

Logistics and Transportation Management
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WALLHAMNBOLAGEN AB

-Becoming a third-party logistic provider-

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ABSTRACT

Wallhamn is situated on Tjörn, an island on the Swedish west coast, and has served as a port since the middle of 1960. Today, Wallhamn is suffering a decrease in goods flow, and is now in a situation where something has to be done. The Board of Directors of Wallhamnbolagen AB are searching for alternative fields of action that can replace the old activities with a view to further securing job opportunities and Wallhamn's existence.

Due to Wallhamn's negative development in recent years, together with the loss of important customers, the purpose of this thesis is to investigate the possibility for Wallhamn to work as a third party logistic provider. We also aim to state and define different areas of importance for Wallhamn in order to create a successful logistic and market strategy. The purpose is also to suggest which operative activities Wallhamn should offer their customers as a logistic provider, and also how these activities should be formed and managed.

In order to be able to accomplish the purpose of the thesis, we have identified a main problem that this research aims to answer. The main problem that we have identified is, what possibilities are there for Wallhamn to work as a third-party logistic (TPL) provider, and offer more logistical activities/services which add value for Wallhamn and their customers. In order to answer the main problem in a sufficient way we have identified a number of sub-problems:

- Who are the competitors and how do they work?,
- What customer segments should Wallhamn focus on?,
- How should Wallhamn as a TPL provider position themselves?,
- How can Wallhamn increase their flow of goods?.

To solve the thesis problems, we have conducted an exploratory study and used personal in-depth interviews as our primary source. We have also conducted literature studies to find theories that are relevant for each sub-problem. The empirical research and the literature studies have given us a sufficient base on which we have build the thesis' analysis, and that leads to the conclusions and recommendations of this study.

To summarise the conclusions and recommendations, we believe Wallhamn has great potential in becoming a successful TPL provider however, becoming a TPL provider will not be an easy task. In this thesis we will not be able to solve all problems, instead we have focused our conclusions on three critical areas: *Positioning, Customer segments, and Goods flow*. We believe these are areas Wallhamn must develop to become a successful actor in the TPL industry.

Keywords: Third-party logistics, logistic and market strategy, logistical activities and customer segments.

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SUMMARY

Wallhamn that is situated on Tjörn, an island on the Swedish west coast, and has served as a port since the middle of 1960. Since then, the port has been run with varied results. After peaking results at the end of 1980 and the first half of 1990, Wallhamn lost several important customers. The loss of customers continues, and in the shift 2002-2003 Toyota, one of the most important customers will leave the port. At the same time, the shipping industry has seen an increase of 30% in the flow of goods during the last decade. Despite this increase Wallhamn is suffering a decrease in goods flow. Wallhamn is now in a situation where something has to be done. The Board of Directors are now searching for alternative fields of action that can replace the old activities with a view to further securing job opportunities and Wallhamn's existence.

Due to Wallhamn's negative development recent years, and the loss of important customers, the purpose of this thesis is to investigate the possibility for Wallhamn to work as a third party logistic provider. We also aim to state and define different areas of importance for Wallhamn in order to create a successful logistic and market strategy. The purpose is also to suggest which operative activities Wallhamn should offer their customers as a logistic provider, and also how these activities should be formed and managed.

To be able to accomplish the thesis purpose we have identified a main problem that this research aims to answer. The main problem that we have identified is what possibilities are there for Wallhamn to work as a third-party logistic (TPL) provider and offer more logistical activities/services which add value for Wallhamn and their customers. In order to answer the main problem in a sufficient way we have identified a number of sub-problems:

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To solve the thesis problems' we have conducted an exploratory study and used personal in-depth interviews as our primary source. We have also conducted literature studies to find theories that are relevant for each sub-problem. The empirical research and the literature studies have given us a sufficient base on which we have build the thesis' analysis, and that leads to the conclusions and recommendations of this study.

To summarise the conclusions and recommendations, we believe Wallhamn has great potential in becoming a successful TPL provider however, becoming a TPL provider will not be an easy task. In this thesis we will not be able to solve all problems, instead we have focused our conclusions on three critical areas *Positioning, Customer segments, and Goods flow*. We believe these are areas Wallhamn must develop in order to become a successful actor in the TPL industry.

Positioning - We believe that Wallhamn as a TPL provider should focus on some core competencies, utilising their strength in factor costs to create value for their customers. They should focus on standard services. Focus on a few core competencies like warehousing and transportation. However, to begin with, they must get some more logistics expertise in order to be successful as a TPL provider, including some restructuring in their existing organisation that is necessary in order to develop a successful positioning strategy that will create value for their clients.

Customer Segments – In this area we focus on two main characteristics of segments i.e., type of goods and geographical location. These segment characteristics are important to have defined when Wallhamn is going to attract new customers for the new services. Wallhamn's organisation, cost structure and infrastructure suits goods with long storage time, low-value products and preferably arriving or departing by sea. We believe that Wallhamn should focus on customers that are easily served by road transports and, in order to achieve economies of scale, have several customers in the same area. A good way of

identifying type of goods and geographical location is to use the concept of landed cost.

