

# Increasing manufacturer's attractiveness in a digitalized distribution network through innovative logistics

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## Abstract

Logistics demands are changing rapidly due to digitalization and globalization. How can a manufacturer increase its attractiveness in the eyes of its key dealers and distributors with the help of reorganizing logistics? What kinds of new roles are available for logistics operators? What demands does e-commerce set for manufacturer's logistics?

**Keywords:** Distribution logistics, dealer, manufacturer

## Introduction and motivation

This paper focuses on ways to examine the real needs for logistics performance, and opportunities that logistics can offer in increasing competitive advantage and attractiveness of a manufacturing company in the eyes of its important dealers.

We first present a literature review that identifies the stream of literature that has discussed attractiveness in supply chain, the changing environment of distribution logistics, and studying the needs set for logistics from customer's point of view. Then we describe our research method and the case company. We conclude with discussion about the subject and future research needs.

Logistics in the distribution network is a key factor of competitive advantage. There have been radical changes in the distribution environment in the 21<sup>st</sup> century. Digitalization as a whole affects the distribution logistics by e.g. increased awareness of the customers, increased complexity of products and increased importance of software in b-to-b equipment. On the other hand the digitalization offers opportunities for the demand chain management through e.g. IoT and industrial internet. Deloitte (2014) has listed innovations that drive the changes in supply chains and distribution networks. According to Deloitte, the top three emerging innovations are sustainability, mobility/machine to-machine technology and 3-D printing. Also emerging e-commerce has shaken the distribution networks also in b-to-b business. New solutions are needed in

order to reorganize distribution logistics in an efficient way in the changed environment and in order to take advantages of available opportunities related especially to digitalization. In an optimal situation the reorganization can be done proactively.

This paper focuses on creating a framework for interviews in order to find out the real needs of end customers concerning logistics of a manufacturing company. Between the manufacturer and the customer there is a dealer, and the dealer itself has its own objectives. The paper describes, based on a literature review, a method to discover and reveal customer's current and future desires. In this way a manufacturer is able to create responsive and efficient logistics that in turn increases attractiveness of the manufacturer in the eyes of its dealers.

The research is based on a single case study, and has as a case a large manufacturing company. The company manufactures high quality equipment to be used e.g. in shipbuilding and manufacturing industry. Its customers are mainly b-to-b customers, but for smaller equipment there are also private end consumers. The company has a need to reorganize its distribution logistics so that it would answer the customers' real needs and at the same time offer attractive logistics solutions to its dealers, with reasonable costs and high quality.

In this research we have, firstly, created *a framework to support decision making* of the whole process of reorganizing the logistics. This includes three parts: 1) interviews to find out the customer and dealer needs, 2) light simulation of different options of future logistics organization, and 3) selection criteria for reselecting a logistics partner. Secondly we develop *an interview framework for finding out the customer needs* in order to address the first part of our decision support process. In this paper we briefly describe the whole framework, but concentrate on the interview framework. The data collection and the analysis will be done in the spring 2015. The analysis will be presented in the conference to the extent that they are finalized at that time.

The framework in this study is manufacturing industry.

## **Literature review on attractiveness created by logistics and on reorganizing distribution logistics**

Mortensen et al. (2003) stated that companies have recognized that their supply chain capabilities give them a competitive edge for delivering what customers want. However, often customers are not a homogeneous group requiring the same physical products and services. From a manufacturer's perspective, this demands that the issue of customer and supplier attractiveness should be considered. Mortensen et al. set a question: How can a company work with a differentiated approach to be more attractive to selected customers or to suppliers? They answered the question by developing a maturity model, which helps companies manage their resources more efficiently. It provides a structured framework showing where to start, and a foundation for an assessment of companies' current customer and supplier attractiveness from logistics point of view. In our research we take a little different approach by concentrating on the demand side, and especially on the dealer's view. We have constructed our interview framework to support also obtaining the customer view through the dealer interviews.

