

Quality Control And Improvement For Process Printing of the Product Package Using Integration Of FMEA-TRIZ

Sherva Rafsanjani

Industrial Engineering Study Program
Sepuluh Nopember Institute of Technology
Surabaya, Indonesia
shervarafsanjani@gmail.com

Moses L.Singgih

Industrial Engineering Study Program
Sepuluh Nopember Institute of Technology
Surabaya, Indonesia
moseslsinggih@ie.its.ac.id

Abstract

Product packaging has played an important role in a storage container product. One of the barriers in product quality packaging is common defects in the production process of the package. Defects of packaging will cause complaint from the customer. A way to reduce defects that occur is the quality control at the level of the process. This research uses the Six Sigma process improvement as a reference using the stages of DMAIC. The step of definition object, include define manufacturing operation process chart, identification of defects, critical process, critical to quality as well as determine priority defects using the Pareto chart. Phase measure using the Capability process and DPMO to know the performance of the process. The step of analyzing use FMEA to get priority causes failure of the products in the process, then improve used by integration the method of TRIZ to get suitable recommendations. Then apply the control mechanism. The results showed the process of printing is a critical process with the value of the DPMO 18372 Sigma Level, level sigma for the plant is 1.58 sigma and the capability of the process is 1, 19. As for the results of FMEA, for critical defects miss print caused by the component of the cylinder, imprecision of gear and bearing, for color defects caused by the composition of ink and line defects caused by great mixed dried ink. Based on the analysis of contradiction matrix and 40 inventive principles, recommendations to repair defects miss print that is cleaning component of the gearbox using a vacuum cleaner, help tool vibration tester and the addition of the lock nut, for Defects the colors apply training to measure the viscosity and the development strategy of the supplier. Line defects adding CCTV in station printing and periodic cleaning of the ink pump.

Keywords

Operation Process Chart, Pareto Chart, DPMO, FMEA, TRIZ