

Matti Evonen

# Choosing a Logistics Partner for a Professional Audio Monitor Manufacturer's Web-distributor

Evaluating Costs, Benefits and Disadvantages When Conducting Direct Sales within the EU Area.

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Preface

I would very much like to thank my supervisor Thomas Rohweder, who has instructed me in a very professional manner throughout my study and work. His guidance has helped me a lot from the very start to set and accomplish the goal of this study. I also want to thank Zinaida Grabovskaia, PhL for her work. Zinaida has helped me to improve my writing style throughout the whole Master's program.

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Matti Evonen

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<p>This study evaluates the costs, benefits and disadvantages when conducting direct sales within the EU-Area. The case company wants to start web-distribution for their products in Germany and to do so they need to evaluate alternatives how warehousing should be organized for this project. Currently it's done at their warehouse in Iisalmi, but for this project two other channel alternatives are considered as well. These alternatives are warehousing somewhere else in Finland or warehousing in Germany.</p> <p>This study starts by defining the objective and outcome for the study. The next step is finding evaluating criteria from relevant literature to properly analyze and evaluate these three different channel designs in a correct manner. Four different logistics service providers were selected for this project to implement the needed logistics services. Their representatives were interviewed individually and recommendations were taken account of to conclude the best possible solution for the case company. After the interviews, evaluation table was made for each of the alternatives and service providers. To properly analyze the solution, weights were given for the evaluation criteria by the case company and then a new evaluation table was made for each of the alternatives and service providers.</p> <p>The outcome of this study is to propose an optimal solution from the alternatives for the case company to implement direct sales in Germany. When the web-distributors operation is initiated, logistics operation is already arranged and organized for it.</p>	
Keywords	channel design, channel alternative, third-party logistics service provider, outsourcing

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## Introduction

Warehousing operations are commonly one of the biggest engagements for a company which manufactures products and they often need improvements. This thesis focuses on evaluating channel alternatives of taking care of logistic network of the case company. Currently the company is designing and manufacturing professional monitors to professional customers in its headquarters in Helsinki, Finland. The company is considering to start direct sales through dealers to end customers within the EU-area.

### 1.1 Business context

The case company of this thesis is a small-sized enterprise, which manufactures professional audio monitors, located in Helsinki, Finland which has almost 30 years of experience in designing and manufacturing studio monitors for professional customers. The company has been and is currently the market leader in this field based on various studies and reviews. Their innovations and product research have been remarkable and lay as the foundation of active studio monitors. What separates their products from the competition is the comprehensive quality of their products. Market such as this is relatively narrow and the company stands out with unique features and qualities what other competitors do not have. The company is proud that all the designing and manufacturing is done in its headquarters in Helsinki, Finland.

Studio monitors are built for a different purpose than regular high-fidelity speakers used at home environments. The purpose is to monitor the recorded audio precisely and clearly so that the sound engineer can focus on his job and make the song sound like it should. On the contrary regular speakers usually polish the sound from the original version so that the listener has a better listening experience. If professional work such as mixing or monitoring is done with regular speakers the result is usually poor. For customers, it makes it interesting that listening to your favorite records with professional monitors, they can sound harsh due to the precise audio image that the speakers provide. There are versions such as the G-series for regular listening purposes, which are still technically based on the professional models.

The Company also offers a wide service for older speaker models such as the first production model s30 from 1978. Most of the monitor manufacturers quit making parts after few years when the new model is out of production. This gives the company a high position among other competitors regarding the long lifecycle of their speakers. The products are also designed to bear heavy use, sound pressure and to withstand the expected long life. The factory guarantee is 5 years for registered products when its usually maximum 2 years depending on the manufacturer. Among the consumers, especially the new speaker models are regarded as indestructible.

The case company has a wide product family which concerns every possible variation of professional monitor. From the small 6010 designed for small home studios where space is limited to the heavy 1236 which is designed for big concert halls. The variety of products is very inclusive so that every consumer could find a monitor to fit their individual needs. The prices are not the cheapest though and they are usually a bit more expensive than their competitors. Second-hand market is comprehensive for their products, but what is interesting compared to other manufacturers is that the case company's monitors usually hold their value much better than the others and they are relatively easy to sell.

The company competes with other top end manufacturers such as Adam Audio and Neumann Berlin. Most of these competitor's products are manufactured in low cost countries like China so the quality is not as strictly supervised than with the case company. All parts for the speakers are manufactured in Finland. The company also prefers local manufacturers regarding to their parts such as the aluminum speaker case for the 8000-series, which are manufactured less than 100 kilometers from its headquarters. The company is very focused on the environmental aspect when manufacturing the products and they keep this mind set in a very high position. Also, when everything is done under the same roof, the quality and craftsmanship of the products is much easier to supervise. This gives the company a definite competitive advantage against its competitors and the main reason how the company can keep its highly-regarded image among the professionals and regular consumers.



## 1.2 The Objective

Currently the sales by the case company are being conducted from distributors through dealers in over 70 countries to the end customers. Currently, the biggest markets for the case company's products are in China and USA, but due to the customs, border regulations and restrictions, it is a very demanding area which will be not focused in this Thesis. Within EU-area, the regulations and restrictions are relatively the same so direct sales could be put in to effect. The company has already offices in Scandinavian countries Denmark and Sweden. The company is now considering starting direct sales through dealers to customers within the EU-area.

Therefore, the company needs for evaluate channel alternatives of taking care logistics with three different options:

- A. *By case company warehousing in Iisalmi, Finland.*
- B. *By using Finnish logistic partner with warehousing in Finland.*
- C. *By using a non-Finnish EU-partner with warehousing outside of Finland.*

Accordingly, the Objective of this thesis is to propose the optimal solution out of the above three alternative channel designs. The outcome is to propose an alternative channel within the example of one German web-distributor.

In this thesis, the evaluation is done by measuring the costs, benefits, dis-advantages and risks what the actual proposal could offer for the company. There are few business partners to select from, and many of them offer different services. With many of the current partners the company has an ongoing contract for certain number of items. The retailers make the forecast by the end of the year and based on that the deliveries are made. The assumption is that the company would offer direct sales via dealers to the end users so it could possibly offer benefits for every participant.

## 2 Method and Material

This section focuses on the research design of this Thesis and the methods how the evaluation was executed. First, this section describes the research approach, secondly the research design, thirdly the data collection and analysis such as the interviews and workshops.

### 2.1 Research Approach

This thesis relies on a case study research approach for conducting research. Case study means a research approach for studying contemporary events are considered and the persons involved in the event are interviewed. Defining the research questions is one of the most important steps in a case study. Question such as “what” in a form of “how many” and “how much” are typically related to surveys and archival strategies, where questions “who” and “where” favor these strategies in an economical research. (Yin, 2003 6-8)

Case study considers the phenomenon in its context, with all the key factors of the event such as interviews, observations, artefacts, documents etc. as a part of a techniques applied when conducting the research. Determining the questions that are relevant for the topic and achieving the precision in understanding and formulating these questions requires a lot of preparation. One important way is to review literature on the topic to form these questions. Novices usually think that purpose of a literature review is to determine the answers about what is known on a topic but expert researchers study previous research to develop brighter and insightful questions about the topic. (Yin, 2003 4-6)

The use of theory in doing case studies is a relevant method when defining the appropriate research design and data collection but it also becomes the main reason to conclude the results of the case study (Yin, 2003, 32-33)

For data collection and analysis, a case study suggests a wide range of data collection methods and research techniques. In the evaluation cases, the evaluator’s task is to understand the systematic evaluation of a social event, for example, or the impact of a policy initiative. (Clarke, 2008: 66-67)

Data can be distinguished not only by means of their intrinsic characteristics but also according to how the data are acquired. Conventionally, a distinction is drawn between the primary and secondary data. Collecting primary data involves the use of research instruments, for example, questionnaires and interview schedules that have been constructed for the purposes of a specific study. All these data collections methods are widely used, especially in the qualitative case study research, as in this study. (Clarke, 2008: 66-67)

Typically, the data collected in qualitative studies are usually gathered through in-depth-interviews, focus groups conversations, direct observations, document reviewing and audio record reviewing. This type of data is not usually aimed to establish generalizability and they point themselves to achieve new theoretical observations about different experiences in a better understanding and detail than is possible through quantitative methods. (Tsai, 2012, 191-192)

In this thesis, the selected approach is the case study research approach, due to the suitability of the case study logic to the logic of this investigation, what it meant to learn from the case. As for the data collection, this study will also use the interviews and sessions as a relevant step for data collection, so that to get the first-hand understanding of the case context. Otherwise it is impossible for the researcher to ask the relevant questions and therefore find the relevant answer to the research question. After comparing different designs, the conclusions can be drawn and then the optimal solution can be found, based on the evaluation of alternatives. The criteria for evaluation is to be found from relevant literature related to the case topic, based on existing knowledge and real life events, relevant for the case context.

## 2.2 Research Design

The Research design of this Thesis is divided into four main steps, which includes two data rounds and the outcome from each stage. First, the objective for this study is defined, second, the existing knowledge is searched from literature with best practice, and third is the analysis of the suitability of given three alternatives which leads to the last chapter, the selection of the channel alternative and service provider.

Figure 1 shows the research design and the main steps of this Thesis.

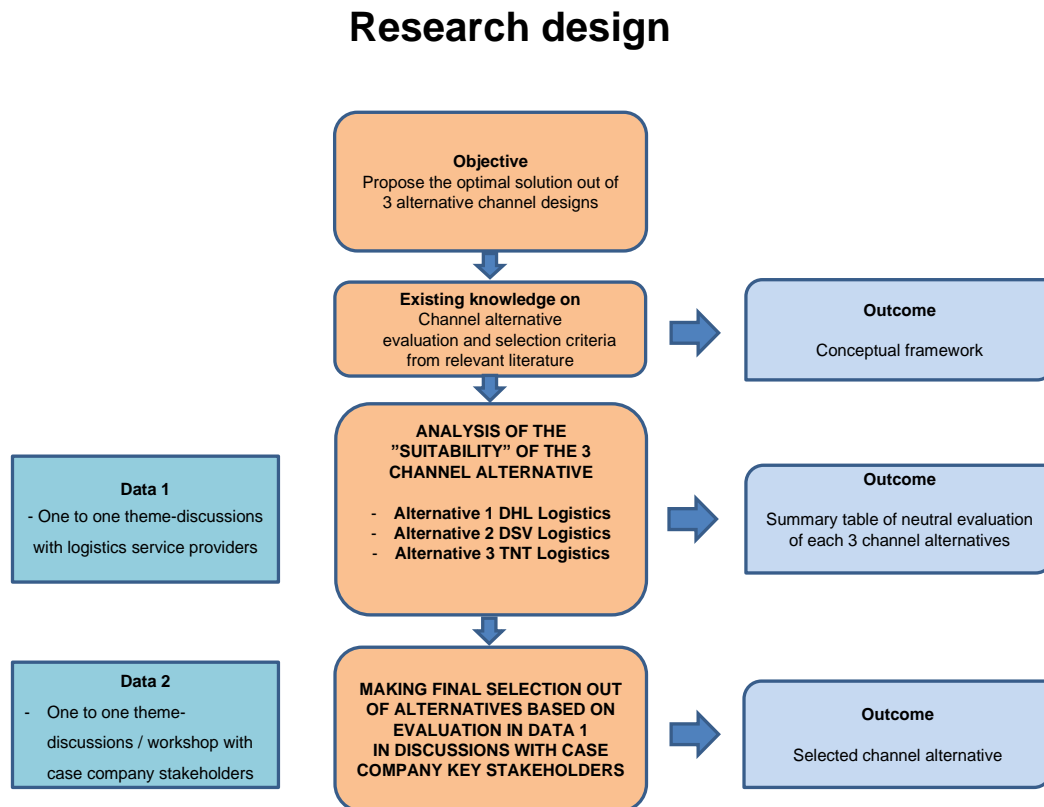


Figure 1. Research design for this study.

As seen from Figure 1, the research design starts with setting the objective followed up with the finding of criteria of channel alternatives for the solution. Last is the making of the proposal for evaluation for the case company out of the given three channel alternatives with the company key stakeholders. Outcome of these phases is illustrated in the right to give a proper understanding of its purpose. Data collections for this Thesis is demonstrated on the left. Data 1 consist from a set of interviews with different logistics service providers and the data 2 consist from a workshop with the case company's key stakeholders.

### 2.3 Data Collection and Analysis

This study relies on two rounds of data collection, Data 1-2. Data 1 consist the analysis phase of the suitability of the 3 alternatives. Data 2 consist of giving weights to the evaluation criteria with the company key stakeholders. Table 1 and 2 below show the data rounds and data sources used in this study.

Data collection for this Thesis was done by doing a set of interviews to evaluate solutions regarding logistics. The employees of the case company were interviewed and the companies which provide logistic services in Finland and outside of Finland. The interviews were conducted at the first quarter of 2017 by phone discussions and meetings in person.

Data collection 1 analyzed different logistics solutions in sake of the case company in Finland by interviewing logistic partners to gather and analyze ideas for finding the optimal solution. There were 4 different logistics service providers selected for this Thesis.

