

## Abstract

This study was conducted to determine an appropriate model to be used so that a pneumatic and hydraulic company will be able to order a proper number of various types of products to serve the demand of customers at different periods of time.

This company was selected because it had had high inventory cost due to the fact that it could not order goods accordingly. This problem arose because it had never employed any inventory model that could help it order goods effectively. The administrators used only experience to estimate what, when and how many they should order.

In this study, three models theories - the ABC classification system, the forecasting models, and the optimal order quantity models - were applied. First, the ABC classification system was used to rank the products according to the needs to be further analyzed. Based on the analysis, 54 products were selected. Then the forecasting models were applied to determine the required annual quantity of each product. Finally, the optimal order quantity models including the Economic Ordering Quantity Model (EOQ Model), the Newsboy model and the Silver-Meal Method were applied in order to determine the most efficient model. The total inventory costs of the current practice and the new methods were compared to find out the effectiveness of the proposed models.

The results of the study indicated that the EOQ model obtained the least inventory cost. By applying the model, the total annual inventory cost could be reduced about 838,000 bath or about 47 % lower than the existing figure.