ABSTRACT

This case study is about a distributor of Betagen products (fermented milk products, yoghurt products). At present, the company is intending to expand its sales area but the proposal was protested by Betagen. The reason is that there are often rush orders from the company to Betagen. Moreover, collecting and filtering data of Sales and Inventory show that the inventories do not synchronize with sales. These company problems can be concluded as due to the company not having good procurement planning.

This project is aimed at procurement planning improvement by creating a model, in order to facilitate users to achieve optimal order quantity and optimal time to order for optimal inventory level. The project began with forecasting monthly demand, calculating safety stock, lead time and inventory cost. All of these were calculated by the inventory model for optimal size of order and optimal time to order. For forecasting techniques, this project chose three techniques; Moving Average, Exponential Smoothing, Exponential Smoothing Adjusted for Trend, or Holt's Method as the patterns of demand are not only constant but some patterns in some products contain the trend component also. For the inventory model, this project tested two scenarios; Fixed order quantity (Q-Model), and Fixed time to order (P-Model).

The analysis showed that P-Model is the most suitable inventory model for the company as it can offer average days of inventory, average received order, number of shortage and total inventory cost lower than actual and the Q-Model. Testing with actual data during January 2008 – December 2008, the company decreased its total inventory cost by about 29.05 million baht, or 22.31% of the actual cost. During January 2009 – June 2009, the company also diminished its cost by about 12.73 million baht, or 20.25% of the actual cost. Moreover, the company was assigned to test the model for one month (21 September 2009 – 17 October 2009). The P-Model decreased cost from 190,690 baht to 133,850 baht, about 29.81% of actual cost.