Table 1. The Data 1 design for this study.

	<i>Participant</i>	<i>Date and duration</i>	<i>Documentation</i>	<i>Topics discussed</i>	<i>Data Type</i>
DATA 1					
1	Interviewee 1, Logistics service provider 1	3.2.2017	Field notes, email	Logistic partnership with Genelec in Finland and Germany (Transporting, Warehousing)	Phone interview, email
2	Interviewee 2, Logistics service provider 2	14.3.2017	Field notes, email	Logistic partnership with Genelec in Finland (Transporting)	Phone Interview, email
3	Interviewee 3, Logistics service provider 3	9.3.2017	Field notes, email	Logistic partnership with Genelec in Finland and Germany. (Transporting and Warehousing)	Meeting in Person, phone, email
4	Interviewee 4, Logistics service provider 4	24.3.2017	Field notes, email	Logistic partnership with Genelec in Finland (Transporting)	Phone interview, email

As seen from Table 1, logistics service providers are shown in the order as they were interviewed. First was logistics service provider 1, second was service provider 2, third was service provider 3 and fourth was the service provider 4. The interviews were conducted on the phone and doing meetings in person. Emails were used after the actual interviews for additional information inquiries.

Data collection 2 analyzed the alternatives and examined the requirements, benefits, risks and limitations out of the three possible channel designs to start direct sales in the EU-area. Logistic manager of the case company Minna Hukkanen, was interviewed who is responsible for the logistics operations in the case company. Data 2 collection was conducted by a group meeting in the case company. The suggested alternative approach is then discussed within the case company.

Table 2. The data 2 design for this study.

	<i>Participant</i>	<i>Date and duration</i>	<i>Documentation</i>	<i>Topics discussed</i>	<i>Data Type</i>
	DATA 2				
1	Case company key stakeholders	18.4.2017	Weighted evaluation criteria	The relevance of the evaluation criteria	Workshop

As seen from Table 2, for data 2, this phase gives the weights to the evaluation criteria so that the most important criteria choices can be emphasized in the scoring phase and the optimal channel design can be selected for the web-distributors operation.

### 3 Existing Knowledge and Best Practice on channel evaluation

This section focuses on finding evaluation criteria of channel evaluation found on relevant literature. Different methods are applied when evaluation is made for discovering the strengths and weaknesses of a suggested model. In this thesis, there were three channel alternatives suggested from the case company to implement direct sales within the EU-area. The direct sales would be implemented by a web-distributor which targets to only the market of Germany. To determinate which channel would provide the optimal solution, criteria for evaluation was studied from literature and articles.

#### 3.1 Logistics Activities for a Small-sized Manufacturing Company

Small-sized manufacturing companies usually optimize their global strategies with different supply chain initiatives. Their logistic activities are rather compact when compared to bigger organizations and consist of basic activities such as warehousing and transportation, but sometimes they are outsourced to a logistics partner. A third party logistic provider can offer needed services such as professional logistics transportation, warehousing, logistics information system, product returns service, Inventory management and product packaging. So forth, the third-party logistics provider has a major role in the logistics activities between the company, the marketplace and its customers. (Sahu, 2013: 2)

Third party logistics providers have grown into critical partners for manufacturers supply chain strategy. At the meantime, these service providers offer a wide variety of services and they also want to integrate themselves as the important part of the manufacturing services. Based on this, a long-term strategic companionship should be formed between the manufacturing companies and the service providers which become mutual beneficial. These two participants should consider this companionship as a value and possible profit source rather than a cost. It also takes serious effort for the manufacturing company to select a proper service provider (Huo, 2008: 1).

Different Industries request high-level requirements and tailored packages from different third party logistics providers to fit the service in each possible situation. This typically ends in very complex and volatile contracts with the service providers (Kayakutlu, 2010: 441).

Figure 2 below illustrates common logistics activities and divides them in to four areas (Alktahib, 2014: 112)

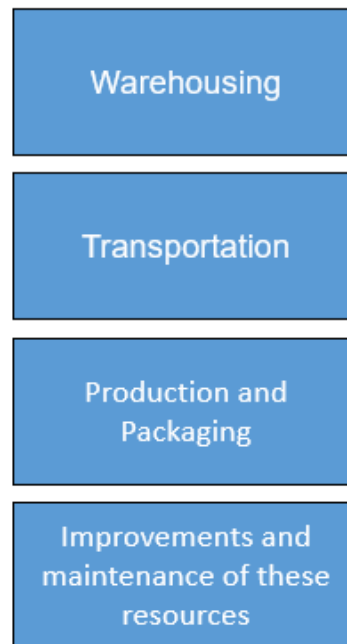


Figure 2. Common logistics activities

Figure 2 divides logistics activities in to warehousing, transportation, production and packaging and improvements and maintenance of these resources.

One of highest growth and demand areas regarding manufacturers has been warehousing and transportation services. Warehousing has been regarded as one of the key factors in customer satisfaction through logistics. Warehousing solutions provide more than one solution, they can offer services where the products are assembled, packaged and priced for the customer. Third party logistics should be fitted to satisfy the customers changing needs. For the last decade, public and private warehousing has been regarded as an expansion of the manufacturing company and its proper operation is very important for every participant in the whole supply chain. It can provide expertise or consultation what the companies expect and especially in the future warehousing can expand to become a relevant transformation area for the product manufacturers. Good customer service is the key for company's success and now they are listening to their customers more than ever. (Jenkins, 1997: 17)



According to Vipul (2012: 12) Small sized manufacturing companies sometimes organize their warehousing elsewhere beside their own quarters because if the space is limited, it is very demanding to organize large quantities of products and then prepare them for shipping. This ties resources and personnel and it can be very time consuming if it's not properly arranged. Effective warehousing in supply chain management help companies gain increased profitability, appropriate storing and protection of products, ensuring uninterrupted flowing of products and handling wide inventories. It also leads to proper inventory control and it improves customer response time because it will help the company to respond the timely needs and wishes of the customer.

A small sized manufacturing company typically manufactures products in small volumes based on the forecast which is designed by the marketing team. This helps the company managers to evaluate how much products or items they ship to their distributors or in some cases the end clients. Based on this the company starts shipping products to the customers from their own warehouse or a warehousing solution which is located elsewhere which then forwards the products straight to the end users. According to Pedersen (2012: 354) the right warehousing strategy usually cuts down the distance to the customers and improves the service level. If the warehousing is located somewhere elsewhere, it should be able to keep the stock in order that there shouldn't be any additional delays when the orders are made by the customers.

According to Banabakova (2015: 55) modern day companies should focus to provide small quantities of products based on the requirements of clients which are produced for a shorter time frame at a defined time terms and hopefully at the same costs as they were mass produced.

Global transportation must be done by a carrier company that can move efficiently any-sized units by land, sea, rail and air in the demanded schedule. Customer service plays a vital role in the operations which these logistic service providers offer for their customers. These services include for example financial services, recovering warranty parts, rate negotiation, carrier selection and call center activities. With the comprehensive return policies by different online companies like Amazon and EBay, these service providers are playing a major part. Many big corporations such as Ford, Honeywell, Nike and Cisco have outsourced these services (Vaidyanathan, 2005: 91).

For expensive consumer products, extensive warranty can always become a competitive edge against competitors. Logistic services should offer comprehensive solutions if the product is sent back to the manufacturer. There shouldn't be no extra effort for the consumer in this issue and the service provider should take care of this problem with the manufacturer. The proper management of warranty logistics is critical to reduce and related warranty costs but also to ensure customer satisfaction (Murthy, 2004-110) Some of these service providers offer warehousing for spare parts or even full repair services, but some companies which products are so technologically advanced so they demand that the repair service should be done within the manufacturer base. According to Selviaridis (2009: 390) there is a weak demand for services such as manufacturing, because many companies consider them to be too important to outsource.

For warehousing solutions, third party logistics offers wide spread distribution for many participants where supply chain management is kept highly centralized in a one location. Transportation is more focused on immediate options usually for smaller shipments when supply chain management uses freight cargo to move bigger load of materials. The risk or damage for third party logistics when the operation is not working properly is the breach of service level agreement and for supply chain management is out of stock situation which can last longer. Demand for shipments for third party logistics is just-in-case scenario where as supply chain management is just-in-time scenario (Vaidyanathan, 2005: 90).

There are also other very important value-adding services what the third party logistic provider can offer such a: in-transit merging, assembling-, upgrading-, installing-, invoicing- and collecting services. Out of these in-transit merging service has become widely popular for example in electronic industry. This means that the service provider collects items or materials from different locations and assembles them in a spot near customer. Sales support is also very convenient and it typically works in a manner that the company stock parts in different locations so that the repairing personnel can gain a fast access to them. This kind of urgent and precise operation is very vital in repair industries. (Celestino, 1999: 55)

### 3.2 Logistics Companionship and Outsourcing Logistic Services

Third party logistics provider's role has been increasing because the rising amount of logistic services. According to many researchers, the supply chain will not be effective enough unless companies won't measure or scope the performance in different qualities than as a one single function (Robertson, 2002: 4021)

"The advantages and disadvantages of outsourcing may or may not occur but should be thought of as possibilities to be managed effectively." (Heizer, 2008: 472)

Vital partnerships help companies reduce the stress, increase their efficiency and stability and help to target their interests for mutual benefits. Managers of logistic operations usually recognize anticipated performance, capability and responsiveness as the most important elements when selecting a logistic service provider. Typically, it seems that market and company qualifications influence the selection of logistic service providers and by outsourcing these services, the managers can gain improvements in the customer service and cost reduction. (Vaidyanathan, 2005: 90)

It is very common practice that many small to mid-size companies gain competitive advantage by developing their logistic practices and techniques. A common trend is to outsource a part or each of the logistic functions for a third-party logistics provider. This is mostly done because of cost and time-saving reasons which can result in improved earnings and more time. To avoid unnecessary investments in warehousing capacity and storing, new methods are developed for the companies such as outsourcing. (Becker, 1999: 40)

These third party logistic companies offer a wide variety of different services which can be tailored to fit the company's individual needs. By outsourcing these services, especially small to mid-sized companies can focus more on their core competences and they don't have to tie each of their resources to the operation activities such as warehousing and transporting. (Graves 2005- p: 24)

Different research and surveys use different terminologies to indicate external logistics partners of businesses such as third party logistics (3PL), logistic service providers (LSP), suppliers and service providers. To evaluate the functioning logistic service provider, different criteria has been used and analyzed throughout the years. The evaluation and the selection is a very important process and by selecting the right logistic service provider, logistic services, suppliers and customer's values can be significantly improved. (Alktahib, 2015: 102)

Third party logistics provider typically focuses its action to one area of the supply chain management to improve the delivering of material or items from the start point to the end user and possibly the return of faulty items back to the supplier. When characterizing logistic service provider, the first party is generally the company which is providing products and the customer would be the second party. Third party would be a company which carries out services that the before mentioned parties want it to perform. (Sahu, 2013: 354).

Third party logistics provider provides outsourced services to companies for some or in some cases all areas of their supply chain management. Their specialization is usually in warehousing or transportation services. Selecting the right company is necessary so that the material or items can find their way to the right place and that the company can focus more on its core competence (Sahu 2013: 355).

Based on the statement of Hal Rabin, the vice president of SonicAir, there are three reasons why companies choose a third-party logistics provider. First, to reduce costs and to optimize logistic capabilities. Second, to be more responsive and flexible to customer needs and third, to achieve critical competitive advantage by using budgets and customer service effectively. As addition to these, third party logistic providers offer capabilities that extent out of the limits of traditional shipping and warehousing management services (Celestino, 1999: 54)

Outsourcing logistic functions has been successful decision for many companies to outweigh their competitors in the field. Before starting the companionship with the service provider, the company should evaluate partnership candidates thoroughly and the selection will most likely prove out to be difficult without the proper orientation. Even though the companies will carry out similar services their qualities can be quite different and one of these qualities may be meaningless to others it may be the most crucial element for some company (Sahu, 2013: 360)

There are five main reasons for companies to outsource their logistic services. First is cost savings particularly on labor. Second is gaining outside expertise of the company which can be a brilliant source for innovation of products or services. Third is improving operations which can allow the company to gain more orders by introducing new products and services. Fourth is the focusing on core competencies so that the company can free up to its resources to more relevant capabilities. Fifth is gaining outside technology so that the company doesn't have to invest in new systems or equipment. Other advantages are that the company can uplift its image when its operating with another expert (Heizer 2008: 272)

Third party logistic provider usually specializes in operation which is integrated with the customer company and they share a lot of confidential information. This can be also a risk for the customer company regarding trust. Therefore, it's very important the the planning phase to carefully make an agreement of these topics that there can't be no possible harm for the company. (Kumar, 2010)

There are three areas what third party logistics provider can offer for the manufacturer in managing supply chain: inbound, when new materials are brought into the factory and outbound, when manufactured items are waiting to be delivered to the customers and after-sales support in if its needed. For after sales support, the service provider can store parts near the customers, warranty situations when damaged item must be returned for the manufacturer or even provide repair services to them. This is referred as "reverse logistics functions" and it's a very essential part in gaining proper customer satisfaction. (Celestino 1999: 54)

There has been rapid enlargement in the services of third-party logistic providers with additional services such as after-sales support, customer service and warranty services. These providers have expanded the responsibilities of distribution centers from simple storage facilities to channel assemblies by offering repair tasks that doesn't necessarily need the service of the manufacturer. (Jayaram, 2010: 262).

