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Abstract

The centralization in logistics is a popular topic today when companies compete against each other in global market. The logistics and supply chain management is seen as a competitive advantage. This development has caused companies to research their supply chains more carefully. Thus, there have been many innovative implementations of classic logistics methods in recent years. Centralization is one of these methods that is used to develop supply chain.

This study aims to evaluate quantitatively the alternative distribution networks. The alternatives of distribution network present the different level of centralization possibilities. The framework comprises trade-offs used to compare decentralized and centralized supply chains. These trade-offs are the part of the main trade-off in logistics that is defined between costs and service level. In a case study the differences between of three alternative distribution networks are evaluated. These are the current decentralized distribution network with warehouses in Finland, Germany, and UK (A), centralized distribution network with warehouse in Finland and terminal in Germany (alt. B), centralized distribution network with warehouse in Finland in Germany (alt. C).

The results of case study present that centralization offer possibilities for supply chain development. As presented in the theory, centralization of supply chain reduces costs and improves operations. The operation with a central warehouse in Finland and the terminal in Germany (alt. B) would result the lowest total annual costs. However, the large variation of customer demand would make this alternative risky and difficult to manage. Typically, operations with a terminal require a stable demand, which should be ensured by supply contracts before this alternative (B) is feasible. Thus, the operation with warehouse in Finland and in Germany (alt. C) seems the best solution for the development of supply chain at the moment. The safety stocks of warehouses are well suited for operations with large variations of customer demand in this alternative.

Key words	Centralization, distribution network, warehousing, inventory
Further information	