

Abstract

A business nowadays needs to enhance the competition capability by increasing the production efficiency and reducing the production cost in order to survive in the highly competitive environment. The easiest way for an organization to increase the profit is to raise the unit sale. However, under current competition, an organization decides to increase the profit by reducing the production costs and still maintaining the good quality and lower price. There are many ways to reduce the production cost. The well organized transportation for a product or a component is one method to achieve lower production cost. This independent study is focused on studying the feasibility to use automatic vehicle (AGV) instead of pushing cart in the hard disk components transportation. The expected goals, after using an AGV to transport the components, are to reduce the problems occurred from the limited working area, decrease the human error and the employee turnover, and also prepare for productivity growth in the future. The results show that the method of components arrangements has to adjust to suit the space of AGV. The new method is to transfer all types of component with one AGV instead of transferring only one type of component at a time. By transferring all types of component, the number of assembly components per round has to be calculated to accommodate the space on an AGV and support the assembly. The number of an AGV for 20 minutes per round is 4 cars and 10 cars for the current assembly line and the future assembly line, respectively. The cost of using AGVs per product unit per day will be 6.5 baht comparing with using the pushing carts on 1.58 baht per unit per day. However, the investment of the AGVs will be returned within 1 year, which is lower than the expected return on investment (ROI) of the studied company, 1.5 years. In conclusion, the using of AGVs in the studied company is reasonable and beneficial.