Inbound services usually include scheduled transportation services so that the company doesn't have to have big inventories, which can take a lot of space and effort to manage. The service provider can manage this inventory which can answer to the demand of production or manufacturing. On the outbound services, the service provider can manage the inventory of ready items and provide help for warehousing tasks such as order processing, picking, packing and shipping. Also, linking different parties for scheduled global transporting is a common service task as well. (Celestino 1999: 54)

Outsourcing logistics is beneficial when companies are minimizing inventory investments while improving order reliability and speed. Logistic companies who are specialized in coordinating supplier inventories by using the expertise and capabilities of the service provider. Usually when product is in transit the longer company has its capital invested but faster shipping is commonly more expensive than slow shipping (Heizer 2008: 273). Therefore, third-party logistics service providers have warehousing capabilities near the customer or they can centralize their operation near them.

To have optimal information flow, the company needs a third-party logistic provider with a long experience from the IT field. When the IT system is in a good shape it will dramatically improve unit and material movement and tracking. The information flow will typically begin with the 3PL customer and the information is then evaluated by the provider. The evaluation program usually has its own software for inventory control, supply chain management, logistics, transport, material allocation and designed algorithms for its own decision making. Each activity is usually recorded to the customer database with electronic data interchange (Vaidyanathan, 2005: 91).

Modern day customers are demanding just-in time delivery of orders. To accomplish this, companies need typically a strategic placement of smaller distribution facilities which can improve the whole supply chain process. One single error or malfunction in the process can have a terrific impact on the order placement. Many large companies such as Nabisco and International Paper have outsourced their warehousing operations so that they could focus on their main activities and core competence. Providers of these services invest in new equipment and technology to maintain the steady flow of materials and items (Vaidyanathan, 2005: 92).

There are also disadvantages from outsourcing the services. Firstly, increased transportation costs, which can increase dramatically if the distance is long from the provider to the client. Secondly, loss of control when managers can't gain access to some operations anymore. Thirdly, creating future competition, when some core competence is outsourced to other company, quality can't be supervised as strictly and the rivals can surpass then the competence. Fourthly, negative impact on employees, this can happen when one part of the company is shut down so then it can have a strong impact on the work community. Fifthly, longer-term impact when the actual changes that can be also negative could show in the future. (Heizer, 2008: 273)

To ensure acceptable continuing performance when outsourcing a service, it should be evaluated thoroughly by the management and agreements should specify the results and outcomes. The service should be defined in terms of, quality, customer satisfaction, delivery, cost and improvement. The relationship should be established in a belief that both parties will benefit from this interest. Especially if the service plays a vital role in company's strategy, the relationship between the provider and company should be based on continuing communication, understanding, trust and performance. Then the partnership audits should be reviewed frequently or in some cases, daily. When the service role is not so vital, agreements that include audits don't need to be reviewed that often (Heizer, 2008: 274)

### 3.3 Evaluating Third-Party Logistics

The purpose of the third-party logistics provider evaluation is to find the optimal partner who can offer best package of products and services for the customer. The selection of the fitting third party logistic provider is not effortless task and it usually involves facing several challenges such as choosing the right criteria for the selection. Many of these options change within different industries but there are universal options as well. Multiple selection criteria for the right service provider must be evaluated and considered to validate the decision-making process. Most of the criteria choices are typically very subjective and the decision-making process in some cases can turn out to be obscure. Based in some studies, managers can gain access to the performance of the service provider most efficiently (Sahu, 2013: 365).

“Analysis of such criteria and measuring logistics performances has been the focus of many researchers for approximately four decades” (Efendigil et al, 2007)

The selection of the most important parts also depends on the circumstances and the correct selection of logistic service providers can't always be done universally. Qualified logistic resources and capabilities are the key factors which support the logistic service provider's competitive position. Logistic service providers must gather the proper capabilities to transfer it into a better logistic performance (Alktahib, 2015: 102)

Evaluation and selection criteria can be divided into three different elements: performance (financial, customer and operational), resources (tangible and intangible) and services. Logistic resources either tangible or intangible must be conducted properly so that they can be used effectively as a competitive advantage (Alktahib, 2015: 103)

System for evaluating company's complications and the individual needs of a customer is very fundamental for the operation of logistics. The system should optimize inventories depending on the response times and contracts of the parties. This system should also evaluate the placement of warehouses and cargo areas and it also should automatically order items to fill the stock to the maximum potential. Big companies such as IBM and Rolls Royce have also outsourced these operations (Vaidyanathan, 2005: 92).



Choosing the right third-party logistic provider for the company needs some background checking from the case company. It's very important to evaluate the company's strengths and needs and to evaluate those same qualities from the service provider as well. It's recommended to analyze manufacturing- and warehousing process, supplier and the location of the business markets and the partners. The size of the potential service provider company is one of the key factors when outsourcing logistic operations. Other relevant factors are timeframes where the service provider can solve issues for the company or how they are able to provide consultation regarding hectic situations (Celestino, 1999: 55)

It's also important to clarify that what kind of industry the service provider is specialized in and what kind of customers they have. Inventory options are also necessary, what kind of solutions they have especially for the case company products or how they are registered to their system. Accuracy in the inventory system should be estimated and clarified as well. Many outsourced service providers share a data link between their customers so that both parties can access to relevant information. If the company offers this kind of solution, it should be clarified also. Or in the worst-case scenario if the relevant data is destroyed or lost, the service provider should have a data recovery system to gather it back. (Celestino, 1999: 55)

To estimate the direct cost savings when choosing the right third party logistic provider is often difficult or almost impossible. The actual costs of outsourcing rely upon the actual number of activities which are outsourced. Additional services what the service provider can offer will affect this as well and they are sometimes expanded later when the companionship has already started. Typically, inbound and outbound related costs are the highest in supply chain management. When the company doesn't have to have big inventory for manufacturing and the service provider takes care of this area, this space could be free for other use. For outbound use, the service provider can offer consultation how to manufacture items in the right quantities ready for delivery instead of overstocking. (Celestino, 1999: 56)

### 3.4 Evaluation Criteria and Their Meaning

The selection criteria for evaluation of third party service provider are critical to monitor the actual performance of the company. According to Jayaram (2008: 263) the relationship between the company performance and the criteria evaluation of third party logistics provider has been positive and profitable in sake of both parties.

According to Aguzzoul (2014: 2) third party logistics provider selection is a multi-criteria problem where both tangible and intangible criteria need to be evaluated. Some of these criteria choices are developed with strict customer needs in mind while others are common for all circumstances. Sahu states, (2013: 366) Decision-modelling requires human judgement to assign important priorities against every selection criterion and performance measurement

Table 3 below demonstrates the most commonly used criteria of evaluation of third party logistics. (Alktahib 2015: 15, Vaidyanathan 2015: 91, Selviaridis 2015: 6)

Table 3. The Evaluation criteria for evaluating 3<sup>rd</sup>-party logistics services

	<b><i>The Evaluation Criteria for 3<sup>rd</sup>-Party Logistics Services</i></b>
1	Scope of Services (Selviaridis, 2015: 6)
2	Cost of Services (Alktahib, 2015: 105)
3	Delivery Capability (Alktahib, 2015: 105)
4	Flexibility (Selviaridis, 6)
5	Quality of Services (Alktahib, 2015: 105)
6	IT-solutions and Intergration (Vaidyanathan, 2008: 91)

As seen from the table 3, six different evaluation criteria choices were selected for this Thesis. First is the scope of services, second is the cost of services, third is the delivery capability, fourth is the flexibility in operation, fifth is the quality of services and sixth is the IT-solutions and integration. At this point, there are no weights for the criteria as they are evaluated later in this study.

According to Alktahib. S (2015: 120) cost/price, quality, flexibility and services are the most common and used of the evaluation criteria for logistic service providers. In addition to them, services, financial measures, sustainability and delivery represented 76.83 per center of the most used criteria during the years 2008-2013. However, the relative importance of these criteria has changed during different time periods. For example, cost and delivery were more relevant than quality during the years 1966 to 1990. After 1990, quality became more important to the year 2008 and after that, cost and price took their place back as the most important criteria.

This can be reasoned because the declining global economic situation during that time. This period, known as the economic recession has possibly changed the way how logistic service providers are typically evaluated and selected, because there is no actual study that compares any changes in the logistic outsourcing criteria and methods. Other relevant additional criteria is: customer references, financial strength, flexibility on Pricing and IT capabilities which is very important part in modern day logistic field. Performance area includes: delivery times, error rates, and responsiveness to surprising events. (Alktahib, 2015: 120)

Also, according to Selviaridis (2008: 391) Criteria such as cost, service quality, reliability, flexibility and responsiveness are most often mentioned criteria for the selection of logistic service providers. Some criteria choices are decided with specific customer in mind, while others are familiar with every participant. It also appears that previous experience in the service provider's history, experience in specific type of products and knowledge of some specific regulations are regarded as important factors during the selection process.

The suppliers level of quality, service and cost are precisely influenced by its ability to meet its needs. The supplier's quality systems and processes that maintain these attributes are the key factors. Based on this, selection criteria should consider the service providers quality assurance and control strategies. Besides providing a quality service or ensuring future investments, the company needs continuous support from its supplier. Furthermore, criteria should examine the service provider's facilities, IT-systems and efforts in its staff education and training. In a case of international service provider, the company should evaluate the financial transactions and product deliveries between countries and any legal or regulation related matters. (Gulfem 2006: 3703).

Co-work in the IT is also very important factor between the case company and the logistic service provider. Sharing data across the network with the client is necessary so that the both parties can gain advantages. Links between supply chain, manufacturers, distributors and transportation companies removes unnecessary complexity in the logistic workload such as order inventory management and shipment tracking and helps it function better and more fluently (Vaidyanathan, 2005: 91).

Delivery capacity measures the flow of items what the logistics service provider can ship for the customers. This usually is estimated by the marketing team at the end of the year. Based on the forecast, the logistic service provider arranges warehousing and shipping. For new companies or companies which are expanding their market, the first year's volume is typically lower and it should increase within the next few years by double or even triple. One of the roles of warehousing is fighting against uncertainty. When lead times of the supplier are not in balance with customer lead times, demand is supplied from warehouses (Pedersen 2012: 360). By keeping stock in warehousing, demand can be answered and the delay and whiplash effect is kept to minimum.

Flexibility in logistics operation typically influences the logistics service quality in a positive way which improves relationship satisfaction with between the case company and the logistics service provider. Also, the relationship flexibility influences the quality of the service in a good way, especially with customers and this results in a increased relationship satisfaction. The direct effect of logistics flexibility on satisfaction in the relationship is stronger especially in an uncertain environment and the direct and total effect of relationship flexibility on relationship satisfaction is stronger on a stable environment Among customers, this brings a stronger feeling that their wishes are taken accounted and acted upon which results in a better and continuous relationship with the company (Kangkang 2016: 24)

The goal of every logistics service provider is to specify and decide the demands of customers accurately and based on those demands, they should establish suitable services to fit those needs. The essential aim is to offer a proper level of service quality and fill those wishes in the best possible way. (Kilibarda, 2012: 1347)

Logistic key performance indicators (LKPI) have been commonly used to measure logistic service provider's performance. Financial strength usually represents the financial performance level (costs and earnings) that a LSP should provide to support the creation of customer's strategic efforts. LKPI's are referred as profitability, costs and flexibility. Customer satisfaction perspective represents the performance indicators that satisfy the LSP's customers. LKPI's are then service quality, reliability, flexibility and customer sustainability. Logistic processes represent the key performance indicators which mostly describe the goals for logistic service processes and the customers. Logistic key performance indicators are usually human talent, innovation, evolution and resources sustainability (Alktahib, 2015: 110)

The main amount of evaluation criteria has been decreasing from the earlier studies. Studies which were done before, had a larger number of criteria what was more spread around and therefore didn't offer a big influence on the study. Later studies with narrower criteria offered more concentrated criteria on the importance level. This concludes that the later studies were a lot more balanced and they offered more relevant options. A lot of these lower level criteria had become as a part of the main criteria during the years 2008-2013 such as financial position, performance history and the operational control. Now they have been integrated as to one stabilized area of the selection criteria, which is known as logistic performance. Production and packaging have been arranged as part of logistic services. Last, communication systems are part of the logistic resources and capabilities (Alktahib, 2015: 110)

For a small sized company for example, the relevance of logistic provider financial position is quite minimal because the flow of goods is relatively small compared to bigger organization which moves large quantities of products in large vessels and airships. Especially when growing to new market areas, the first years are the starting phase which typically involves just a small batch of products which usually grows within the next years.