Chase et al. (2007) state that demand chain management is a dynamic network that enhances profit-making relationships with customers. This emphasises the

importance of taking the views of all demand chain actors into close consideration when developing profitable distribution logistics. In our research we not only take the views of key actors in the demand chain into account, but also the views of all key functions inside our case company. This will ensure the relevance of the framework developed in this study.

Jelassi et al. stated already in 2003 that the Internet offers manufacturers a new way to market their products and interact with end-consumers. Manufacturers can through the Internet, dis-intermediate traditional players in the distribution chain and in addition to selling products, provide services to online customers. Now in 2015 the opportunities are about to be mainstream in certain industry sectors, and thus call for new logistics solutions. Chen et al. (2014) point out that for channel managers, choosing the optimal distribution mix in multiple distribution systems is extremely puzzling since each distribution channel possesses particular strengths and weaknesses. Our study aims to touch these issues related to e-commerce.

Based on these aspects, we bring our contribution to answer the question how a company can address the above mentioned issues, so that it can proactively increase its attractiveness in the eyes of its dealers through innovative logistics solutions.

## **Method and the research approach**

The research is conducted as an in-depth case study (Yin 2003). Unit of analysis is a manufacturer – dealer dyad in manufacturing industry. Our main intention is to build a framework for investigating the needs of dealers and their customers. The research questions are:

1. What are the essential steps to reorganize logistics to fulfil dealer and end customer needs?
2. With what kind of interview framework can the customer needs be discovered?

As a research approach we have selected an approach created by Hyötyläinen et al. (2014). In this approach the work starts with case work. The case work is based on the identified real needs of the company. At this phase there is no certainty about scientific results. After identifying the needs, the work continues with building a method to approach the problems of the case company. After that, partly as an iterative process, the researchers match the problem with identified theories and gaps in the theory. The practical work, performed by researchers in close collaboration with the case company, is ongoing at the same time. The results of the work and the existing theory are combined, and solution to the initial problem is constructed. The scientific level of the outcome can be classified in four levels: case specific, best practices, middle range theory and grand theory. This is described in the figure below.

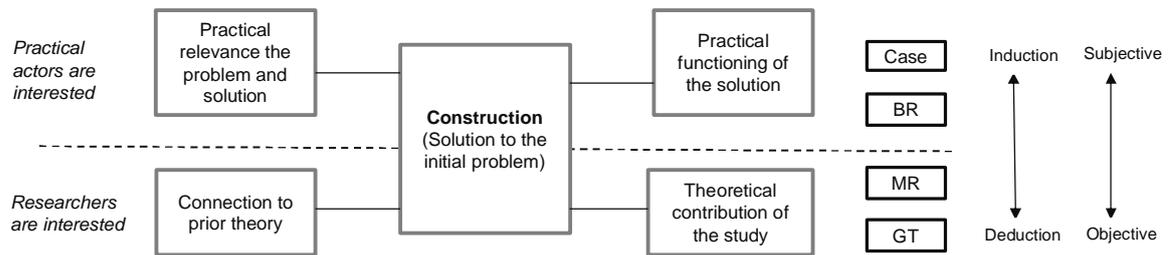


Figure 1. Information classifications in the context of research and development, Hyöttyläinen et al. (2014).

In the focal case company the problem has been defined in collaboration with the researchers. The three-step process described in this paper was defined in several joint workshops. The first of these steps includes creating an interview framework to discover the real customer needs and thoughts of dealers in a specific geographic area. The framework was created in close collaboration with researchers and relevant people from the case company. The people included management of logistics, production, marketing and sales. Having people from several functions of the company to take part in building the research framework was one of the key success elements. Integrating the marketing function into the supply chain leads to greater customer insight and improved value offering for the company (Hoover et al. 2001). The interview framework is the core of this paper, and we will describe it in the following chapters.

## Case company and the research environment

The case company is a large Finnish metal industry company. It manufactures high quality equipment for shipbuilding industry, manufacturing industry and construction business. Its products are high-tech equipment mainly for b-to-b markets, but for smaller equipment there are also private end customers. The company operates globally with manufacturing, subcontracting and sales offices in several continents, and with global markets.