Goods Flow - We have discovered a number of factors that could have the effect of an increase in Wallhamn's goods volume these are, strong marketing / sales function, start feeder traffic, forwarding agents/ agency, co-operation with more than one haulier, act as a subcontractor to other TPL providers, marketing towards importers and exporters, increase goods volume on existing shipping companies.

1 INTRODUCTION

This first chapter's purpose is to give the reader a background to this report. It also reflects the purpose and the aim of this report.

1.1 Background

Wallhamn that is situated on Tjörn, an island on the Swedish west coast, has served as a port since the middle of 1960. Since then, the port has been run with varied results. After peaking results in the end of 1980 and the first half of 1990, Wallhamn lost several important customers. The loss of customers continues also and in the shift 2002-2003 Toyota, one of the most important customers, will leave the port. At the same time, the shipping industry has seen a 30% increase in flow of goods during the last decade. Despite this increase, Wallhamn is suffering a decrease in goods flow. Wallhamn is now in a situation where something has to be done. The Board of Directors are now searching for alternative fields of action that can replace the old activities with a view to further securing job opportunities and Wallhamn's existence.

1.2 Purpose

Due to Wallhamn's negative development in recent years together with the loss of important customers, the purpose of this thesis is to investigate the possibility for Wallhamn to work as a third party logistic provider. We aim to state and define different areas of importance for Wallhamn in order to create a successful logistic and market strategy. The purpose is also to suggest which operative activities Wallhamn should offer their customers as a logistic provider, and also how these activities should be formed and managed.

1.3 Scope and Limitations

Because of the limited time frame for our thesis some areas will not be referred to. Due to this limitation of time, and the fact that Wallhamn is a new actor in the third party logistic market, we have chosen not to go into detail within various areas in order to be able to cover a wider scope. The areas that are mainly affected are logistical services and activities, specific customers and implementation. The recommended logistical services and activities will be presented and discussed at a higher level, and the operational details will be omitted. The limited time frame made us focus on customer segments and no specific customers will be mentioned. The third limitation is that we will not give any complete implementation strategy, instead we will give recommendations on implementation that Wallhamn can think about when entering the third party logistic market.

1.4 Present situation analysis

In this part of the report we will describe Wallhamn's present situation. It includes a description of the company, its history, development of operations, operations today, customers, resources, infrastructure, and also its strengths and weaknesses.

1.4.1 Organisation

Wallhamn is fully owned by Tjörns County Council. Their full operation is divided into five different units, Wallhamn terminal, Wallhamn PDI, Bilbyggarna at Wallhamn and other operations.¹ In November 2001, 144 persons were working at Wallhamn, and the number of employees has been rather stable during the last three years. Today, not much resource is put into marketing activities. The existing marketing activities are made indirectly through the shipping companies

¹ Förstudie Wallhamnbolagen AB 2002-02-19 p9

calling at Wallhamn. One possibility is to use these shipping companies to promote Wallhamn on the international market. They have had an agent working on marketing Wallhamn on the German market, but unfortunately it has not given any results. They are working to refresh and change their existing website to be more informative, but today they do not have any existing web strategy.²

1.4.2 History

Wallhamn is situated on Tjörn, which is an island approximately 50 km north of Göteborg on the Swedish west coast. The Port was founded in the early 1960's. The reason why the port was founded around this time has got a lot to do with the "Tjörn bridges" that were build and available at the beginning of 1960. The bridges made it possible to have a flow of goods from the mainland to the port. The founder of the port were shipowner Olof Wallenius, Captain Bengt W. Sjöqvist and shipowner Lars Johansson.

The port is unique in Sweden due to the fact that it is constructed in a completely artificial way. Wallhamn began mainly as a centre for import and export of cars. The port not only had the possibility of loading and unloading these cars after building a plant for customisation (PDI) of the cars for the Swedish market there was also the possibility to do PDI-activities and also to store them until transportation from the port. This well-equipped plant gave the port a competitive edge in the area of handling cars. The port was previously an important actor in the Swedish car business. Volvo and SAAB have at an earlier stage exported cars via Wallhamn. Both British and Asian cars have trafficked through the port. The growth of the car industry in 1970- played a very important role in the success of Wallhamn.

1976 Lars and Vilgot Johansson bought the port from the previous owners. This seemed to go well for a couple of years. But, in 1982, the Johansson-group went

² Förstudie Wallhamnbolagen AB 2002-02-19 p9

bankrupt. Wallhamn were suffering big losses, and in order not to lose the port at Tjörn completely, the local authorities bought the whole port and continued to run it. The port is today totally owned by the local authorities.