Preparation for the request for the proposal is relevant because it shapes the foundation what the service provider does to match the client needs and the resources to fill those needs and last the actual price of those services. Preparation for the request should include a clarification of those needs and requirements. Also, a clear and divisive statement of all the tasks and assignments and measurements related to successful operation should be included in the request form. (Vaidyanathan 2005: 93)

In the final phase, the customer and the third party logistic provider should distinctly understand the details, goals and expectations of the co-work. Also during this phase, problem solving methods are established and the steps to achieve improvement in the process are determined. The provider will most likely enroll staff to work on the client side to keep track that everything is operating in a proper manner. Based on the evaluation, responses to the request proposal and thorough comparison, the service provider can be selected. (Vaidyanathan, 2005: 94)

### 3.5 Conceptual Framework

This section summarizes the key criteria which the evaluation process is solely dependent. This figure assembles the main concept of this Thesis and the ground where the analysis is based on. Each given candidate will be evaluated individually based on these criteria choices.

Table 4. The Conceptual framework

<i>Evaluation Criteria for 3rd-Party Logistics Services</i>	
1.	Scope of Services (Selviaridis, 2015: 6)
2.	Cost of Services (Alktahib, 2015: 105)
3.	Delivery Capability (Alktahib, 2015: 105)
4.	Flexibility (Selviaridis, 2008: 6)
5.	IT-solutions and Intergration (Vaidyanathan, 2008)
6.	Delivery Capability (Vaidyanahtan, 2005)

Table 4 illustrates how the criteria is applied to evaluate these four logistic service providers and their services. The first is service provider 1, second is service provider 2, third is service provider 3. All these four service providers were recommended by the case company based on previous good experiences and because of their reputation in the logistics industry has been acknowledged.

## 4 Starting point for the Channel Alternative Analysis

This section of this Thesis focuses on the evaluation of the suitability of the logistic service providers given by the case company. The evaluation is based on three different channel designs which each serve the same purpose: to deliver the product to the end user. These designs are compared through the evaluation criteria found on the previous chapter. The data for this analysis was gathered in Data 1 during the interviews with representatives from each of the logistics service providers.

### 4.1 The Concept of the Direct Sales and Three Channel Alternatives

Analysis of the suitability of the channel alternatives starts with the investigation as for how it envisages its direct sales and the channel alternatives. In the start, the online store would act as the base for the direct sales and it would offer two different products for the start. These products are familiar in the case company's product family and they would act as the foundation for the operation in the new market. Depending on how the sale would start, new products would be introduced to the web-store subsequently. These products are targeted mainly for professionals so they aren't available in the most typical consumer electronic stores. The market for them is somewhat narrow and the customers expect these products to withstand long life in heavy use. This is the logic behind why they are not expected to sell in vast amounts.

There would also be two recommended shipping options for the customers to select from. First is the delivery in two days and the second is in six days. Typically, Middle to South-European customers are more aware of these shipment options which are usually more exclusive than in the north. This is a result from the location of these countries and their cities which leads to more comprehensive and faster shipment options. These two options are necessary for the customers to determine if they want faster or cost-effective solution. Shipment tracking is also very important element in the online shopping; especially in the trade between two countries because it gives the customer safer feel about the purchase and the actual idea when to expect it to be arrived. Also with expensive electronics such as monitors this is mostly expected as a standard feature. Confirmation of the purchase is typically sent by email or by phone so the customer can select which method is more convenient for him.

Different shipping options also vary with different service providers. Some offer shipping right to customer doorstep while others offer services where customer can pick up the products from the nearest location of the service provider. Also, warranty issues are important in the quality of the services. Typically, if there is malfunction in a product, it is to be sent back to the factory by using the same service provider who shipped to product in the first place. These reverse logistics options are usually cost-free for the customer. Depending on the contract with the service provider, there is typically an additional fee to be paid for the manufacturer for these reverse logistics functions.

For the case company products, the product code is very essential because it provides the manufacturer to track the product and examine beforehand what could be malfunctioning. This also makes it easier to have the spare parts ready for the repairing. These products also expected to have long life, so the tracking is critical after years of use as well. Some service providers offer repair solutions near the customer, so that there wouldn't be a long delay time when the product is repaired and it would also reduce the shipping costs but this is not the case with the case company. All the products related to warranty issues are taken care of under the same roof where they are manufactured.

There is typically a timeframe for the service provider when products leave from the warehouse. If customers make a new order and they want it to leave within the same day, it should be made within the timeframe given by the service provider. For these kind of products, it's typically not that essential but in case of a hurry there are also fast shipping options which are more expensive than the regular shipping options. If the order is already made and paid, it's difficult to change afterwards if the product is already in the collecting phase in the warehouse. This totally depends on the warehousing service provider.

IT-integration is very important for the service provider and the manufacturer. This is fundamental in the e-commerce business and that way both parties can keep track of the new orders and transactions. Typically, the system is hand-tailored to fit the needs of the customer and there are different software platforms to build the system on. If the integration is to be built between the web-distributor or the manufacturers own system, its considered in a case-by-case situation.



The estimated volumes for starting online selling in Germany for the first years are either 100 shipments or 1000 shipments per year. The volume levels are relatively low for the first years because starting direct selling in a new market area demands cautious actions and stabilizing the operation. After first years, if everything proceeds accordingly and reception is good for the products and service, there can be an extensive increase in sales.

It's relevant to be valid that customer information is correct that the package can find its way to the correct place. On online stores this is usually done by the customer at the ordering phase when you fill in all the information. PayPal is very efficient tool for paying because a customer needs to do a profile in the service which authenticates all relevant information so the risk for misinformation is rather minimal. When the data is correct in the first step, the possible accidents in the shipping can be prevented in beforehand.

As far for the case company products, the product number must be able to be read clearly from the package and from the product itself on each individual shipment. And the information from this specific item must be brought to the case company own information system. The main concept behind this is that the products must be traceable after years of use that in case of service the info of the product and its components can be found and accessed easily. This is one of the main concept of the case company products.

All the company's products are manufactured in its headquarters in Helsinki and these channel solutions for web-distributors operation are confined in to three possible channel designs.

Figure 3 below illustrates the channel designs and their individual differences.

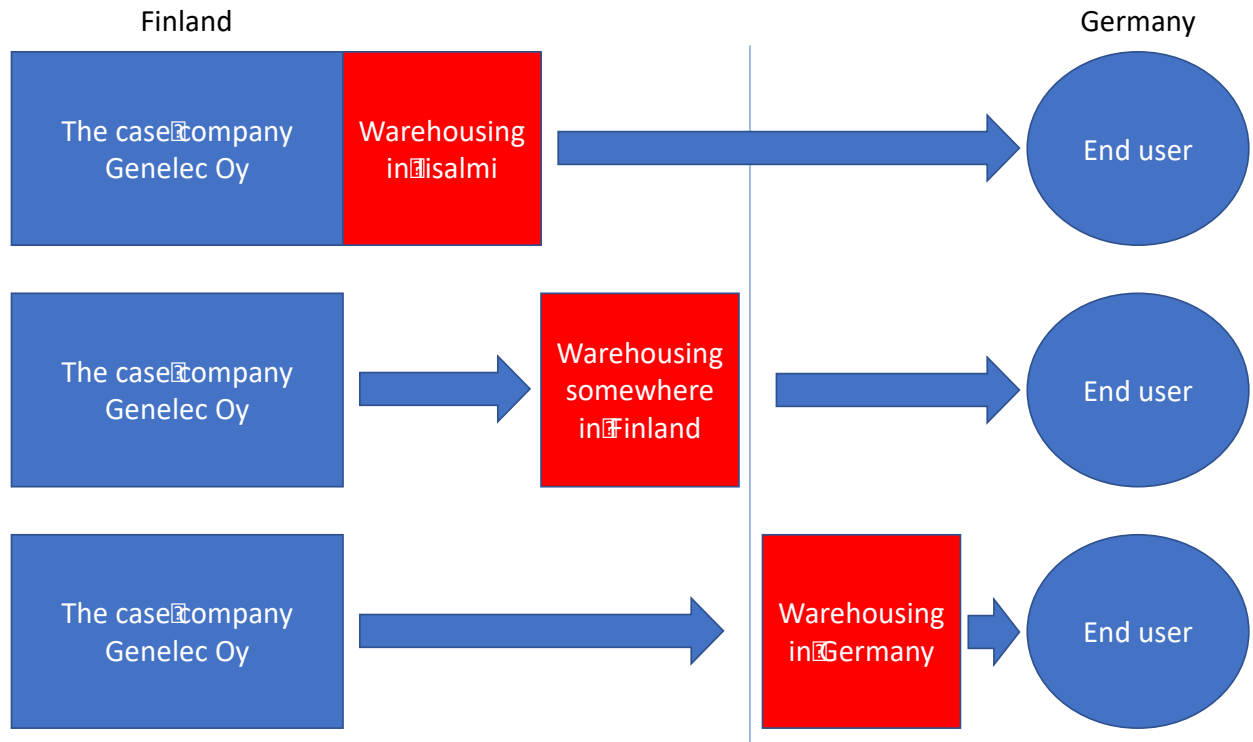


Figure 3. The three alternative channel designs.

As demonstrated in Figure 3, there are the key principles of each different channel designs, first is the product warehousing within the case company in Helsinki and transporting to the end users is arranged by the logistics service provider, second is the product warehousing and transporting to the end user provided by the logistics service provider somewhere in Finland and third is the product warehousing and transporting to the end user outside of Finland by the logistics service provider. These designs act as the solution for the operation depending on the sales and the broadness of the operation. Each alternative is evaluated in its own section according to the evaluation criteria.

## 5 Analysis of the Suitability of the Three Channel Alternatives

This section describes and summarizes three alternatives selected for analysis by the case company. Each alternative is analyzed according the six criteria identified for evaluation the third-party logistics providers in the literature review, Section 3.

### 5.1 Analysis of Channel Alternative 1, Using Warehousing in Iisalmi by the Case Company

This analysis describes and summarizes the alternative 1, using warehousing in Iisalmi by the case company. This is the method how the warehousing and shipping is currently done in the company; it is operated under the same roof as the main operation of the company. From there the shipments are organized to different destinations across the globe. This option would rule out the need of warehousing offered by the service provider. Although, it would tie more resources and operating personnel in the company.

#### 5.1.1 Analysis of Using Criteria Category 'Scope of Services'

This option would need shipping services from Finland to Germany from the logistics service provider company. Warehousing is not needed from the logistics service provider because it's managed by the case company itself on its headquarters. The case company wants to offer two shipping options to Germany, where the customer can decide which one is more convenient for him.

Logistics service provider 1 offers warehousing and transporting service across EU-area and they have started to expand their small to mid-sized delivery services especially to Germany. Pick-ups from Iisalmi should be scheduled weekly by Posti which is their biggest partner in Finland in logistics and then delivered to their export terminal in Vantaa where the products would be then forwarded to Germany. They offer two methods for shipping, regular for standard deliveries and express for faster deliveries.

Logistics service provider 2 offers also warehousing and transporting services within the EU-area so they could offer solution to this channel alternative. They offer only one method of shipping to Germany.

Logistics service provider 3 offers only shipping solutions of logistics services so this channel alternative would be the only considered option for their operation. They offer two methods for deliveries, economy express for standard deliveries and express for faster deliveries.

### 5.1.2 Analysis Using Criteria Category 'Cost'

For the case company, the biggest cost saving in this channel alternative is that there would be no external warehousing by the service provider. This channel alternative would only bring costs by using the parcel services when delivering products to customers if the volumes would not increase to unbearable levels in the warehousing. The sales forecast has been made with the marketing department for the first years and the current warehousing capability in Iisalmi can withstand these two options of estimated deliveries. Although, this option would probably need the case company to hire more personnel to handle the increased levels of warehousing when the operation has started to enlarge. Each of the logistics provider's states that there will be no extra charge when picking up the products from the case company.

Logistics service provider 1 suggests that there is difficult to get a packet deal for the first shipping option because its rather low but their Euro Connect land cargo option would be suited for this option. Requested delivery time in two days would be only suitable in their express shipping option which is more expensive than the regular courier service.

Logistics service provider 2 offers two prices for these two options but the requested delivery time is nevertheless the same.

Logistics service provider 3 will offer express service which is cheaper for products which weight is under 5 kilograms but economy service is typically cheaper in the total costs

### 5.1.3 Analysis Using Criteria Category 'Quality'

The shipping tracking number is needed that the customer can check the status of the order and shipment and it gives a comprehensive image of the service for the customer. For reverse logistics functions such as warranty issues, the product number is

essential. This is the procedure how it can be traced in the case company and critical technical specifications related to the product can be accessed.

Logistics service provider 2 suggests that the web-distributors platform will usually handle the delivering of delivery information for the customer. This is typically collected in the ordering phase in the web-distributors service. If not, this can be constructed to the application if the case company wishes so.

Logistics service provider 1 states that the delivery tracking is a standard feature in their Express-line of delivery methods. However, this feature can be possible only when the shipment has been scanned in the import terminal in Germany. Delivery confirmation is sent automatically when the order is made by using their delivery network.

Logistics service provider 3 doesn't offer tracking options for the customer as a part of their services. In warranty or return issues the service provider offers first pick-up from the customer or he can alternatively choose to drop it to their nearest service point. Return bill of consignment can be coordinated from the case company by the service provider to the customer for returns.

