma tools. Almost $50,000 was saved in cost and there was an increase in sales by $75,000. 90% time was reduced by the use of lean six-sigma. A powerful combination of tools is offered by Lean Six Sigma. However, some of the manufacturers are not utilizing lean six-sigma up to the optimal level. Many statistics are possessed by classic Six Sigma according to Cox. Effective things can be done by using a subset of analytical tools of lean six-sigma. (Powell, 1995)With minimum statistics, manufacturers can go through the entire process. This method can be highly effective in reducing errors and mistakes. (Lean Six Sigma Cuts Waste, Tackles Tough Manufacturing Problems, 2014)

6 Conclusion and Comment:

A major role is played by lean six sigma plays in reducing additional activities that add no value to the output. Additional activities adding zero to the output create inefficiencies. Through several steps of improvements, delays in the production can be removed. Removal of inefficiencies requires the system to eliminate unnecessary steps from the production process. Many companies are using techniques that provide short-term solutions. (Larrabee & Voss, 2012)

The issues need fixing for long term solutions. However, solutions do not necessarily add to significant gains. Combined solutions are required by the organizations. Organizations are being prevented from influential changes due to problem solving techniques. Lean six-sigma can be used for solving problems and making improvements.

It can be used as a tool to reduce wasteful activities in the production process. Production process involves different steps and activities that can be beneficial or not. If these are not ben-

eficial, these are just adding up to the cost. Increase of cost and inefficient production steps can create delay in the production output. Lean six-sigma can be used to regulate the production process and business activities. Businesses experience growth in revenue and performance because of six-sigma approach.

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