ABSTRACT

This research aims to implement a Radio Frequency Identification Device (RFID) system to reduce production waste in a lens manufacturing company. There are three main objectives of this research which are: (1) to understand the detailed components and the implementation process of an RFID system, (2) to develop a plan to implement an RFID system for a lens manufacturer, and (3) to verify possible outcomes of the implementation of an RFID system. In order to accomplish the research objectives, quantitative and qualitative approaches are employed for gathering data. Document review, face to face interviews, and site observation are the main techniques employed. These provide the conclusion, the key findings that can answer the question *"How could the Company implement an RFID system efficiently and effectively?"*

It was found that the main causes of production waste are in the two main processes in the production line, which are the Etcher and Edger processes. In every work order there are approximately 19.47 lenses wasted. Therefore, an RFID system is selected to be used in order to resolve this problem. After comparing the different types of RFID service, the passive tag is suggested to be the most suitable tag for this lens manufacturer because of its cost effectiveness and performance. The cost of implementation and expected outcome of RFID implementation were compared. The results revealed that in three years of RFID implementation, the return on investment of this project is US$ 7,625,732, which represents 96.5% of the total cost of production waste.