1.4.3 Development of operations

At the beginning, the import and export of cars was the most important goods in the port. The handling of cars was to become a very important part of Wallhamn for a long time. The PDI-plant played an important role and several car brands were hiring the port's services. After the difficult years of the early 1980's, the port broadened their operations. Wallhamn recovered, and in 1995 the port peaked with a result of 917 000 tonnes of handled goods. But since then, the port has been in a decline, and today, the amount of goods handled is down at 240 000 tonnes. The decline can be described by three main factors, the loss of Sea-Land, NCC and Nissan.

Sea-Land left Wallhamn, in 1999, for the Port of Göteborg. The reason why they moved was that they had started an operative co-operation with Maersk which operated in Göteborg. And, for the co-operation to be effective, both shipping companies had to traffic the same port. Wallhamn did not have the harbour depth that Maersk's giant ships demanded. The loss of Sea-land struck hard on the container handling in the port.

The next loss for Wallhamn was the relinquishing of stoneware handling in the port. NCC had for some time been extracting stoneware in the Wallhamn area and shipped it from the port. This loss was not stroke Wallhamn hard economically, but since stoneware is very heavy it drastically reduced the amount of goods in tonnes handled by the port.

The third reason to Wallhamn's decline was that Nissan left Wallhamn for another port. Contrary to stoneware, this loss did not make a severe impact on the amount

of goods handled, but economically, it caused a serious decline since the value of cars is high.

In December 2002 Toyota, which is the largest customer in cars, will leave Wallhamn to operate from Malmö instead. This will have a severe impact on Wallhamn's economy, and amount of goods handled. This loss seems to be the end of Wallhamn as a car handling port. This will also strike hard on the effective PDI operations which have been an economic success for Wallhamn.

1.4.4 Operations at Wallhamn today

After having focused on car handling, Wallhamn is now trying to broaden their operations. Wallhamn is today divided into four operative areas:

Wallhamn Terminal with all services within handling of goods with focus on cars, containers, and storehouse products.

Wallhamn PDI customises vehicles for the Swedish market, and at the same time stores the vehicles for car importers.

Other operations which includes waxing, washing, rust proofing and mounting of stripes. Wallhamn has also got their own sheet-metal and lacquering workshop.

Carbuilders equips service vehicles for companies and municipalities throughout Sweden.

The goods that enter the port consist of containers via the shipping companies Samskip and Grimaldi. Grimaldi also ship Fiat, Alfa Romeo and Opel cars for the Swedish and Norwegian market.

Goods that are shipped from Wallhamn today consist of SAAB cars, Volvo chassis, contracting vehicles. Other goods that are shipped from the port are wood, planed wood, machine parts, general cargo and paper on pallets. In recent years heavy duty machines have also shipped from Wallhamn via Flota Suardiaz.

Today, Harms shipping company enters the port once a week with Toyota cars for the Swedish market from England. Toyota also makes their own calls at the port approximately 30 times a year. But all Toyota activities will come to an end at the end of this year.

Beyond Wallhamn's own operations in the port, there are a number of companies that rent space in the Wallhamn area for their operations. These companies are Chalmers Lindholmen Shipping Education, Nösnäsgymnasiet, På Konsult AB, Nordic Bulkers AB, SF Marina System AB, Elfcon AB, Cementa AB, and Grimaldi Maritime Agencies Sweden AB.

1.4.5 Technical- and other tangible assets

Port Wallhamn has a maximum allowed deep draught of 10 m and an equipment containing of 17 forklift trucks 2.5- 48 ton, 5 tugmasters and 2 container gantry cranes. They have five wharves with varying length of which three includes Ro-Ro ramps. Wallhamn have their own stowery with 24 h service, every day all year round. Wallhamn can offer 35 000 m² space for storing inside of which 3000 m² is tempered. Outside there is another 750 000m².

Wallhamn is secured by gate guards 24 h a day. They have a PDI (pre-delivery inspection) plant with the capacity to handle 100 000 cars per year. The plant is said to be the most complete in Sweden, and Wallhamn has 30 years of experience within PDI work. The knowledge and high service level of the employees is said to be best on the market.³

1.4.6 Infrastructure

Wallhamn is situated at the entrance of Hakefjorden on the southeast side of Tjörn, just 50 km north of Gothenburg close to the E6 motorway linking Oslo and

³ Förstudie Wallhamnbolagen AB 2002-02-19 p9

Gothenburg. The closest railway connection and nearest industrial area is in Stenungsund 10 km from Port Wallhamn. Stenungsund is the petrochemical centre of Sweden.⁴

1.4.7 SWOT-analysis

The major points out of an SWOT analysis are from an earlier study done in spring 2002.

