

ABSTRACT

The researcher is well aware of the importance of forecasting towards many significant strategic decision making processes. The more accuracy of forecasting the company has, the more opportunity for them to take an advantage and reduce risk which could ruin business performance. This project aims to find and design an appropriate forecasting system in this case study and the company which is the manufacturer of carbon black in Thailand is chosen.

First, the study investigates the data pattern in older demand to find out if the demand is stationary data or data with trends or data with seasonality or data with cyclical by exploring data patterns and by plotting graphs. However, the data collected over a time period tends to exhibit trends and seasonal patterns in addition to some other influencing factors over of carbon black demand. With all time series data and influencing factors, this study considers applying seasonal regression model to forecast seasonal data by using Microsoft Excel.

The summary outputs of running regression with Microsoft excel shows the value of adjusted R square is greater than 70-100 percent. It means that the seasonal regression model is good enough to predict future demand. We will predict demand for the year 2009 and compare with the actual demand on a monthly basis. Forecasting error will also be investigated by using mean absolute error (MAD) and mean absolute percentage error (MAPE).

The expectation of this study is to estimate the impact of the forecasting system on supply chain activities, such as more effectiveness and efficiency on production plan. The results of computation shows total expected cost of losing opportunity and cost of excess inventory occurs from seasonal regression forecasting methodologies can save by 80 percent more than the traditional methodology.