# E-PROCEEDING

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# COLLABORATIVE PLANNING FORECASTING AND REPLENISHMENT IN ORCHID SUPPLY CHAIN

Chattrarat Hotrawaisaya<sup>1</sup>, Supamit Srisawat<sup>2</sup>, Mohd Rizaimy Shaharudin<sup>3</sup>, Nik Ramli Nik Abdul Rashid<sup>4</sup>

Suan Sunandha Rajabhat University, Thailand<sup>1, 2</sup> Universiti Teknologi MARA, Malaysia<sup>3, 4</sup>

chattrarat.ho@ssru.ac.th1

#### INTRODUCTION

Thailand is a big ten exporters of orchid in the world. Currently, exporting orchid competition situation become intense since the world value of orchid was high as this was to activate newcomer sharing the orchid market also the economic had small purchasing power parity. However, high technology and globalization, inaccurate demand planning, error forecasting, and poor communication may be impacted to all value chain positions such as out-of-stock, lead time fluctuation and high cost and expenditures. Moreover, violent competition is continuously growing up, especially perishable goods that have import-export between many countries. Thus, it is important to study the factors affecting the exporting orchid to improve Thai exporting orchid processes to be number one of exporting orchid in the world. Collaborative planning, forecasting and replenishment (CPFR) is a strategy that can increase efficiency and performance of business such as accuracy data interchange, low costs and high profits, and reduce uncertainty along the supply chain. As yet, the CPFR model has not been specified in a whole supply chain of agricultural product such as orchid industry. Considering the biological nature, seasonality and perishable characteristics of agricultural raw materials and products, the paper revises the CPFR reference model. The study constructs a CPFR model by extending to a multi-echelon supply chain and incorporating upstream suppliers in the supply chain.

#### **PURPOSE/AIM & BACKGROUND**

To develop the extended model of Collaborative Forecasting, Planning, Logistics and Replenishment (CFPLR) for the orchid supply chain.

#### **METHODOLOGY**

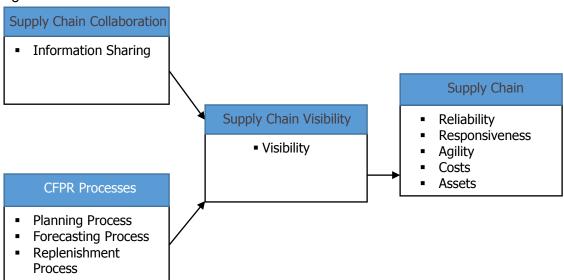
The study investigates the CPFR of Thai orchid supply chain. The study utilized the recent works of literature related to consumer/customer and shoppers' behaviour to build the CFPLR model in the orchid industry. A model was developed with all of the proposed variables were obtained from the various journals published in several established databases.

#### FINDINGS/RESULTS

The CFPLR model is based on the CPFR in the retail sector with detailed modification from the automotive industry to achieve great benefits in the supply chain. The CPFR processes include planning, forecasting and replenishment. However, the past literature was inconsistency in explaining the CPFR steps and processes. The model incorporates collaboration in supply chain activities with information technology, which include data and information sharing such as order

planning, inventory management, production, transportation and delivery. The previous study also revealed that vast information sharing and cooperative decision-making in CPFR processes can improve the visibility in the supply chain. Besides, this study considers the quantitative performance measures, in which the measurement will be developed using the SCOR model. Improving supply chain performance may require a multi-dimensional strategy that addresses how the organization will serve diverse customer needs.

Figure 1: CFPLR Model



As shown in Figure 1, the study proposed that supply chain collaboration and CFPLR process will influence the supply chain visibility, which eventually affects the supply chain performance of the orchid industry in Thailand. Based on the underlying principles of resource based-view theory perspective, the study posited that supply chain visibility is the outcome of collaboration and CFPLR processes and leads to an improvement in supply chain performance.

#### **CONCLUSIONS**

Orchid is a perishable good that the researcher focuses on procedures and supply chain because orchid has value and high profit in Thailand. Although CPFR model can develop orchid supply chain, however, perishable goods characteristics are difficult to match CPFR model. The CPFR reference model is designed to fit many scenarios, but not in a context of logistics activities such as transportation, warehouse, or material handling as a primary role. This study developed an extended model of CFPLR in the orchid supply chain. Due to collaborative planning, forecasting and replenishment amongst retailers or manufacturers and their supplier's decreased inventory and better visibility can be achieved within the supply chain. Since improving supply chain performance require a multi-dimensional, this study incorporates performance measures using SCOR reference model to identify, measure, reorganize and improve the orchids supply chain processes.

Keywords: CPFR, Orchid, Supply Chain, SCOR

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