1.4.7.1 Strengths and weaknesses

Wallhamn is recognised as a port with high quality and a good reputation. Wallhamn has the most complete PDI plant within their organisation. In the area there is lots of space for storing activities, and there is a high level of knowledge and a service-minded approach among the employees. The major weaknesses are the geographical location and the infrastructure with no railway connection to the port. Wallhamn is today reliant upon a few dominant customers with both the activities within the port and their PDI plant. Another major weakness is their relatively high transportation costs, as a result of the existing infrastructure.⁵

1.4.7.2 Opportunities and threats

Wallhamn has great opportunities to market and promote Wallhamn as a port with great storing possibilities and having their own PDI-plant. They should emphasise their employees' knowledge and service-minded approach. Use media to a greater extent to market Wallhamn both nationally and internationally.⁶

⁴ Bransch presentation Sveriges Hamn och Stuveriförbund

⁵ Förstudie Wallhamnbolagen AB 2002-02-19 p15

⁶ Förstudie Wallhamnbolagen AB 2002-02-19 p 18

Their major threats today are the dependence on only a few shipping companies and the fact that they will lose a big customer Toyota next year.⁷

1.5 Restrictions

There are a number of restrictions that limit Wallhamnsbolagen ABs possibilities in making business in certain areas and operations, and also with some customers. These restriction will be discussed below.

1.5.1 Infrastructure

Geographical location - The Port of Wallhamn is located 50 km north of Gothenburg, and the nearest industrial area is the petrochemical centre in Stenungsund 10 km from the port.⁸ The geographical location of Wallhamn is a restriction and will affect their possibilities of attracting and keeping existing and new customers in the area. More and more companies decide to locate their business in urban areas with the closeness to suppliers, customers, transportation companies, distribution terminals, consolidation hubs, logistical centres etc.

Port - There are some restrictions in the port that limits their possibilities to include all types of shipping. The distance from pilot station to berth is 15 nautical miles, a minimum width of entrance channel of 100 m, a minimum depth of entrance channel of 11 m with maximum draught permitted of 10 m.⁹ The ships that can not call at Wallhamn are mainly big containerhips, however, all Ro-Ro ships can berth at the port.

⁷ Förstudie Wallhamnbolagen AB 2002-02-19 p18

⁸ Info leaflet from Wallhamnbolagen AB

⁹ Info leaflet from Wallhamnbolagen AB

Railway - Wallhamn lacks in railway connection in the port which limits their possibilities of handling certain types of goods. Heavier goods like bulk goods and forest products coming from the north of Sweden are usually transported by train. Because of the increased concern about environmental issues, more companies try and use the railway in a broader sense, however if transporting to Wallhamn the goods have to be reloaded on trucks somewhere in the transport chain.

Road - Wallhamn is situated on Tjörn 16 km from the E6 motorway linking Oslo and Gothenburg. This distance puts Wallhamn in a bad position because of the fact that it is not easily accessible resulting in increased transport costs for the customers.¹⁰

1.5.2 Investments

The fact that Wallhamn is owned by the municipality to 100 % will affect their possibilities of investments in the port. Concerning plans on developing their logistical activities there is a business plan and budget over a new warehouse used for storage and logistic activities. See appendix for full figures. Investments before start are about 1 100 000 SEK to cover a new concrete floor and pallet stands. Investments during year one: Information systems and more pallet stands which equals another 675 000 SEK. They have estimated their variable costs during the first year to 1 020 000kr and the second year to 1330 000 SEK. The variable costs consist of salaries and equipment to handle the goods.¹¹ If they are to fill up this warehouse, and they see a need for more storage areas they will then have possibilities of building new ones.

1.5.3 Business and Ownership restrictions

Wallhamnsbolagen AB is 100-percent-owned by the municipality of Tjörn, and is obligated to follow the special laws for municipality owned companies. One

¹⁰ Info leaflet from Wallhamnsbolagen AB

paragraph of this law says that a municipality owned company can only work and act within the district. The facilities should be situated there and the business should have a close relation to the area. Co-operations with firms outside the municipality is possible but each case must be tried by the authorities.¹²

The owner of Wallhamnsbolagen AB, the Municipality of Tjörn, states that the main goal of the company is to get job opportunities and a place for different business to act. They also state that Wallhamn contributes to the development of the community. The company also have economical objectives but this is not the main goal for the business.¹³

1.5.4 Port Dues

The Swedish port authorities (Sjöfartsverket) are charging all ships that are coming in or going out of the port. These fees are divided in two parts. One part of the fee is for the ship itself, and the second part is for the goods. The ships are charged every time they enter or leave a Swedish port. The fees are relatively high and constitute a high degree of the total cost of shipping. This has led to the different shipping companies choosing to only include one Swedish port in their shipping route. It would be too expensive, for instance, to sail first to Gothenburg and then to Wallhamn since the dues would be double.¹⁴

1.6 Procedure

The first step in our procedure was to get more knowledge about the company. The information input came from the contact persons at Wallhamnsbolagen AB. This background information made it possible for us to state the purpose of the

