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Abstract

This thesis is a case study aiming at assessing the effectiveness and efficiency of the supply chain strategies applied by a case company along the life cycle of one of its products. The research problem was decomposed into three sub-problems. Firstly, the market changes happening along the product life cycle and their implications to supply chains were analyzed. Secondly, alternative supply chain strategies suitable for different market conditions were screened. Finally, methods to assist in the effective implementation of selected supply chain strategies were mapped.

The research problem was first approached from a theoretical perspective, where answers to the three research sub-problems were fetched from previous research and literature in the fields of product life cycle management, supply chain strategy, and supply chain modeling. Based on the consulted sources, a framework for assessing the suitability of supply chain strategies in different market conditions and an optimization tool to assist in their implementation were proposed.

In the empirical part of the thesis, the functionality of the proposed framework and optimization tool were tested in a real case study. The data needed in the empirical research to outline the case company's supply strategy and to model the supply chain network were gathered in thematic interviews with key supply chain managers of the case company, who also validated the end results of the research.

The results of the empirical analysis indicated that the supply chain strategies applied by the case company along the life cycle of the product under scope are well aligned with the theoretical framework presented. However, this is a necessary but not sufficient condition to ensure that the supply chain will perform efficiently. To fully capitalize on the benefits of a certain supply chain strategy it has to be successfully implemented. In the case company, the implementation process was guided by a set of experience-based heuristics rather than scientific procedures and tools. Given the complexity of the supply network, this approach does not necessarily lead to optimal results. The results of the analysis showed that overlooking the implementation of supply chain strategies could increase the total supply costs by 25%. These results pinpointed an opportunity for the case company to improve the efficiency of its supply chain by using optimization techniques to assist in the implementation of its supply chain strategy.

Key words	Product life cycle, supply chain strategy, supply chain management, optimization.
Further information	