

Jantiwa Manowichian 2013: Quality Cost Reduction in Digital Camera Assembly Process. Master of Engineering (Engineering Management), Major Field: Engineering Management, Department of Industrial Engineering. Thesis Advisor: Mr. Nantachai Kantanantha, Ph.D. 100 pages.

The objective of this thesis is to reduce the cost of quality by defect reduction in the digital camera assembly process. The cost of quality is composed of failure cost, appraisal cost, and prevention cost. The target is to reduce the percentage of defects to be less than two percent which is the goal of the case study company.

The research starts with the collecting of the cost of quality data and classifies the defect types by Pareto diagram. Based on the Pareto Priority Index, three main defect types are selected to study which are broken/incomplete Flexible Printed Circuit, scratch, and incomplete soldering. These defect types are analyzed using fishbone diagram to determine the main causes. The Failure Mode and Effects Analysis technique is employed to order the importance of the main causes according to the risk priority numbers. The causes are then selected to determine the guideline to reduce the defects. In addition, the Design of Experiments is performed to determine the levels of the significant factors. Finally, the results of the study are implemented, monitored, and controlled in order to achieve the desired quality level.

The results of the research show that the cost of quality is reduced from 1,270,000 baht per month to 300,000 baht per month and the percentage of defects is reduced from 4.21 percent to 0.85 percent within seven months. In addition, the risk priority numbers are decreased by 80 to 90 percent.

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