

Summary of Master's thesis for RELEX Supply Chain Award Best Master's Thesis, Europe 2013

Title:	Collaborative Buyer-Managed Forecasting: a new framework to create a competitive supply chain in the grocery sector
Author:	Annika Alftan
University:	Hanken School of Economics, Helsinki, Finland
Major subject:	Supply Chain Management and Corporate Geography
Degree:	Master of Science (Economics and Business Administration)
Submitted:	2.9.2013
Length:	107 p. (excluding Swedish summary and appendix)
Supervisor:	Prof. Karen Spens
Grade received:	Excellent (highest possible grade)
Project:	Part of LogiNord- research project at Aalto University
Keywords:	collaboration; planning and forecasting; systematic combining, bullwhip effect, Vendor-Managed Inventory (VMI), Collaborative Planning, Forecasting and Replenishment (CPFR), Collaborative Buyer-Managed Forecasting (CBMF)

Planning serves as an important function in steering a company's operations and cash flow. Creating accurate plans to meet the demand and company goals is a challenging task. This is especially hard in the grocery industry, because the product variety is high, competition is fierce and consumer demand is particularly volatile. The demand is affected by seasons, promotional campaigns, the weather and also more flexible opening hours of grocery stores (Småros 2012). Supply chain planning in these circumstances is demanding because accurate and reliable forecasts are needed to be able to create a responsive supply chain (Kaipia et al. 2013). By sharing planning information based on the grocery store sales, stock information and forecasts, supply chain members can plan their own operations more proactively (Jonsson & Mattsson 2013). Several models have been developed to support collaboration and efficient information sharing, including Vendor-Managed Inventory, VMI, and Collaborative Planning, Forecasting and Replenishment, CPFR. Despite the development, the current models do not solve all the challenges of grocery replenishment management for example due to the extensive human and financial resource commitment needed and the inability of manufacturers to translate the detailed point-of-sale (POS) data from stores into their own planning processes (for example Barratt and Oliveira 2001; Fliedner 2003; Holweg et al. 2005; Whipple and Russell 2007).

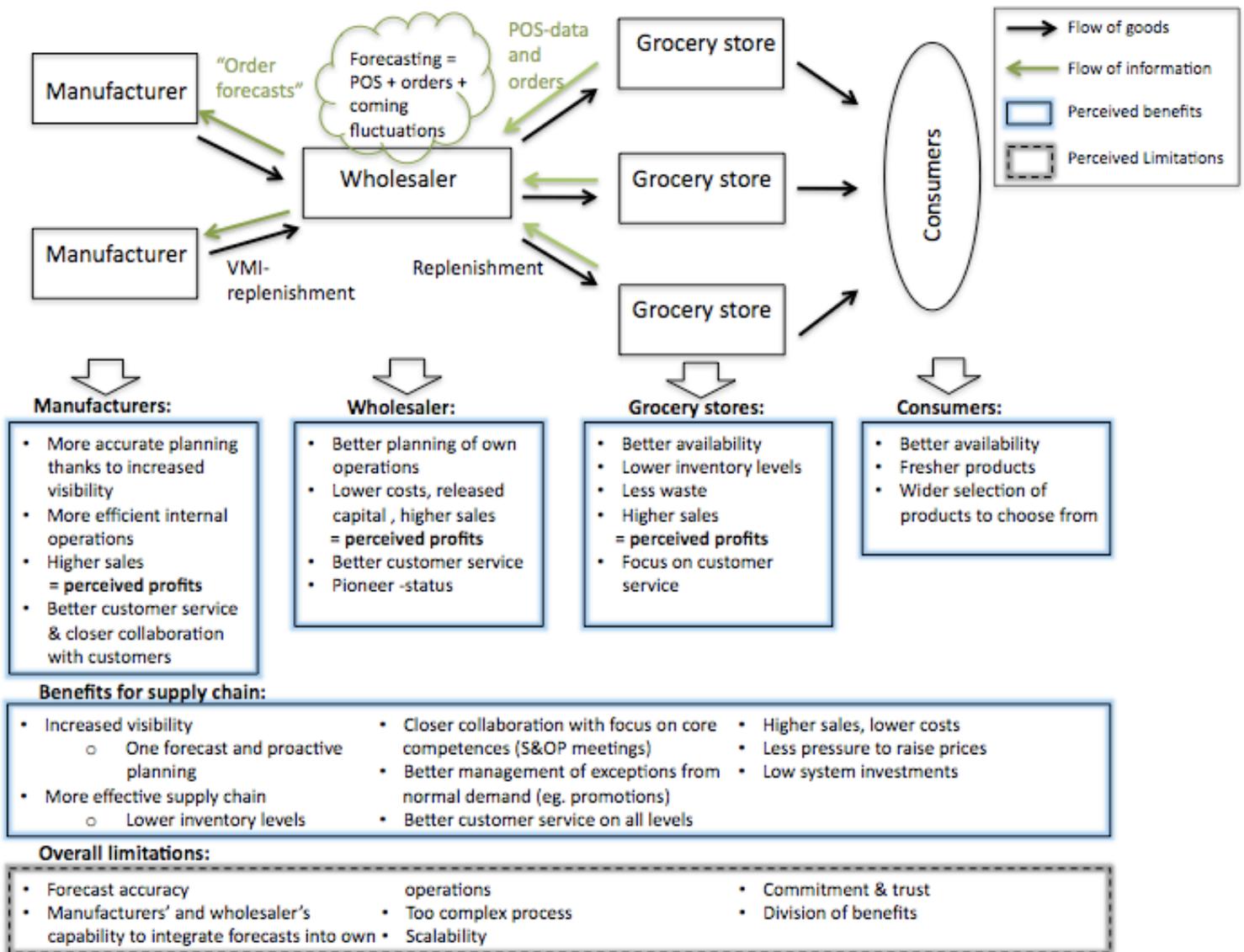
The aim of this thesis is to construct a new framework for buyer-supplier collaboration and to evaluate its perceived benefits and limitations. In order to achieve this aim a case study was made on a current project between a grocery wholesaler and two of its suppliers. Three research questions were formed:

1. Why do companies collaborate?
2. How have the collaborative supply chain initiatives within grocery industry developed?
3. What are the perceived benefits and limitations of the new buyer-supplier framework?