¹¹ WTL Business plan

¹² Tjörns Kommun

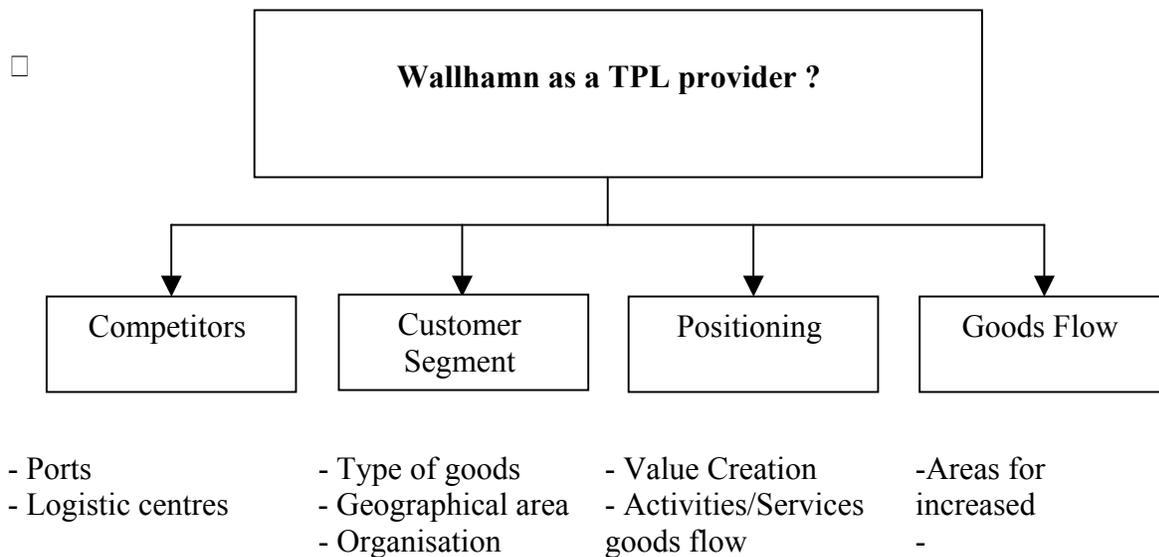
¹³ Tjörns Kommun

¹⁴ Sjöfartsverket

thesis resulting in a problem definition. To solve the thesis problem we will choose an appropriate research methodology including research design and ways to collect data. This will be found in the research methodology and data collection chapter. We will need data from both secondary and primary sources. The secondary data will be found in literature and different articles and reports and will be presented in the theory chapter. The primary data will be collected through interviews and is presented in the empirical studies chapter. After collecting the different data we will do an analysis connecting the theory and the empirical studies with focus on the problem of this thesis. As a result of the analysis we will state our conclusions and recommendations.

In the thesis the concept Third-Party Logistics is mentioned continuously. The concept will not be written out in full, instead we will use the short form TPL. Consequently, we will also use TPLP for third-party logistic provider. We will also mention some words and concepts related to logistics, some of them are defined in the text and those that are not will be explained in the wordlist in Appendix 1.

2 PROBLEM ANALYSIS LEADING TO SUB PROBLEMS



This chart is a description of the main problem of this thesis and how sub-problems are derived from it. To be able to draw conclusions on the main problem we have to solve the different sub-problems. To make the work more efficient and structured we have identified areas for each sub-problem that is the target for our investigation. In order to collect information about these areas we will use different methods and research techniques. We will also use known theories as backup for our analysis and conclusions.

2.1 Main problem - Wallhamn as a TPL provider ?

The main problem is given from the principal and is derived from the background and development of the company, which can be read more about in chapter one. The above used main problem is a summation of the full definition. The defined main problem is: What are the possibilities for Wallhamn to work as a third-party logistic (TPL) provider, and offer more logistical activities/services that add value for Wallhamn and their customers. The main problem in its own context is very difficult to approach and solve, due to that fact we have identified four sub-

problems that will help us to focus our work in the right direction. Each sub-problem will also give facts that are most probably of interest for our principal.

2.2 Sub-problems

The sub-problems will help us approach the main problem. These areas will also give the investigation a deeper context and broader and more motivated conclusion to this thesis. Each of these areas has been chosen after pre-studies of the business and the industry and also after interviews and communication with the principal at Wallhamn. To investigate and find wanted answers we have focused our investigation on sub-areas for each sub-problem that will be interpreted with different methods and research techniques. We will also use known theories as backup for our research. The theories will help us create relevant and valid conclusions.

2.2.1 Who are the competitors and how do they work?

The sub-problem that first got our attention was the competitors. In order to investigate if it is possible for Wallhamn to develop into a TPL provider we must know if there is a market and who the competitors in such a market are. We have identified two main areas of competitors and the first one is other ports that already offer several logistic services to their customers, the second is traditional logistic companies which have developed into providers of services that cover the whole logistic chain. After investigating this sub-problem we hopefully know who Wallhamn will be competing with and how to compete against them. The investigation will also let us learn a lot about how others are working in the logistic areas, what services are offered, what kind of goods are handled, what kind of customers they have, what the organisation looks like etc. The information of these investigations will be used as information input to the other sub-problems as well. This sub-problem will not be analysed in the same way as the other sub-problems, it should rather be seen as an information input to other areas.