#### 5.1.4 Analysis Using Criteria Category 'Flexibility'

When the manufacturing and warehousing are done under the same roof, this gives good capabilities for the case company in terms of service flexibility and speed. Requests can be handled quickly and easily. If there is a need for one specific product, it can be made in a quite short time for the customer. However, delivery times to Germany would be longer by the logistics service provider if the warehousing would be located here.

Logistics service provider 1 offers two ways of shipping products in this size category. First is their regular service in the given time frame of 6 days. Second is their Express line of shipping options where the delivery time and costs varies depending on the date and speed of delivery. This can be fitted in the given time frame of two days. This option gives a better and more comprehensive options for the customer to choose from and he is not restricted to only one.

Logistics service provider 2 offers only one type of shipping from Finland to Germany within the time window of three days, so this option limits the suggested two options given by the case company. However, they suggest that this channel alternative would bring one additional day for the delivery to Germany and this would sum up to four days for delivering the product for the customer.

Logistics service provider 3 offer two different services: First is the basic service express which will provide shipping for the product to the destination in 1-2 days. Second is the economy express which will provide shipping for the product in 2-4 days depending on the delivery address location. What is convenient that the first option of the case company's products will fit the weight limits of express service and it would not bring additional costs for faster delivery.

#### 5.1.5 Analysis Using Criteria Category 'IT-Solutions'

In this channel alternative, the logistics service provider won't need to link their IT-system to the case company's own system regarding warehousing, because the warehousing operation is handled by the case company itself and it won't require modifications. The service provider would act as a courier and deliver the products to Germany. However, the operation of the web-distributor affect how the orders are made, because some couriers offer a fixed price while others service calculates it on depending on various circumstances such as time and destination.

Logistics service provider 1 won't offer an IT-system which automatically calculates the best price based on the circumstances.

Logistics service provider 2 also offers a courier service with fixed price where the customer can't make any adjustments.

Logistics service provider 3 suggests that the web-distributor should link their web-platform to their own information system so that the customer would always get the right price and shipping options for their purchases. This have been done previously and their own system has been developed in a way that it can be easily linked to many platforms what these web-distribution stores commonly use. This system prints shipping label automatically when the order is complete so the shipping itself is very straight forward and easy.

The service provider will also provide shipping with that selected shipping option immediately and possible during the same day if it has been done during the time window defined for that current day. However, the service provider doesn't offer feature that the product number can be delivered to the data system.

#### 5.1.6 Analysis Using Criteria Category 'Delivery Capability'

The amount of deliveries by the case company is rather low for the web-distributors estimated volumes for the first years of its operation. This alternative is effective based on these volumes, but however space is limited in the current warehouse and it can't withstand it if the amounts would increase much in the future. The current size is still not an issue for these estimated volumes though.

The warehousing is much easier to operate within the house when there isn't third party involved in the process. All the necessary information related to the products would be kept inside the case company and it would be so forth much easier to process. This information would contain returns, reclamations, warehouse inventories and possible delivery losses. Nor the data systems won't need integration or modifications with other partner and the information flow related to warranty-issues, reclamations and product losses are kept in the same system and based on this; they are much easier to supervise and act upon if necessary.

Logistics service provider 1 states that delivering these amounts won't be an issue and their product packages can be tailored for these deliveries. The first amount of 100 products per year would be delivered with euro connect land cargo option. For the second delivery amount of 1000 deliveries per year could be offered with a tailored package with a fixed price.

Logistics service provider 2 recommends that this would be optimal solution for warehousing for this web-distributors operation, especially in lower volumes. It's easier to organize and execute warehousing and shipping from this location compared to bigger countries, mainly because the competition is much bigger and demanding for smaller enterprises.

Logistics service provider 3, suggests that it would be smartest to keep warehousing in Helsinki, based on these estimated volumes and sales when the maximum amount of shipments would be 4 at most. With this kind of product flow the warehousing especially in foreign location would cause too much unnecessary procedures and costs. If the volumes would increase in the future, other options should be considered seriously.



## 5.2 Analysis of Channel Alternative 2, Using Warehousing in Finland by the Logistics Service Provider

This section summarizes and describes the channel alternative 2, using warehousing in Finland by the logistics service provider. The warehousing would be located somewhere in Finland, where the logistics service provider would base their operation. Customers would make the orders with the web-distributor and from the warehouse the products would be shipped to Germany to the end customers organized by the service provider.

This method is advantageous if the products are manufactured in Finland and then shipped to other locations. Southern area in Finland, especially harbor cities such as Helsinki is one of the biggest areas for warehousing because it interacts as hub for transport services and that is where the biggest logistics providers have their main offices and warehouses. Many of these are located near the Helsinki-Vantaa airport. The transporting is easy to arrange from this location because the biggest part of air cargo in the country leaves from there frequently.

### 5.2.1 Analysis Using Criteria-Category 'Scope of Services'

This channel alternative would need warehousing services in Finland and shipping services from Finland to Germany from the logistics service provider. Case company would outsource the services which they have been previously done by themselves. Selection of the warehouse location is also relevant because it needs to be in convenient spot for transporting.

Logistics service provider 1 offers warehousing solutions in Finland, shipping and customer service services as a part for their operation so this option would be beneficial for them and the case company. The warehousing for this service would be in eastern part of the country in a city called Hamina. From there the shipments would be delivered to the service providers own export terminal in Helsinki-Vantaa airport, where they would be then forwarded to Germany.

Logistics service provider 2 offers also warehousing solutions in Finland, shipping and customer service services within the EU-area by their logistics partners so this channel

alternative would fit well to their offering. The warehouse would be in Vantaa, Finland where the shipments would be delivered to Germany for the customers.

Logistics service provider 3 doesn't offer warehousing services and they are only focused on the shipping services so this option excludes them from this channel alternative and they recommend that it shouldn't be considered as a solution for the web-distributors operation.

### 5.2.2 Analysis Using Criteria Category 'Cost'

This channel alternative would bring warehousing costs for the case company because it is no more arranged by them so they would have to outsource the service to a third-party logistics provider. Location of the warehouse also affects the price of the service among other areas such as flexibility.

Logistics service provider 1 offers warehousing services in Hamina, where they have one of their biggest warehouses in the country. From there the orders would be delivered by their biggest partner in Finland, Posti to the service providers export terminal in Helsinki-Vantaa.

Logistics service provider 2 offers warehousing services in Vantaa, where the main warehouse of this company is located relatively close to the Helsinki-Vantaa airport.

### 5.2.3 Analysis Using Criteria Category 'Quality'

For reverse logistics functions such as warranty issues, it is critical that there are no unnecessary steps or costs for the customer to deliver the faulty product back to the manufacturer. Some service providers offer pick up services from the customer where others instruct to deliver the product to their nearest service point where it is forwarded back to Finland.

Service provider 1 offers materials for safe packing in their service points across the country. From there they are delivered with express shipping back to Finland to ensure fast delivery.

Service provider 2 offers pick-up services from the customer and the specified expense for that service is paid by the manufacturer in the return process.

#### 5.2.4 Analysis Using Criteria Category 'Flexibility'

If the warehousing would be arranged by the logistics service provider, it would bring the products closer to the customers and then shorten the delivery time. The location is very essential regarding flexibility because from there the service provider delivers the products to Germany.

Logistics service provider 1 recommends using their warehousing in Hamina which is rather close to their export terminal in Helsinki-Vantaa airport. The location would reduce the delivery time approximately by one day. However, the location won't be able to provide the same level flexibility on last minute orders or alterations compared than if it would be located next to the airport.

Logistics service provider 2 recommends using their just constructed new main warehouse in Vantaa, which is relatively close to Helsinki-Vantaa airport. For flexibility, this offers better possibilities than if the warehouse would be located elsewhere in Finland. The window for new orders closes at 11:00 am but changes such as deletions for the ordering process can be made after this.

#### 5.2.5 Analysis Using Criteria Category 'IT-Solutions'

In this channel alternative, the service provider should be able to establish a connection between with the case company and the web-distributor. Then the service provider should be able to read and handle the orders and make the deliveries based on that information. Regarding to the case company's products, it's demanded that the product codes are visible and can be read individually in each delivery and that information must be then delivered to the case company's database. This option would take out warehouse managing by the case company and it would not tie resources for that. Inventory management would be handled completely by the service provider.

Service provider 1 states that the product codes can be scanned in the warehouse operator and then brought back to the customer company's own database for easy access to the data of that specific product. IT-integration can be done with their warehousing management system in Hamina.

Service provider 2 states that this is considered as a standard feature in their warehousing operation system. This system has been developed for easy integration with many databases and applications. There are two possible ways to make this possible for sharing information between the two companies. Full integration would bring additional expenses but then it would take off the workload off from the customer company or a partly integration which is included in the basic price of warehousing and it would be more suitable for this project.

#### 5.2.6 Analysis Using Criteria Category 'Delivery-Capability'

The main reason to have warehousing somewhere elsewhere would be that the distances for deliveries would be shorter compared that If it would be in Finland. Also, the case company's warehousing space is very limited in Iisalmi so they are not able to keep a large buffer ready for big amount of orders. When the warehousing is outsourced, this could keep a larger buffer to answer for the demand. There also wouldn't be any delays in the delivering process if stock would run out quickly.

There should be a certain buffer in the warehouse to answer the ongoing demand for the products. The supplements should be done frequently to the warehouse so that the demand could be answered on time and there would be unnecessary delays in the delivery process. Logistics service provider 1 and 2 suggests that there should be triggers installed when the inventory level becomes too low so it would send automatically an order message back to the manufacturer which would let them to prepare to send in more supplements to the warehouse.

Logistics service provider 1 suggests that supplements to the warehouse should be calculated with a formula based on previous experiences that if there would be 100 deliveries then there should be 9 in the buffer at the warehouse. Or if there would be 1000 deliveries, then there should be 84 in the buffer at the warehouse. When the warehousing level reduces to the minimum amount specified by the customer, this should trigger an alarm for more supplements. Their warehouse in Hamina would be able to keep the suggested case company amounts in stock.

Logistics service provider 2 also suggests installing triggers to react to low levels in the warehouse buffer. It's usual that the customer company sends in the supplements when the levels have been surpassed to that suggested level.

### 5.3 Analysis of Channel Alternative 3, Using Warehousing Outside Finland by the Logistics Service Provider

This section describes and summarizes the channel alternative 3, warehousing outside Finland by the logistics service provider. Selection of the warehouse location is also very necessary because it needs to be in convenient spot for transporting. This option is typically more convenient when the volumes are rather high and products need to be delivered in large quantities. When the demand is high, it is easier when the warehousing is closer to the customer and there won't be delays in the delivering process. For higher demand, there must be a certain buffer in the warehouse to answer to the demand. And regular supplements must be organized to keep the buffer on the suggested level.

#### 5.3.1 Analysis Using Criteria Category 'Scope of services'

This option will need both warehousing outside of Finland and shipping services from the logistics service provider. Warehousing would be in Germany so the deliveries would be handled by the service provider there. The warehouse location is critical in a big country with long distances. From the warehouse the shipments are to be delivered to the customers by the service provide across the country.

Logistics service provider 1 offers shipping and warehousing solutions across the EU-area by themselves so this channel alternative would fit to their services well.

Logistics service provider 2 offers shipping and warehousing solutions within the EU-area with their logistics partners so they can provide a solution to this channel alternative.

#### 5.3.2 Analysis Using Criteria Category 'Cost'

This channel alternative would bring biggest costs of all the channel alternatives for the case company because they need to buy the warehousing service from a third-party logistics service provider in Germany. In a country with bigger markets this is very challenging for a smaller company because competition is tighter and prices for these services are higher as well. On the other hand, distances from the warehouse would be shorter for the customers and this would reduce the overall shipping costs.

Logistics service provider 1 states that this is the most expensive alternative out from the three alternatives and based on the estimated sales volumes this shouldn't be considered as a serious option. To cover the costs for the warehousing, the volumes should be considerably much higher and for the current estimates they are not able to give a decent price offer. After the operation has settled down in a few years and the case company has stabled its position in the new market, this channel alternative should be taken under evaluation again.

Logistics service provider 2 comments that they are not able to provide discount price for their services based on these estimated volumes and this channel alternative wouldn't be the optimal solution for the web-distributors operation. For first years when the case company's operation is relatively small, the warehouse operation in another country is difficult to manage. However, this channel alternative should be considered again in the future when the levels have increased to more interesting levels. They also stated that they have been managing similar solutions in their warehouses in Finland and when the operation has settled, it's easy to move the entire warehousing process to another country where the actual operation is based on.

Logistics service provider 3 don't offer warehousing services themselves but their representative commented that this channel alternative would be too difficult to manage because of the estimated low levels for the first years. On their behalf, this channel alternative shouldn't be considered for the web-distributors operation.

### 5.3.3 Analysis Using Criteria Category 'Quality'

Tracking options for this channel alternative should be relatively the same than if the warehouse would be in Finland. Reverse logistics functions such as returns and warranty issues would be handled in the service providers service points, where they would be forwarded back to Finland.

