

ABSTRACT

This study is a case study of Plastic Compound Manufacturer. The company was facing with a high volume of defective products in production over the year 2017 and caused interruption into production efficiency and effectiveness and also raised the high unnecessary costs to the company.

The DMAIC concept consists of define, measure, analyze, improve and control. The DMAIC was applied to identify the root causes of the defective products based on the data and facts which lead to improvement and to sustain defective rate reduction. This study started from data collection and data analyses. The historical data of 2017 were reviewed to analyze the possible root causes. The result showed that the top 81.95% of the defective products was in Contamination category which cost to BBB Company 5,404,455 baht. The major causes of this problem were from human errors and low quality of materials. To solve the problem, the skills and the awareness of the employees were reminded through training courses. In the same period, materials were inspected carefully from suppliers and internally inspection by using new inspection check sheets. Supplier evaluation and negotiation were implemented to see the result. Furthermore, the filter was changed to an appropriate size matching with the material's particle size to evaluate the best performance.

The result of the implementation was successful. The average of defect rates was gradually reduced since the implementation started. The DMAIC model can reduce defective products of the company. Therefore, the DMAIC is an effective tool to improve the process.