Chapter VII

Conclusion

Supply Chain Management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Nowadays Supply chain collaboration has been introduced in order to react to actual customer orders, to reduce waste in the supply chain, but also increases market responsiveness, customer satisfactions and competitiveness. Many pattern of Supply Chain Collaboration has been developed and widely implemented in many industries and mostly implemented is Vendor Managed Inventory or VMI.

7.1 Conclusion of the study

This study has proposed three inventory models under information sharing between central depot and service station as a vendor managed inventory concept in order to determine optimal replenishment and efficiency in two echelon supply chain. The results of experiment indicated that the proposed inventory policy can reduced the inventory level when compare with the existing policy. Especially the Continuous review with maximum forecasting method can reduce by 40.59% of annual inventory. Meanwhile Minimum – Maximum with maximum forecast error method generate the inventory reduction 6.60%. However, this model has the better fill rate than the continuous review method. These results shown that adopt the information sharing can generate the utilities to the supply chain. The better inventory management produces the cost reduction and operation efficiency. In addition, the responsiveness to the customer demand increases the level of customer satisfaction.

In addition, cluster analysis has developed to classify service stations to four subgroups. The analysis results did not only illustrate the number of service station groups but further more indicated the performance of each service station by consider both of sales volume and profit margin. Nevertheless, the results of experiment shown that high number of sales volumes do not generate the high number of profit margin, no correlation between the distance from central depot to each service station and the

potential level of each service station. Further more, there are 16 service stations in cluster 4 which has 6 times less profit margin than only 2 service stations in cluster 3 which significant the low level of efficiency in inventory management area and cost controlling.

7.2 Suggestion from the study

For this study, the forecasting model developed base on only the theoretical mathematic model by the central depot only. Without the service stations forecasting and judgment may lead to incompletion of supply chain collaboration which can affect the supply chain performance. According to forecasting requires insight into causes and effects of the supply chain performance which inputs or factors significantly affect the outputs or metrics. However, this experiment does not consider the other factors such as the environment, customer behavior or geographical area of each service station which may affect the end customer demand.

Further more, the others performance metric should applied to increase customer satisfaction and company performance such as

- On time fill rate which is the percentage of orders delivered "on time" that is no later than the delivery day or time requested by the customer.

- Sales / Inventory ratio or inventory turnover ratio

- Quantities fill rate which the quantities of order delivery equal to order quantities.

Company may adopt continuous with maximum forecasting error method instead of existing system. Even though this method generate high number of shortage, but in the real environment the adaptation of information sharing change the demand forecasting to demand planning which react to the end customer demand which can reduce the number of shortage. Further more, demand planning generates supply planning, transport planning and production planning which lead to efficiency in the supply chain.