Like mentioned in the same chapter before, logistics service provider 1 has tracking number option in their express line of services as standard option. For returns they have service points widely spread across the country, so the picking and sending of the products would be relatively easy for in sake of the customer. For warranty and return issues, the products are send back in express shipping with no extra price to ensure fast delivery.

Logistics service provider 2 has tracking number system standard in their service. They also service points in Germany but not in the same variety than the provider 1. From these locations, the returns are coordinated back to Finland.

#### 5.3.4 Analysis Using Criteria Category 'Flexibility'

This channel alternative would bring the warehouse and the products closer to the customers in Germany so it would reduce the actual delivery time considerably. The deliveries could also be scheduled easier by the service provider within the same country than if they would be in Finland.

Logistics service provider 1 states that this channel alternative would reduce the shipping time with regular shipping service approximately by 2-3 days compared to if the warehousing would be in Iisalmi or Hamina.

Logistics service provider 2 states that this warehousing solution would shorten the deliveries approximately by 1-2 days compared to if the warehousing would be in Iisalmi or Vantaa.

#### 5.3.5 Analysis Using Criteria Category 'IT-Solutions'

In this channel alternative, the service provider should establish a connection with the case company and the web-distributor. Then the service provider should be able to read and handle the orders and make the deliveries based on that information. Regarding to the case company's products, it's demanded that the product codes are visible and can be read individually in each delivery and that information must be then delivered to the case company's database. This is very essential step in the warehousing operation and information exchange with the case company.

Service provider 1 confirms that this can be done constructed in their warehousing management system.

Service provider 2 states that this is a standard feature in their warehousing management system and the information on case company's products can be easily brought to their own database.

### 5.3.6 Analysis Using Criteria Category 'Delivery Capability'

When the sales volumes are high and flow of material is fast, its recommended to have a warehousing near to the location where products are sold. This results in faster responses to the continuous demand and it reduces the risks of possible delays in deliveries. The demand for the products is calculated by a certain buffer in the warehousing levels and that it can be quickly responded. Warehousing operator creates a specified trigger that when the threshold is too low, the manufacturer must send in more supplements. This channel alternative would give the fastest deliveries to German customers and the prices for deliveries would be consequently cheaper out of all the channel alternative options



## 5.4 Table of Evaluation for Three Channel Designs

This section explains the evaluation of the three logistics service providers. An evaluation table is made for each of them. Grading scale is based on the analysis which was explained earlier in this chapter. The grading is given from one to four points, where the four is the best score. For example: the lowest score in cost of service is the most expensive option and the highest score is the cheapest one. All affecting sectors such as the expenses of outsourced warehousing services are included in the grading.

### 5.4.1 Evaluation Table for Logistics Service Provider 1

The Table 5 below illustrates and defines the analysis for Logistics service provider 1 on these 3 different channel alternatives.

Table 5. Table of evaluation for Logistics Service Provider 1

	ALTERNATIVE 1, Warehousing in Iisalmi	ALTERNATIVE 2, Warehousing in Finland	ALTERNATIVE 3, Warehousing outside of Finland
Criteria 1, Scope of services	**	***	-
Criteria 2, Cost of services	**	*	-
Criteria 3, Delivery Capability	**	***	-
Criteria 4, Flexibility	****	**	-
Criteria 5, Quality of service	***	***	-
Criteria 6, IT-solutions and integration	*	**	-
<b>SUM OF POINTS / PROVIDER / CRITERIA</b>	<b>14</b>	<b>14</b>	-

As seen from table 5, the alternative 1 and 2 got fourteen points out of the three designs. Alternative 3 was not evaluated because the case company representatives stated that starting this channel design is not possible by using their service, based on the low level of volumes which can't cover the actual costs of the service. There difference between alternative 1 and 2 score is same, but when the weights are given to the evaluation criteria with case company representatives the difference is usually much bigger.

For criteria 1 in channel alternative 1, this service provider got two points because only service which is required for this alternative is transporting and for alternative 2, it got three points because they offer warehousing and transporting services which is required for this channel design. For criteria 2, this service provider got one point because the cost for the transporting service was considerably much higher compared to the other service providers. For warehousing in Hamina, the costs are relatively same than the competitors in Vantaa, but the total shipping costs to Germany are much higher.

For criteria 3, this service provider got the two points in channel alternative 1 and three points in alternative 2 because the buffer for deliveries could be higher if the warehousing wouldn't be in the case company where space for warehousing is more limited. For criteria 4, this service provider got 4 points in alternative 1 because they offer two shipping options for the customer but two points in channel alternative 2, because the location of the warehouse won't offer similar flexibility than compared to competitor's warehouse, which is located closer to the airport from where the orders are delivered to Germany. For deliveries, this service provider includes one attempt which is the same with other service providers and so forth it gives no competitive advantage for any of them.

For criteria 5, this service provider got three points in channel alternatives 1 and 2, because they offer shipment tracking as a standard option on express deliveries, but not on the standard deliveries. For reverse logistics functions, this service provider doesn't offer pick-up service but they send products back to Finland with express shipping for fast shipments. For criteria 6, this service provider got one point in channel alternative 1 because their computer system doesn't calculate best price for the customer in the ordering process. It got two points in channel alternative 2, because links in the database systems of warehousing between the service provider and case company can be built in their application. Regarding the case company products, this is very important feature because the product codes must be scanned within the warehouse that all the specific products can be tracked back later in the case company.

## 5.4.2 Evaluation Table for Logistics Service Provider 2

The table 6 below illustrates and defines the analysis for logistics service provider 2 on these three different channel alternatives.

Table 6. Table of evaluation for logistics service provider 2.

	ALTERNATIVE 1, Warehousing in Iisalmi	ALTERNATIVE 2, Warehousing in Finland	ALTERNATIVE 3, Warehousing Outside of Finland
Criteria 1, Scope of services	**	***	-
Criteria 2, Cost of services	***	*	-
Criteria 3, Delivery Capability	**	***	-
Criteria 4, Flexibility	***	**	-
Criteria 5, Quality of service	****	****	-
Criteria 6, IT-solutions and integration	*	***	-
<b>SUM OF POINTS / PROVIDER / CRITERIA</b>	<b>15</b>	<b>16</b>	<b>-</b>

As seen from the table 6, Alternative 1 got fifteen points and alternative 2 got sixteen points. Alternative 3 wasn't evaluated because the company representative stated that this alternative is almost impossible to start in Germany, because the competition is much tighter and the expenses are higher compared if the same service would be done in the case company or elsewhere in Finland.

For criteria 1, this service provider got the 2 points in channel alternative 1, because transporting is the only service which is needed and for alternative 2 it scored 3 points because they offer warehousing and transporting services, which is required for this channel alternative. For criteria 2, this service provider got three points in channel alternative 1, because the price for the shipping was in the middle of the comparison and one point for alternative 2, because the outsourced warehousing would bring additional costs for the case company. The actual costs for warehousing in Finland are relatively same than with service provider 1, but the shipping is far less expensive.

For criteria 3, the service provider got two points in channel alternative 1 and three points on channel alternative 2 because the buffer for deliveries would be much higher in the warehouse arranged by the service provider and not the case company where the space for warehousing is more limited. The volumes for first years are low but if they would increase in the future, this would probably give difficulties for the case company warehousing and then this criteria category should be re-evaluated. For criteria 4, this service provider got three points in alternative 1 because they offer one shipping option to Germany, which is 3 days from Vantaa and 4 days from Iisalmi. This gives no options for the customer to choose from slower and cheaper or faster and more expensive solutions what other competitors have. The location of the warehouse is essential in Finland and gives better solutions for last minute orders or deletions, because of the wider time window than competitor has. The company has paid attention to this and alterations can be done easier than with service provider 1.

For criteria 5, this service got four points in both channel alternatives because they offer shipment tracking for the customer when the order has been made. Confirmation message system to the customer's e-mail or cell phone can be built in their software application. They also offer pick-up service from the customer in the case of returns or warranty issues. For criteria 6, this service provider got one point in alternative 1, because their computer system doesn't calculate the best price for customer and it provides only fixed rates. For alternative 2 it got 3 points because their web-platform has been developed for warehousing with features such as linking database with case company's own information system. This is essential for case company's products where product codes must be scanned and brought to their own database.

### 5.4.3 Evaluation Table for Logistics Service Provider 3

The table 7 illustrates and defines the analysis for logistics service provider 3 on the three different channel alternatives.

Table 7. Table of evaluation for logistics service provider 3.

	ALTERNATIVE 1, warehousing in Iisalmi	ALTERNATIVE 2, warehousing in Finland	ALTERNATIVE 3, warehousing outside of Finland
Criteria 1, Scope of Services	**	-	-
Criteria 2, Cost of Services	****	-	-
Criteria 3, Delivery Capability	**	-	-
Criteria 4, Flexibility	****	-	-
Criteria 5, Quality of Service	*	-	-
Criteria 6, IT-Solutions and Integration	***	-	-
<b>SUM OF POINTS / PROVIDER / CRITERIA</b>	<b>16</b>	-	-

As seen from the table 7, this logistics service provider got sixteen points on the first channel alternative. Alternative 2 and 3 couldn't be evaluated because the service provider doesn't offer these services neither in Finland or Germany. The company's core competence is only in the transporting services.

For criteria 1, this service provider got 2 points because they offer transporting services within Europe what is needed for this channel alternative. For criteria 2, this service provider was the most cost-effective out from all the service providers which were selected for evaluation. For criteria 3, this service provider got 2 points like the competitors, because case company warehousing offers only limited buffer in warehousing for deliveries. For criteria 4, What is noteworthy that the boxes which don't exceed the weight limit of 5kg express limits so the smaller choice of case company's products can be sent with that faster service and it won't bring any additional charges for the customers.

For criteria 5, this service provider got one point, because they don't offer product code scanning system neither confirmation message system for the customer in the ordering process. For criteria 6, they have developed their own application which can be linked to many online platforms, which automatically seeks the best price of delivery for the customer.

#### 5.4.4 Summary of Comparison Table for Each of the Logistics Service Providers

The table 8 below, illustrates the scores of all three logistics service providers on the three different channel alternatives.

Table 8. Summary table of comparison for each of the logistics service providers.

	ALTERNATIVE 1, Warehousing in Helsinki	ALTERNATIVE 2, warehousing in Finland	ALTERNATIVE 3, Warehousing Outside of Finland
LOGISTICS SERVICE PROVIDER 1	14	14	-
LOGISTICS SERVICE PROVIDER 2	15	16	-
LOGISTICS SERVICE PROVIDER 3	16	-	-

As seen from table 8 the three logistics service providers got different scores, but the variety is not that wide. This will be changed in the next chapter where the weights for the criteria are given and complete new evaluation is made. Logistics service provider 1 got similar scores in channel alternative 1 and 2, logistics service provider 2 got best score from channel alternative 2 and service provider 3 got the best score from channel alternative 1. Alternative 3 wasn't scored at all because all the representatives from each service providers didn't want to consider this option as a cost-effective or reasonable solution for this project.

As this table of comparison gathers up the score for each service provider and channel alternatives, it can't be regarded as the outcome of this Thesis, because the weights must be given for the evaluation criteria. Every criterion is not regarded on the same level and they must be thoroughly analyzed which affect the most to the selection of the channel alternative and the service provider. The weights are decided in a workshop discussion with the author and the case company key stakeholders.

## **6 Making selection out of the alternatives based on above evaluation in discussions with case company key stakeholders**

This section gathers up the elements of final evaluation for the channel alternative and the logistics service provider into the final proposal for the case company.

### **6.1 Overview of the Proposal Building Stage**

Each service provider and channel design has been scored in the last chapter based on the analysis of suitability. The weights for the evaluation criteria are given in this chapter. The data for this chapter has been gathered in data 2, a workshop with the case company's decision makers.

With the help of the analysis in the previous section, the basic points were given for each of the alternatives and service providers. By having a workshop with case company stakeholders, the most important areas were identified and then given weights for the final analysis. In the next section, the weighted average is calculated individually to see which alternative and service provider is the most suitable for this project.

### **6.2 Giving Case Company Weights to Above Evaluation and its Criteria**

The evaluation criteria were found during the literature review and the most important and used ones were selected for this Thesis. These were: scope of services, cost of services, delivery capability, flexibility of operation, quality of services and IT-solutions and integration. The case company's web-distributors business activity for the first years has been pre-casted with the marketing team and it has been regarded as the foundation of evaluation.

The evaluation score was presented at data 2 information collection phase with the case company decision makers and during that the weights for the evaluation criteria were decided.

Table 9 shows the given weights to evaluation criteria

Table 9. The Weighted evaluation criteria for 3<sup>rd</sup> party logistics services

100%	<b>Evaluation Criteria for 3<sup>rd</sup>-Party Logistics Services</b>
5%	Scope of Services (Selviaridis, 2015: 6)
50%	Cost of Services (Alktahib, 2015: 105)
5%	Delivery Capability (Alktahib, 2015: 105)
10%	Flexibility (Selviaridis, 2008: 6)
20%	IT-solutions and Intergration (Vaidyanathan, 2008)
10%	Delivery Capability (Vaidyanathan, 2005)

As seen from the table 9, the weights are presented in percentage out of 100% in the left side of the table. Scope of services was rated at 5%, cost of services was rated at 50%, delivery capability was rated at 5%, flexibility in operation was rated at 10%, Quality of service was rated at 20% and IT-solutions and integration was rated at 10%.

