REDUCING DIE CUT DEFECT USING DMAIC METHOD IN THE PACKAGING COMPANY

UNDERGRADUATED FINAL PROJECT

Submitted as one of the requirements to obtain Sarjana Teknik (S.T.)

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FACULTY OF ENGINEERING

INDUSTRIAL ENGINEERING STUDY PROGRAM

CIKARANG

MAY, 2023

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ABSTRACT

PT. XYZ is a packaging company engaged in the manufacture of toy and food packaging. It is understood that the company has a problem that need to be improve. Because of this, defect packaging usually appears in every manufacturing, quality is one of the most critical things in manufacturing. An increase in defect product can cause losses for the company, therefore it is crucial to be handling that can be increase productivity. In order to avoid the alteration of defective product or even the accumulation of defect product. One of the techniques that can be used to reduce is the Six Sigma Method. In this research, the Six Sigma technique is used with DMAIC (Define, Measure, Analyze, Improve, and Control) method in studying the problems that occured. Based on the study conducted on three types of manufacturing defects, namely Die Cut method, Pond Handle method, and Joint Glue Method, each rejects in the Die Cut process has 48% or 5091 die cut defects, in the Pond Handle process is 29% or 3043 PH defects, and in the Joint Glue process is 23% or 2367 defects, with a total defects is 10501 pcs packaging defects. Also, found the abnormal machine and method factors in Die Cut, there is an abnormality in the machine caused by damaged spark plug that have not been replaced, and the method at the time of changeover carried out by Manpower is still not entirely using a good method. The result of this research, Total reject data has been improved by total percent is 67% more productive, 10501 total packaging defects reduced to 3421 packaging defects.

Keyword: *Product Defect, DMAIC Method, Packaging Industry, Six Sigma Method.*

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LIST OF TERMINOLOGY

DPMO	:	DPMO stands for (*Defects Per Million Opportunities*), DPMO is a Six Sigma metric used in quality management that is defined as the number of defects per million opportunities. It is a ratio of the number of defects in a sample to the number of defect opportunities multiplied by 1 million.
Continuous Improvement	:	Continuous improvement is a process of making small, incremental changes to a product, service, or process with the aim of making it better over time.
DMAIC Method	:	"Define, Measure, Analyze, Improve, Control " is used in business, to control and continuously improve processes and products continuously.
Six Sigma	:	Is a set of techniques and tools for process improvement. A disciplined approach and methodology for process improvement, aiming to reduce defects and variation in processes to achieve near-perfect results.
Control Map P	:	A Control Map P, as known as proportion chart, is a statistical control chart used to monitor the proportion of nonconforming items or events in a process over time.
Pareto Diagram	:	A Pareto Diagram, also known as a Pareto Chart, is a visual tool used to prioritize and display the relative importance of different categories or causes based on their frequency or impact.