

## ABSTRACT

The objective of this research is to study, analyze and improve the plant layout of the case study factory plastic processing line in order to reduce production lead time, cost, and transportation. To achieve the expected result, this research will be based on the knowledge of industrial engineering and management such as plant layout, work study, and work measurement.

The research scheduling starts from studying and analyzing the current plant layout of bottle processing line and operation, identifying the real cause of problem, survey, and studying the relevant literature, defining the way in improving the layout and comparing layout before and after improvement.

After studying the current plant layout, the case factory is found to have a poor plant layout. Because of the meandering route of material flow, high number of delivering of work in process and finished goods, this results in the excessive use of workforce and time in production and transportation, the cost of production and deterioration of the quality of products. All the problems are the bases for analyzing and defining the way of improvement

After improvement, the unnecessary activity was eliminated that reduced the cost of transportation 32.58 % and time of transportation 58.27%. Improvement of warehouse system and management to be a more close system that can reduce risk of contamination, as a result, increasing the quality of the products. Increasing the reputation of the company by creating clean and close system workplace environment that meets the customer requirements. Moreover, the cost of production (labour cost) reduces 32.58% which results in increasing the productivity.