Not all criteria are regarded on the same level or perspective and each one has typically a different meaning for different industries and companies. This typically changes the whole outcome in the final evaluation table. The ground score can be same on every alternative, but after the score average is calculated the optimal solution can be discovered easily. After the weights are given, new evaluation table is made where the score average is given for each channel alternative and service provider. It is calculated with a formula where the weight of the criteria is timed with the points given in the evaluation and summed up together and the divided with the sum of evaluation criteria.

*The weighted average formula is typically used to calculate the average value of set of numbers with different levels of relevance. The relevance of each number is called its weight. The weights should be represented as a percentage of the total relevancy. Therefore, all weights should be equal to 100% or 1. (Finance Formulas, 2017)*



By following this formula, the most important areas for the case company can be emphasized and therefore the evaluation can proceed to the desired direction.

### 6.3 Giving Weights to Evaluation Criteria for Logistics Service Provider 1

The table of evaluation 10 shows the score average of service provider 1 and the two channel alternatives calculated with the weighted average formula.

Table 10. The Weighted Table of evaluation for logistics service provider 1

Weighted evaluation criteria	ALTERNATIVE 1, Warehousing in Iisalmi	ALTERNATIVE 2, Warehousing in Finland	ALTERNATIVE 3, Warehousing outside of Finland
Criteria 1, Scope of Services 5%	2 * 0,05	3 * 0,05	-
Criteria 2, Cost of Services 50%	2 * 0,50	1 * 0,50	-
Criteria 3, Delivery Capability 5%	2 * 0,05	3 * 0,05	-
Criteria 4, Flexibility 10%	4 * 0,10	2 * 0,10	-
Criteria 5, Quality of Service 20%	3 * 0,20	3 * 0,20	-
Criteria 6, IT-Solutions and Integration 10%	1 * 0,10	2 * 0,10	-
<b>Score Average of the Channel Alternative</b>	<b>2,30</b>	<b>1,80</b>	-

As seen in table of evaluation 10, the alternative 1 got 2,30 score average and the alternative 2 got 1,80 score average. Channel alternative 3 wasn't scored as it was explained earlier in this chapter. In the first evaluation table of previous chapter both channel alternatives got the same score, but after the weights were given for the evaluation criteria, this changed the whole outcome. result can be interpreted in a way that the alternative 1 would be the more suitable solution out of the two channel alternatives for the case company. Cost of services had the biggest influence on the scoring and the quality of the service was the second. Scope of services and delivery capability had the lowest influence and they are regarded pretty much the same on each of the logistics service providers.

#### 6.4 Giving Weights to Evaluation Criteria for Logistics Service Provider 2

The table of evaluation 11 shows the score average of service provider 1 and the two channel alternatives calculated with the weighted average formula.

Table 11. The Weighted table of evaluation for logistics service provider 2.

Weighted evaluation criteria	ALTERNATIVE 1, Warehousing in Iisalmi	ALTERNATIVE 2, warehousing in Finland	ALTERNATIVE 3, warehousing outside of Finland
Criteria 1, Scope of Services 5%	2 * 0,05	3 * 0,05	-
Criteria 2, Cost of Services 50%	3 * 0,50	1 * 0,50	-
Criteria 3, Delivery Capability 5%	2 * 0,05	3 * 0,05	-
Criteria 4, Flexibility 10%	3 * 0,10	2 * 0,10	-
Criteria 5, Quality of Service 20%	4 * 0,20	4 * 0,20	-
Criteria 6, IT-Solutions and Integration 10%	1 * 0,10	3 * 0,10	-
<b>Score Average of the Channel Alternative</b>	<b>2,90</b>	<b>2,10</b>	-

As seen in table of evaluation 11, the alternative 1 got the score average of 2,90 and the alternative 2 got score average of 2,10. The alternative 3 wasn't scored at all as it was explained earlier in this chapter. As seen in the first table of evaluation, the alternative 2 got better score than the first but after giving weights, it gives a totally new perspective to the whole evaluation. The result means that channel alternative 1 would be the more suitable solution out of the two options for the case company. The biggest influence on the score was cost of services and the quality of services. The quality of services on both channel alternatives ranked the best score out of the all possible choices.

## 6.5 Giving Weights to Evaluation Criteria for Logistics Service Provider 3

The table of evaluation 12 shows the score average of service provider 3 and the two channel alternatives calculated with the weighted average formula

Table 12. The Weighted table of evaluation for logistics service provider 3.

Weighted Evaluation criteria	ALTERNATIVE 1, Warehousing in Iisalmi	ALTERNATIVE 2, Warehousing in Finland	ALTERNATIVE 3, Warehousing outside of Finland
Criteria 1, Scope of services 5%	2 * 0,05	-	-
Criteria 2, Cost of services 50%	4 * 0,50	-	-
Criteria 3, Delivery Capability 5%	2 * 0,05	-	-
Criteria 4, Flexibility in operation 10%	4 * 0,10	-	-
Criteria 5, Quality of service 20%	1 * 0,20	-	-
Criteria 6, IT-solutions and integration 10%	3 * 0,10	-	-
<b>Score Average of the Channel Alternative</b>	<b>3,10</b>	-	-

As seen in table of evaluation 12, this logistics service provider got the score average of 3,10 in channel alternative 1 and the two others weren't evaluated because this service provider don't provide services required for those channel designs. In the first evaluation table this was the highest score and after the weights were given, it remained so. The biggest influence on the score was the cost of services where this service provider and channel alternative had the most cost-effective solution out of the all possible choices. The second was flexibility which it had also the best possible score out of all choices.

## 6.6 Summary Table of Comparison

The table 13, summary of comparison shows the summary of comparison of all channel alternatives and the logistics service providers selected for this Thesis. The best scored and most optimal solution is highlighted in green.

Table 13. The Summary of comparison table for each of the logistics service providers

	ALTERNATIVE 1, Warehousing in Iisalmi	ALTERNATIVE 2, Warehousing in Finland	ALTERNATIVE 3, Warehousing Outside of Finland
PROVIDER 1	2,30	1,80	-
PROVIDER 2	2,90	2,10	-
PROVIDER 3	3,10	-	-

As seen in the table 13, the summary of comparison the best scored channel alternative out from the all was alternative 1, warehousing in Iisalmi, arranged by the logistics service provider 3. The differences in scoring between alternative 1 and 2 were quite big and the selection is so forth relatively easy to make from the two. Differences in scores between service providers were in a range of 1,20 where service provider 1 got the lowest score. For channel alternative 2, logistics service provider 2 got the best score if it would be wanted to consider as a potential solution in the future.

## 6.7 Discussion of Alternative 1

Interviewee 2, The Account Manager of logistics service provider 3 states that the most cost-efficient way of handling warehousing would be in the case company's location in Iisalmi. The maximum amount of deliveries per week would be 4 based on these volumes and if it is not difficult to manage, the warehousing for the web-distributors operation be done like this. If the volumes would increase, warehousing in elsewhere Finland or in Germany should be considered in the future.

Out of the three suggested channel designs, this one has been suggested the most during the interviews with representatives from all the logistics service providers and because of the analysis and scoring of this Thesis. It has been calculated and planned that the warehousing can be operated for these volumes for the web-distributors operation. Although, the space is very limited because the whole operation of the case company is done under the same roof so there can't be a huge buffer for deliveries. There are plans for a new layout in the operating area where assembly lines for the monitors are also located. After the new layout has been designed and organized, it would most likely leave more room for extra warehousing capabilities. Depending how this would come out in the future, the case company would probably need to hire more personnel to operate the increasing operation of the warehouse, but the current situation can allegedly handle the levels of the web-distributors operation.

When all the products are manufactured under the same roof, this gives excellent capabilities regarding flexibility. Requested items can be manufactured quickly for orders which are in a hurry and order cancellations or alterations can also be made instantly.

The main benefit for this channel design would be that it would remain as the most cost-effective solution out from the three. This channel design arranged by the service provider 3 got the best score of the analysis of this Thesis. After the weights for evaluation criteria were given, it stabilized its position as a clear winner. They have also provided services previously for the case company and the results have been good regarding to interviews with the case company personnel and it can be suggested to handle the transporting services for this project.

## 6.8 Discussion of Alternative 2

The main benefits for this channel design would be the increased flexibility and delivery capability offered by the outsourced warehousing service. The main disadvantage would be the increased costs for outsourcing the warehousing functions for a third-party logistics service provider. Comparing the results of the analysis, logistics service provider 2 would be more suitable for arranging the warehousing service for this channel alternative. Even though, the results of the analysis and scoring still suggested that the channel alternative 1 would be the optimal solution for this project.

But when the amount of deliveries for the web-distributors has stabilized, the delivery capability of this channel alternative is considered as far better compared to the alternative 1, because the buffer for deliveries can be kept much higher in the warehouse supplied by the service provider. If the amount of orders would end up as too big burden of the warehousing operation in the case company, this channel alternative should be considered as a solution for this project.

Integrating the IT-systems between the service provider and the case company is an important part in the warehouse operation. Both service providers 1 & 2 have been providing solutions in the past regarding warehousing IT-systems, but service provider 2 offers full or partly integration, which one would suit the client company best. This gives the client company a possibility to choose the more cost effective or more comprehensive solution. The basic costs for warehousing are somewhat same between the two service providers but the transporting costs are much higher when arranged by the service provider 1. Location of the warehouse is also more convenient for service provider 2 regarding flexibility. This is also why service provider 2 scored better in the evaluation phase than service provider 1.

For new market area, a new comer has always to stabilize its position and sales. Typically, second and third year can double or even triple the revenues and when this action has taken its place, this channel alternative should be re-evaluated and re-considered for the web-distributors operation.

## 6.9 Discussion of Alternative 3

Interviewee 1, The Sales Manager of logistics service provider 2 recommended that based on these estimated volumes for the first years of the web-distributor, it's not reasonable to start warehousing in Germany. This result from that the volumes are rather low and for a big international logistics company this would be unprofitable and it would tie too many resources for such a small operation. On the contrary, if the volumes would rise to more interesting levels in the future, this would be more effective way to handle warehousing for the web-distributors operation. If this would be the case in the future, the whole warehousing process could be transferred in the way it is operated straight to the new location in the new country. This is the reason why this service provider is not interested in starting this channel alternative. The recommended volumes to start warehousing in this location based on previous experiences would be somewhere between 200-500 000e per each year and the estimated amounts for the case company are nowhere near this figure.

Interviewee 3, The Key Account manager of logistics service provider 1 recommended that it's not cost-efficient to have warehousing in Germany based on these estimated volumes. Germany is a big country with lot of competition so it would bring bigger expenses for the company that it would profit. If the trade would increase in the future, this option should be considered. It's also very important to consider when selecting the logistic service provider that how the operation could be scaled based on its potential behavior. This means that, what kind of actions the supply chain would need to optimize the operation depending how the sales would increase or decrease. Also, this company's other Key account manager stated that the basic costs of warehousing would be too high to consider starting this channel alternative based on the volumes.

Based on the above comments and the analysis of this Thesis, this channel alternative is not considered as an optimal solution for this project. The basic costs would be too high compared to the estimated revenue coming from this project. Regarding the suggested volumes what service provider 2 estimated above, the outcome of first years won't be able to provide those figures

## 7 Discussion and conclusions

This section presents and discusses the results and main conclusions for this Thesis. First part shows the executive summary of the whole project, second part shows the next steps for implementation of the proposal and the last chapter focuses on the evaluation of this Thesis.

### 7.1 Executive Summary of the Project

This thesis focused on finding the optimal channel design out of the three alternatives to implement direct sales in the EU-area within the example of one web-distributor. The challenge was to find an optimal solution for storing and transporting the case company products to the end-users in Germany.

The channel design option was (a) the case company warehousing in its headquarters in Iisalmi, (b) using a logistics partner with warehousing in Finland and (c) using a logistics partner with warehousing outside Finland. Current state analysis was not required for this thesis as this is a project of its own and it is not considered as a part of the case company's main operation. The channel design models were given from the case company and suggested logistics service providers were also recommended from the case company.

The starting point for the case company's web-distributors operation is popular two models from the product family in two different suggested quantities. The marketing area is directed to Germany and the main language for the online service would be German as well. Depending on the success of the operation, other models would be later added to the selection.

Each of the service providers has previous experience with the case company where service provider 3 currently conducts most deliveries within the EU-area. Fourth service provider was also recommended for this project but their representative stated that the EU-area is not in a major part of their operation and they don't provide courier services so they recommended in to turning to the services of other companies in the field.



To find the optimal solution, a list of questions was developed after the literature review with help of the case company personnel and each of the logistics service providers were interviewed for this thesis. Each of them provided recommendations for the optimal solution based on previous experiences and told the costs and capabilities of their service.