2.2.2 What customer segments should Wallhamn focus on?

In order to know what customers to attract to Wallhamn we must know what kind of customer segment is best suited for Wallhamn's structure. After discussions with our principal we decided to investigate what type of goods would be best suited for Wallhamn and from what geographical areas they should get their customers from. When finding what type of goods and geographical area that were best suited for Wallhamn, one also has to look at the landed cost, and compare this with other ports. The landed cost is crucial for finding the breakpoints in the market area served where Wallhamn can be competitive. The investigation of competitors in the other sub-problem will be a great input of information.

2.2.3 How should Wallhamn as a TPL provider position themselves?

To be successful in the field of logistics it is very important to have a clear positioning strategy, and to define what activities and services that creates value. In order to reach the wanted position in the logistic market it is important to have an efficient and well-working organisation including some central functions. In the field of positioning we will also include the services and activities that Wallhamn should add to their logistical offer. The issue of different services will also relate to the field of which customer segment to focus on since they have a lot in common. The investigation of competitors will be a great part of the information input for this sub-problem, as it can be seen as benchmarking.

2.2.4 How can Wallhamn increase their flow of goods?

This sub-problem deals with Wallhamn's need for an increased goods flow. The different areas that can contribute to an increase of goods flow for Wallhamn will be discussed and analysed. These areas will be identified through interviews with competitors and existing customers, and also as an outcome of conclusions and results from the other sub-problems.

3 THE RESEARCH METHODOLOGY AND DATA COLLECTION

In this section we will describe the research methodology we have used when investigating the different problems in this thesis. It also describes how we have collected data and information.

3.1 Research design

Research design or methodology refers to the procedural framework within which the research is conducted. A research is the detailed blueprint used to guide the implementation of a research study toward the realisation of its objectives. The process of designing a research study involves many interrelated decisions. The most significant decision is the choice of research approach, for this determines how the information will be obtained. All research approaches can be classified into one of three general categories of research: exploratory, descriptive, and causal. These categories differ significantly in terms of research purpose, research questions, precision of the hypotheses that are formed, and the data collection methods that are used.¹⁵

A *descriptive research* is concerned primarily with addressing the particular characteristics of a specific population of subjects, either at fixed point in time or at varying times for comparative purposes. Of great interest is the underlying target population that the surveyed samples are supposed to represent.¹⁶ In descriptive research, hypotheses will often exist but they may be uncertain and speculative. In general, the relationship studied will not be causal in nature. However, they may still have utility in predicting.¹⁷

¹⁵ Aaker, D et al (1986)

¹⁶ Gill, J et al (1997)

¹⁷ Aaker, D et al (1986)

Another research design is the *causal research*. Causal studies seek to discover the effect that a variable(s) has on another (or others) or why certain outcomes are obtained. The concept of causality is grounded in the logic of hypothesis testing, which in turn, produces inductive conclusions. Such conclusions are probabilistic and thus can never be demonstrated with certainty.¹⁸

The third type of research is exploratory research which is the research used in our study and will be discussed in more detail below.

3.1.1 Exploratory Research

With our aim of learning more about competitors and look into the existing market with existing customers, other logistical centres and other ports, we have conducted an exploratory study.

Subjects or topics to be researched under this design are characterised by almost an absence of any prior knowledge or very little knowledge.¹⁹ The research methods are highly flexible, unstructured, and qualitative, for the researcher begins without firm preconceptions as to what will be found. The absence of structure permits a thorough pursuit of interesting ideas and clues about the problem situation.²⁰

Exploration is particularly useful when we as researches lack a clear idea of the problems we will meet during our study. Through exploration researches can i.e., develop concepts more clearly, establish priorities, develop operational definitions, and improve the final research design. Exploration will also serve other purposes such as giving more knowledge about the area of investigation, developing hypotheses for pure research and the researcher may explore to be sure it is practical to do a study in the area.²¹

¹⁸ Cooper, D et al (1998)

¹⁹ Lekvall, P et al (1993)

²⁰ Aaker, D et al (1986)

²¹ Cooper, D et al (1998)

3.2 Information and Data collection

The objectives of exploration may be accomplished with different techniques. Both qualitative and quantitative techniques are applicable, however exploration relies more heavily on qualitative techniques which have also been used in this study. When considering the scope of qualitative research we have in this study, we have used in-depth interviews of a more conversational structure.²²

When the approach is combined, four methods could be used. These are secondary data analysis, experience surveys, focus groups and two stage designs. We started out by looking into secondary data about the competitor market and interviewed persons who could be seen as an experience survey, we did seek their ideas about important issues or aspects of the subject and discover what is important across the subject's range.²³

3.2.1 Collection methods

There are numerous approaches to gathering data needed for the examination of a particular problem. The most common distinction is secondary data and primary data. Secondary data are already available, because they were collected for some purpose other than the present problem, for example earlier examinations, existing statistics, literature and articles. Primary data is collected especially to address a specific research problem. A variety of methods – ranging from qualitative research to surveys to experiments can be employed.²⁴ It's never possible to rely on one type and discard the other source, so this study will rely on both secondary and primary sources.