The geographical environment in this study has been defined to be European markets, and at the first phase Germany. In Germany the company has a subsidiary and 78 dealers.

## The research instruments

To address the issue of new requirements for logistics in a digitalized world we have formulated a three-step process. The first step is to discover *real* dealer and end customer needs concerning logistics. At the second step a light simulation model is created in order to be able to simulate the logistics solutions based on the dealer interviews. At the last step, after the requirements and potential solutions for organizing the logistics are identified, we will create criteria for reselection of a logistics operator. The three step process is described in the figure below.

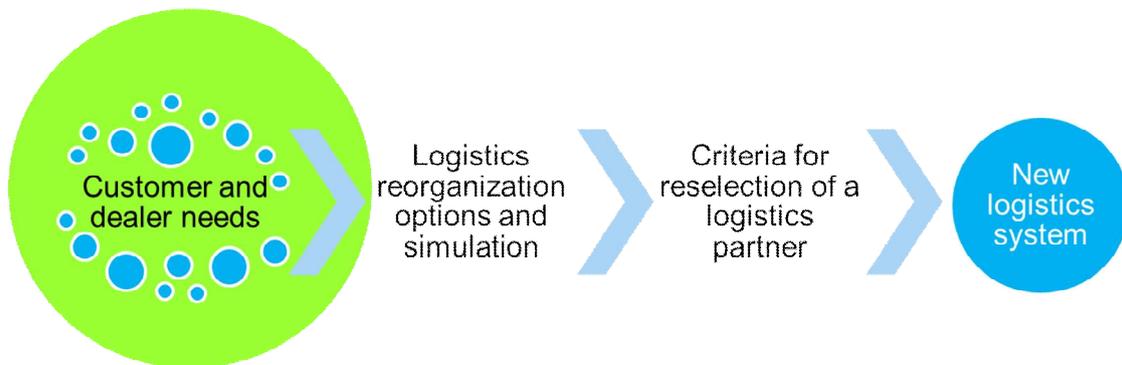


Figure 2 – The three-phase logistics reorganization process in order to improve manufacturer attractiveness.

This paper concentrates on the first step “Customer and dealer needs”. For this purpose, it is essential to interview local dealers in the selected geographic area. It is also essential to be able to formulate the interview questions so that the answers cover both the dealer views of what kind of logistics would make the manufacturer more attractive, as well as the customers’ current and future needs. The content of our interview framework is described in the following figure.

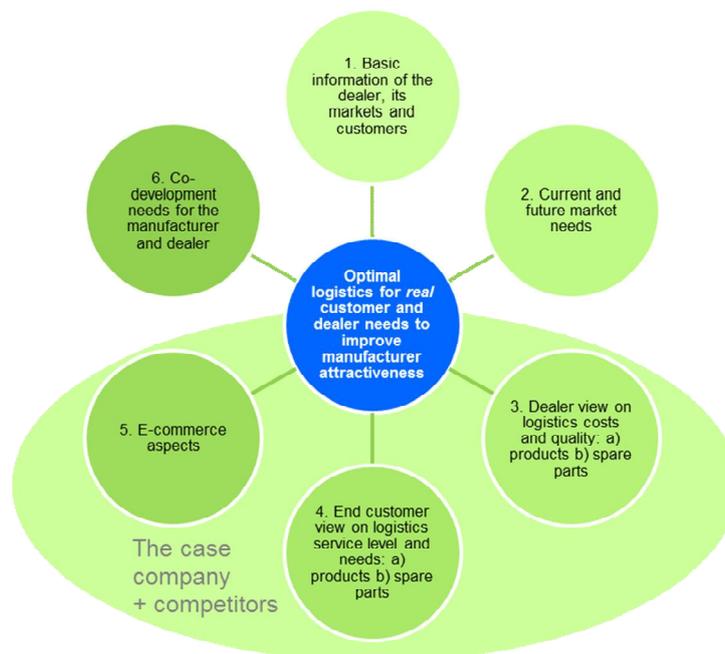


Figure 3 – The interview framework.

