

ABSTRACT

Forecasting is an important tool that all firms are using in deciding the future planning transactions or exercises to be smooth and less difficult. The main purpose of this research is to offer the most suitable forecasting technique instead of the current qualitative forecasting that provides the smallest forecast errors in order to improve the forecasting accuracy which brings about the desired inventory level and customer satisfaction. The chemical trading company is chosen as the case study for this research.

Firstly, the company historical data was examined to determine what product items should be selected. Then, six products that earned the 40% of total gross profit, NC5, NC2, CA6, SK5033, SKCZ, and AT201 were focused on. Then, the six products' actual sales were analyzed in terms of the demand pattern by autocorrelation technique. The result of the autocorrelation analysis for all six products is considered as the stationary pattern. The forecasting methods suitable for the stationary pattern are moving average and exponential smooth models. After that, the forecasting results were measured in their accuracy by MAPE method to find the smallest error percentage and select the appropriate forecasting model for each product.

Lastly, the chosen forecasting models were taken to conduct the quantitative forecasting in the quarter 1 to quarter 3 in the year 2016. The forecast result from year 2016 was also measured by MAPE. Then, the new MAPE results were compared to the current company qualitative forecast practice to see the improvement of the proposed forecasting models.