²² Cooper, D et al (1998)

²³ Cooper, D et al (1998)

²⁴ Aaker D et al (1986)

3.2.1.1 Secondary sources

In this study we have started by collecting the secondary data to be able to establish the specific research questions. The secondary data used here consists of brochures, info leaflets, company documents and other published books and articles. The literature needed in this study should give sufficient information in the areas concerning our main and sub-problems.

3.2.1.2 Primary sources

The primary data and information were mainly acquired by conducting telephone and personal in-depth interviews.

Interviews

The telephone interviews was used to arrange personal interviews and screening from unusual types of respondents.²⁵

There are two basic types of in-depth interviews. There are non-directive and semi-structured, and the differences lie in the amount of guidance provided by the interviewer. We have conducted our interviews in a more semi-structured way. Here, the interviewer attempt to cover a specific list of topics or sub areas. The timing, exact wording, and time allocated to each question area are left to the discretion of the interviewer.²⁶

Each interview question can be evaluated with respect to both a thematic and dynamic dimension: “thematically with regard to its relevance for the research theme, and dynamically with regard to the interpersonal relationship in the interview. A good interview question should contribute thematically to knowledge production and dynamically to promoting a good interaction”.²⁷ In our interviews

²⁵ Cooper, D et al (1998)

²⁶ Aaker, D et al (1986)

²⁷ Kvale, S (1996) p 129

we manage to get our interview questions to cover the topic of the study, and give us the answers needed in our investigation. Dynamically, the questions should promote a positive interaction, keep the flow of conversation going and motivate the subject to talk about their experience and feelings. Within this dimension we have only experienced positive interview situations with the respondents sharing a lot of personal thoughts and experience which has been of great help in our investigation.

Concerning the number of interview subjects needed, this depends on the purpose of the study, and one should interview as many subjects as necessary to find out what you need to know.²⁸ “A common critique of interview studies is that the findings are not generalisable because there are too few subjects. A paradoxical answer, from the history of psychology, is that if the aim of the study is to obtain general knowledge, then focus on a few intensive case studies.”²⁹ From our interviews we got the answers that we wanted and that helped us to get a better picture of the market that we studied, and Wallhamn’s situation in this competitive market.

Interview quality

The interviews are the raw material for the later process of meaning analysis. The quality of the original interview is vital for the quality of the later analysis, verification, and reporting of the interviews. Kvale (1996) mentions six criteria for an ideal interview.

- The extent of spontaneous, rich, specific, and relevant answers from the interviewee.
- The shorter the interviewer’s questions and the longer the subjects’ answers the better.
- The degree to which the interviewer follows up and clarifies the meanings of the relevant aspects of the answers.

²⁸ Kvale, S (1996)

²⁹ Kvale, S (1996) p 102

- The ideal interview is to large extent interpreted throughout the interview.
- The interviewer attempts to verify his or her interpretations of the subject's answers in the course of the interview.
- The interview is “self-communicating”- it is a story contained in itself that hardly requires much extra descriptions and explanations.³⁰

Of the six criteria the last three in particular refer to an ideal interview- requiring that the meaning of what is said is interpreted, verified, and communicated by the end of the interview. This demands craftsmanship and expertise and presupposes that the interviewer knows what he or she is interviewing about, as well as why and how.³¹ Through the interviews we got more knowledge and expertise within the area of investigation. Since this was a new area of business and we did not have any previous knowledge, and the fact, that we have not worked within this field of business, we might have lacked in expertise and presupposes at start. However, we got the most out of each interview anyway. If there were any questions after the time of the interview, we had the possibility to contact the respondents again. Although, these mentioned quality criteria might seem to be unreachable ideals, they can serve as guidelines, which has been the case in our study.