Neutral evaluation was made to evaluate each service provider and channel design and based on the interviews each was scored on the table. The first evaluation dropped the alternative 3 out from the possible solutions, because during the interviews each representative stated that this can't be considered as a profitable solution for this project due to the high costs of warehousing. After the first neutral evaluation, the author had a workshop with the case company's decision makers and the criteria for evaluation were weighted individually. After this phase, a new evaluation table was made with the weighted average criteria. As the result of calculated weighted average score the optimal channel alternative and the service provider could be recommended and selected for the web-distributors operation.

Channel design 1 conducted by the logistics service provider 3 was selected as the optimal solution. Before the weighted evaluation, it got the best ground score and after giving weights in stabilized its position as the best solution. The space in the case company's own warehouse is limited but it can handle these estimated levels. If they would increase, the channel alternative 2 should be considered again. The case company has good experiences in the past with the service provider 3, so procedures and methods for transporting are familiar for them, so they wouldn't need any additional advising. Outsourcing warehousing would bring bigger costs for the whole operation of the web-distributor, so channel alternative 2 should be considered and evaluated again in the future if the volumes would increase to higher levels. This alternative would shorten the deliveries for customers approximately by one day as well. Alternative 3 wasn't considered as a possible solution for this project as it was mentioned in the previous chapters based on the interviews. The market is rather narrow for these products and they are not expected to sell in high levels so the revenue for warehousing should be much bigger to cover the costs of this channel alternative.

## 7.2 Next Steps and Recommendations toward Implementation of the Proposal

This subsection contains recommendations for the case company when the web-distributor operation is about to be implemented.

1. Choose a platform for the web-distributor. This wasn't a known factor when this study was conducted.
2. Link the service provider IT-system to the platform; it has been developed in a sense that it's easily integrated to many online platforms.
3. Arrange new and better layout for warehousing in the company to optimize space for this project.
4. After few years of operation, evaluate the volumes and warehouse space again to consider starting warehousing elsewhere in Finland by the logistics service provider.

Following these steps, the web-distributors operation can be implemented and new possibilities can be evaluated again in the future when the operation has stabilized and secured.

## 7.3 Thesis Evaluation

The objective of this study was to find out the optimal channel design to implement direct sales in the EU-area by the operation of one web-distributor. When the outcome has been clarified, practical steps for the web-distributors operation can be started. The outcome of this Thesis was to clarify how the products can be stored and then delivered to the end users in Germany and by making the neutral evaluation of all each alternatives and service providers, this was thoroughly clarified.

During the interviews, it was made clear that channel alternative 3, warehousing outside Finland was not a reasonable solution from the alternatives so it was dropped out from the evaluation. It was then focused on the two first two alternatives, warehousing in Iisalmi or warehousing elsewhere in Finland. During the workshop for data 2 in the case company when weights were given for the evaluation criteria, this was also agreed by the case company key stakeholders. After the final analysis, the solution was easily found from channel alternative 1 arranged by the service provider 3.

## 7.4 Logic

“To think logically, is to think analytically, systematically and objectively. The natural and human sciences are based on logical thinking and analytic, systematic, objective methods for inquiry and discovery.” (Rankin, 2016)

In this study, logic was ensured by the following steps. First setting the objective, second, finding the evaluation criteria from relevant literature, third, analysis of the suitability of the three channel alternatives and fourth making the final selection out of the alternatives based on the weighted evaluation criteria given by the case company. Following these steps systematically ensured the neutral evaluation of each channel alternative and service provider.

## 7.5 Reliability and Validity

Research design is supposed to represent a logical set of statements. A person can estimate the quality of this study according to four different tests, which are commonly used to review any empirical research. These tests are constructed validity, internal validity, external validity and reliability. Each of these parts requires strict attention and they are regarded as more complex concepts than what most of the researches have been accustomed to. As far of construct validity, the researcher should follow this step: use multiple source of evidence to establish a chain of evidence and then have key informants to review the draft. For internal validity: do pattern matching, do explanation building address rival explanations and use logic models for analyzing. For external validity: use theory in single-case studies and use replication logic in multiple case studies as well. (Yin 2003: 34)

The goal of reliability is to minimize the mistakes and flaws in the research. The aim of reliability is that the later investigator can end up in the same findings and the conclusions than the researcher himself. (Yin 2003: 37)

Reliability is divided into two major factors: trustworthiness which includes credibility, dependability, conformability and authenticity which includes fairness, educative-, catalytic- and tactical authenticity. Reliability can be increased in the research by using different data sources and collection tools, applying an established theory from one area to another, collecting data from different time walls and using researches at different

parts of the study. These methods are very relevant when conducting a validity of the research. Combining different sources for background work helps the researcher gather a wider understanding of the research work and therefore he can combine different aspects of the background. It also gives the reader confidence when reading the research and the influence how the author has end up to the conclusions (Yin, 2003, 38)

## 7.6 Closing words

Due to the relevance of starting direct sales in Germany, the study was a feasible choice. Following the planned steps, evaluation could be made effectively and accordingly. Each of the representatives, who have a long experience in the logistics, gave their recommendations for each of the alternatives which helped to discover the proper solution. Based on this solution, the direct sales can be implemented when the time is convenient for the case company.

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**Appendix 1**

Name of the informant	Interviewee 1
Position of the informant	Sales Director
Date of the session	3.2.2017
Recorded	3.2.2017
Question	Answer
1. The web-distributor has been targeted towards the market of Germany. The shipping options are either a) 100 or b) 1000 shipments	When the operation is not that wide at this point, it's not recommended to start warehousing in Germany and it's very difficult to even arrange it. We have been doing this kind of solutions in our warehouses in Finland and when the volumes have been increased to more interesting levels, this alternative should be evaluated again.
2. For the first phase, there are two products offered for the web-distributor: a) 4,9kg with dimensions of 300x210x200mm b) 7,7kg with dimensions of 400x250x240mm	The size of the product affects the prices and for our services they are fixed. These prices include one delivery attempt. (The actual prices are not mentioned in this appendix)
3. We want to offer two shipping options for the customer which are: a) delivery in two days, b) delivery in six days	We can offer only one shipping option from Vantaa to Germany which is in 3 days and 4 days from Iisalmi
4. For price inquiries, the number of boxes on delivery are either a) two boxes or b) 5 boxes	Given price is per one box
5. If the warehousing is arranged somewhere else besides Iisalmi, can the company determine how often re-supplies come to the warehouse?	There can be triggers installed to the warehousing management system which sends an alarm to the warehouse operator automatically. Often these messages are delivered straight to the customer company.
6. Product codes from the boxes and the products themselves must be able to scan and brought to the case company's own datasytem	This is one of the basic features in our warehousing management system.



7. When the order is made, a confirmation message should be sent to the customers email or phone that the order has been sent.	This can be done but usually the web-distributors online platform takes care of this.
8. How returns and warranty issues are handled?	This depends totally on the contract but usually it's the cost of basic delivery + 10 euros.
9. How flexibility is noticed in your service?	Typically, the window for new orders close at 11 a.m but almost every customer can do quick orders or alternations to their orders when the window has closed. New orders can't be done after this time though because of technical reasons but orders can be still deleted.
10. You mentioned about the volumes are rather low, how big they should be that the warehousing in Germany should be considered for this project?	This is hard to say, because it's the matter of our organization in Germany. Usually, the revenue should be somewhere between 200-500 000 euros per year.

## Appendix 2

Name of the informant	Interviewee 2
Position of the informant	Account manager
Date of the session	28.3.2017
Recorded	28.3.2017
Question	Answer
1. The web-distributor has been targeted towards the market of Germany. The shipping options are either a) 100 or b) 1000 shipments	(The actual prices are not shown in this appendix)
2. For the first phase, there are two products offered for the web-distributor: a) 4,9kg with dimensions of 300x210x200mm b) 7,7kg with dimensions of 400x250x240mm	The first product would fall for weight to our Express category which is faster than the regular service. With this the customer would get faster shipping with no extra charges.
3. We want to offer two shipping options for the customer which are: a) delivery in two days, b) delivery in six days	For option a, I would recommend our basic service Express, which is 1-2 days' delivery. For option B, I would recommend our service Economy Express, which is 2-4 days' delivery depending on the delivery address.
4. For price inquiries, the number of boxes on delivery are either a) two boxes or b) 5 boxes	The price is per one box on delivery.
5. If the warehousing is arranged somewhere else besides Iisalmi, can the company determine how offer re-supplies come to the warehouse?	We don't offer warehousing solutions so I can't answer this question.
6. Product codes from the boxes and the products themselves must be able to scan and brought to the case company's own data system	We don't offer warehousing solutions so I can't answer this question, but our own information system can be linked to many online platforms which automatically seeks the best price for the customer. This can be done if the warehousing is arranged in Iisalmi by the case company.
7. When the order is made, a confirmation message should be sent to	We don't have this kind of system.

the customers email or phone that the order has been sent.	
8. How returns and warranty issues are handled?	The product can be picked up from the customer or he can drop it to the nearest service point, whichever is more convenient for him.
9. How flexibility is noticed in your service?	Our service is based on the "control tower" principle where each delivery can be supervised. There are also very convenient shipping options available for deliveries across Europe which I mentioned beforehand.
10. If the pick-ups are done straight from Iisalmi, does this bring any additional charges?	The location of the pick-ups won't affect the prices.
11. Any additional comments or recommendations?	My suggestion would be that the warehousing should be done in Iisalmi based on these volumes, because the maximum amount of deliveries are 4 per day. If the volumes would increase in the future other alternatives should be considered again.

## Appendix 3

Name of the informant	Interviewee 3
Position of the informant	Account manager
Date of the session	9.3.2017
Recorded	9.3.2017
Question	Answer
1. The web-distributor has been targeted towards the market of Germany. The shipping options are either a) 100 or b) 1000 shipments	100 deliveries is rather low quantity to get a competitive offer but the shipping could be done in our Euro Connect freight network. For 1000 deliveries a competitive price is possible. (Actual prices are not shown in this appendix)
2. For the first phase, there are two products offered for the web-distributor: a) 4,9kg with dimensions of 300x210x200mm b) 7,7kg with dimensions of 400x250x240mm	Weight and dimensions are ok for each of our services.
3. We want to offer two shipping options for the customer which are: a) delivery in two days, b) delivery in six days	Two days delivery is only possible in our Express line of service, but 6 days delivery would be delivered in our standard courier network, where the price is much cheaper.
4. For price inquiries, the number of boxes on delivery are either a) two boxes or b) 5 boxes	The price is per one box.
5. If the warehousing is arranged somewhere else besides Iisalmi, can the company determine how often re-supplies come to the warehouse?	In our warehousing service in Hamina, this can be supervised by triggers which alarm when the quantities are too low.
6. Product codes from the boxes and the products themselves must be able to scan and brought to the case company's own datasytem	This can be done in our warehousing system.
7. When the order is made, a confirmation message should be sent to the customers email or phone that the order has been sent.	This can be done in each of our delivery systems. Tracking system is also standard in each of our delivery services.
8. How returns and warranty issues are handled?	The customer can bring the product to his nearest service point for return.

9. How flexibility is noticed in your service?	For flexibility, our Vantaa warehouse would be better but for pricing Hamina is more suitable. All deliveries include one delivery attempt and after this it's brought to the nearest service point for 14 days.
10. If the pick-ups are done straight from Iisalmi, does this bring any additional charges?	Location won't affect the charges.
11. Any additional comments or recommendations?	The pick-ups can be scheduled for any week days depending on the contract by Posti which is our biggest partner in logistics in Finland. If warehousing solution is considered, this could be done in our warehouse in Hamina. There the items would be stored for 30 days at a time. Warehousing in Germany would need more critical volumes to cover the charges. The volumes should also be more steady. The benefit would be shorter delivery time for the customer.

## Appendix 4

Name of the informant	Interviewee 4
Position of the informant	Sales Manager
Date of the session	24.3.2017
Recorded	24.3.2017
Question	Answer
1. The web-distributor has been targeted towards the market of Germany. The shipping options are either a) 100 or b) 1000 shipments	Our core competence is only targeted for transport and warehousing services outside Europe so we are not a best possible service provider for this project. I recommend you to ask these services from our competitors.
2. For the first phase there are two products offered for the web-distributor: a) 4,9kg with dimensions of 300x210x200mm b) 7,7kg with dimensions of 400x250x240mm	For weight and dimensions these products are solely courier freight so we are not able to provide services for this project. Time and cost are both an issue as well.
3. We want to offer two shipping options for the customer which are: a) delivery in two days, b) delivery in six days	-
4. For price inquiries, the number of boxes on delivery are either a) two boxes or b) 5 boxes	-
5. If the warehousing is arranged somewhere else besides Iisalmi, can the company determine how often re-supplies come to the warehouse?	-
6. Product codes from the boxes and the products themselves must be able to scan and brought to the case company's own datasystem	-
7. When the order is made, a confirmation message should be sent to the customers email or phone that the order has been sent.	-
8. How returns and warranty issues are handled?	-
9. How flexibility is noticed in your service?	-

10. If the pick-ups are done straight from Iisalmi, does this bring any additional charges?	-
11. Any additional comments or recommendations?	-