We have defined necessary areas and approaches to be addressed. The areas include, first of all, the basic information of the dealer and the markets, and future trends

of the markets. The future trends are discovered bearing especially in mind their implications for logistics. The following issues touch the core of creating attractiveness by logistics. They are perceptions of logistics quality, cost and needs. These are handled from different viewpoints:

- 1a) dealer view 1b) customer view. It is important to aim at differentiating the dealer's and customer's views since they both have their own needs and objectives.
- 2a) product based view 2b) spare part based view. For an equipment manufacturer it is essential to handle separately the product and the spare part logistics when discovering the dealer and customer perceptions. This division continues throughout the interview framework.
- 3a) the case company performance 3b) competitor performance. By taking a look at both case company issues and the competitor performance, we aim at finding good benchmarks if there are any.

In addition to this, needs for co-development are discovered. Developing the logistics together with the dealer is fruitful and creates a win-win situation. New relevant trends like e-commerce are also touched. E-commerce sets completely new requirements for the whole logistics system, and yet this area lacks both academic research and practical large scale solutions (Bask et al. 2012). E-commerce, also in b-to-b markets, will require profoundly new kind of thinking and processes starting from the manufacturer's production ending to the solutions for logistics organization to the final customer's door. This will create new opportunities also for logistics partners. It also sets new criteria for logistics partner selection for the manufacturer, in order to be proactive in the reorganization of logistics.

## **Discussion and conclusions**

Starting point of the research topic has been a problem set by our case company. Distribution logistics, being one of the key competitive advantages for a manufacturer, has a need for proactive actions due to radical changes in the market environment in the 21<sup>st</sup> century caused by e.g. digitalization and sustainability issues. The research follows a methodological approach defined by Hyötyläinen et al. (2014). In the research the case company problem has been complemented with findings of literature review. In literature, important research needs in the issue of increasing manufacturer's attractiveness through logistics as well as finding out the real logistics needs of customers, have been identified to support the case company problem, and our research has been directed to cover a slice of this gap. Thus this study aims to give an answer to this question: how can the customer needs and new needs for logistics be discovered? It also aims to give an answer of what are the necessary steps to reorganize logistics in a changed environment. We have defined necessary areas and approaches essential to be addressed. The areas include, in addition to the basic information of the dealer and the markets and its future trends, several different views: 1a) view of the dealer 1b) customer view 2a) product based view 2b) spare part based view 3a) the case company performance 3b) competitor performance. In addition to this, needs for co-development are discovered as well as new relevant trends like e-commerce are touched.

The development work of the three step process and the interview framework has been done in close cooperation with the case company as well as reflected against current

academic literature. These ties make the results fruitful for both academia and manufacturing industry. The study offers a framework which is focused on challenges of responding to changes driven by digitalization. The framework also helps to obtain a picture of future opportunities for logistics service providers. The strength of the framework is that it has taken into consideration several functions of the manufacturer: logistics, production, marketing and sales.

We will continue from this with the actual analysis on the interview data, which will be presented in the conference presentation. We expect the analysis to give important contribution to new customer requirements concerning logistics in the rapidly changing environment.

Further research issues are related to the third step of the logistics reorganization process, created in this research, which is *the criteria for reselecting a logistics operator*. Outsourcing logistics has been studied widely including operator selection issues, but there is a research gap concerning the issue of reselection of a logistics operator. Yet many companies are currently facing the problem. Another very interesting future research issue is *the effect of e-commerce in b-to-b market on logistics*. E-commerce will have significant effects for the manufacturer starting from product design, touching also production planning, and ending up in logistics issues. It will set tempting new opportunities for logistics partners, and at the same time also new requirements for the manufacturer for criteria to reselect its logistics partner.

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