The theoretical background, Chapter 2 in the thesis, gives an insight into the challenges with demand information in the supply chain (the Bullwhip effect). The thought of creating common benefits between supply chain partners as presented by the relational view of the firm (Dyer & Singh 1998), is discussed next. The Collaborative Supply Chain Framework (Simatupang & Sridharan 2005) is presented and the model is extended with the issue of trust. A review of the reported benefits and limitations of previous operating models (VMI and CPFR) creates a starting point for the case study. The review of selected articles, exemplify the benefits of the two models for the supplier, customer and the whole supply chain.

The unit of analysis in the case study is a grocery supply chain with four echelons: manufacturer, wholesaler, retailer and consumer. These four echelons are studied by gathering interview data from four different companies, i.e. sub-units. The sample in the case study was purposefully selected because these four companies participated in the pilot phase of the studied project. The companies are: (1) the wholesaler that initiated the project, (2) a juice manufacturer and (3) candy manufacturer that are suppliers to the wholesaler as well as (4) the software provider, which has developed the software that is used in the project. Nine semi-structured interviews were complemented with secondary data from other sources related to the current project (on page 55 in thesis). To be able to provide a full description of the new operations model and its perceived benefits and limitations, the sub-units were first analysed separately (within-case analysis) then between sub-units (between-case analysis) and finally across sub-units (cross-case analysis) (Yin 2009).

Current collaborative models, such as Vendor-Managed Inventory, VMI, and Collaborative Planning, Forecasting and Replenishment, CPFR, do not totally solve the challenges of grocery replenishment management and difficulties in benefiting from visibility still exist. The results of this thesis indicate that the new operations model, called Collaborative Buyer-Managed Forecasting (CBMF), improves several of the limitations of previous operating models and could present the next step in development in the field. CBMF creates a proactive planning approach and closer collaboration in the supply chain. The centralised forecasting transforms consumer demand into a more usable form and creates one forecast for the whole supply chain. The model facilitates efficient exceptions management (for example promotional campaigns and new product introductions) and lowers inventory levels while at the same time it provides better availability of products in retail stores. The figure below summarizes the key findings of the study: the perceived benefits and limitations of CBMF for different supply chain members.



Acknowledgement

The company labelled as “Software Provider” in the study is Relex Finland Oy, where the Managing Director Mikko Kärkkäinen was interviewed.

After submitting this thesis in September 2013, I have continued the research at Aalto University as a part of LogiNord –research project (more information here: <http://www.sintef.no/Projectweb/LogiNord/>). Based on my thesis, I have written together with two co-writers a conference paper that will be presented at the Eighteenth International Working Seminar on Production Economics (Innsbruck) in February 2014. In addition, based on my thesis, an academic article is about to be submitted to a SCM journal in the following months.

References used in this summary

Barratt, M. & Oliveira, A. (2001): Exploring the experience of collaborative planning initiatives, *International Journal of Physical Distribution & Logistics Management*, vol.31, no.4, pp. 266-289.

Dyer, J. H. & Singh, H. (1998): The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage, *Academy of Management Review*, vol.23, no. 4, pp. 660-679.

Fliedner, G. (2003): CPFR: an emerging supply chain tool, *Industrial Management & Data Systems*, vol. 103, no. 1, pp. 14-21.

Holweg, M. & Disney, S. & Holmström, J. & Småros, J. (2005): Supply Chain Collaboration: Making Sense of the Strategy Continuum, *European Management Journal*, vol. 23, no. 2, pp. 170-181.

Jonsson, P. & Mattsson S. (2013): The value of sharing planning information in supply chains, *International Journal of Physical Distribution & Logistics Management*, vol. 43, no. 4, pp.282-299.

Kaipia, R. & Dukovska-Popovska, I. & Loikkanen, L. (2013): Creating Sustainable Fresh Food Supply Chains through Waste Reduction, *International Journal of Physical Distribution & Logistics Management*, vol.43, no. 3, pp. 262-276.

Simatupang, T. M. & Shridharan, R. (2005): An Integrative Framework for Supply Chain Collaboration, *The International Journal of Logistics Management*, vol.16, no.2, pp. 257-274.

Småros, J. (2012): *Utnyttja POS-data i leveranskedjan – reagera snabbare på förändringar i efterfrågan!* Whitepaper 3.9.2012. Available at: <http://www.relexsolutions.com/wp-content/uploads/2012/09/RELEX-Utnyttja-POS-data-i-leveranskedjan.pdf> [Accessed 1.3.2013]

Whipple, J. M. & Russell, D. (2007): Building supply chain collaboration: a typology of collaborative approaches, *The International Journal of Logistics Management*, vol.18, no.2, pp. 174-196.

Yin, R. K. (2009): *Case Study Research: Design and Methods*, Third edition, Thousand Oaks: Sage Publication.