3.3 Research evaluation

Credibility is important to all types of research. The issue of credibility refers to being able to demonstrate that the research was designed in a manner that accurately identifies and describes the phenomenon to be investigated.³² In order to reach credibility in a qualitative study, issues concerning validity and reliability should be described.³³

³⁰ Kvale, S (1996) p 145

³¹ Kvale, S (1996)

³² Ryan, B et al (1992)

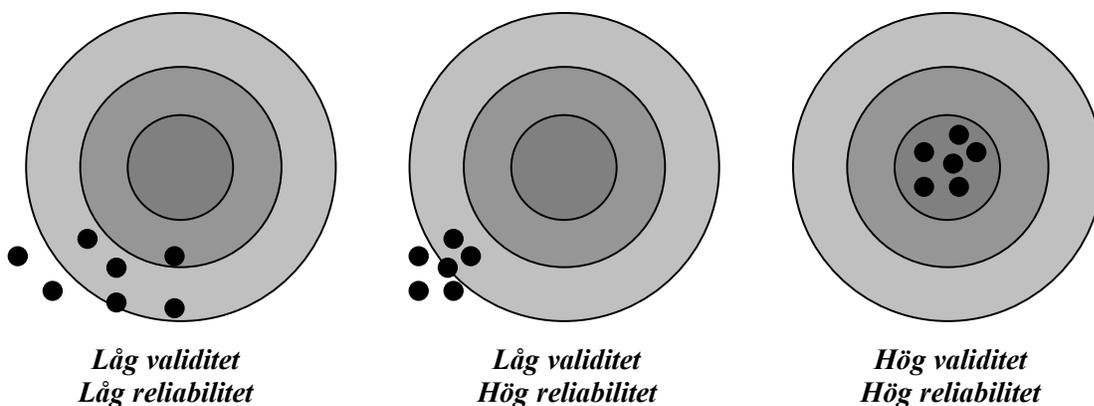
³³ Gill , J et al (1997)

Validity refers to the extent to which a test measures what we actually wish to measure. Validity is the extent to which differences found with a measuring tool reflect true differences among respondents being tested. The difficulty in meeting this test is that usually one does not know what the true differences are, if one did, one would not do the measuring.³⁴

Reliability has to do with the accuracy and precision of a measurement. Reliability is a contributor to validity and is a necessary but not sufficient condition for validity. Reliability is concerned with estimates of the degree to which a measurement is free of random or unstable error.³⁵

In a study it is more important with a good validity than a good reliability. It does not matter if a study has 100 % reliability if it does not measure what we want it to measure. A common mistake is that the examiner thinks that he/ she measure right when the actual case is that he/she measures something else.

To elucidate the two concepts; validity and reliability differences see figure.³⁶



³⁴ Cooper, D et al (1998)

³⁵ Cooper, D et al (1998)

³⁶ Abnor, I (1994)

The reliability in our qualitative study can be affected by the answers from the respondents that pretty much need subjective answers. The answers can be affected by alteration in the respondents' characteristics. As mentioned earlier our primary data composed of telephone and personal in-depth interviews. In the cases where we asked questions by telephone the reliability can be affected negatively because of the fact that the respondents did not perceive the questions in the same way. The respondents' access to time at the point of the interview and our own behaviour can also have negative effects on the reliability.

The validity in our study can be criticised in the cases where we have done our interviews by telephone. When the questions are asked through the telephone it is easy for the respondents to misunderstand what the real question was. In these cases we do not have the possibility to see the respondents' reactions in forms of body language which, of course, affects our total perception of their answer.

To minimise the negative effects on the validity and reliability we have prepared the respondents in the cases of personal in-depth interviews on which subjects we will cover in the interview. All the personal in-depth interviews have shown good validity and reliability.

4 THEORY

In this section of the thesis we will go through the theories that are relevant to the fulfilment of the thesis' purpose and problem definition. This section initially describes the background and development of third-party logistics to the reader.

4.1 Logistics – the definition

The origin of the modern logistic concept can be traced to developments in military logistics during World War Two. In war it was extremely important to get the right material to the right place at the right time. Today, logistics is a commonly used word. It is used in many different ways and there are almost as many definitions of the word as there are authors of literature in the field. We have decided to use a definition that in a good and clear way describes the meaning and content of the logistic concept. The definition is also one of the most widely used and cited, and it is as follows:

”Logistics is the process of planning, implementing and controlling the efficient effective flow and storage of raw materials, in-process inventory, finished goods, services and related information from point of origin to point of consumption (including inbound, outbound, internal and external movements) for the purpose of conforming the customer requirements.”³⁷

Implied in the definition is that the logistic process provides a systems framework for decision making that integrates transportation, inventory levels, warehousing space, materials handling systems, packaging and other related activities that encompass appropriate trade-offs involving cost and service.³⁸ Another widely

³⁷ Coyle, J et al (1992) p

³⁸ Coyle, J et al (2000)

used definition states that logistics involves the efficient and effective management of inventory, whether in motion or at rest, to satisfy customer requirements and organisational objectives.³⁹ The important aspect of the latter definition is that transportation service is recognised as inventory in motion. Therefore the true cost is more than the actual rate charged by the transportation company.⁴⁰

To make things clear we want to present another definition. This definition is similar to the one above and it is stated by The European Logistics Association:

“The organisation, planning, control and execution of the goods flow from development and purchasing, through production and distribution, to the final customer in order to satisfy the requirements of the market at minimum costs and minimal capital use.”⁴¹

This definition points out that logistics occurs along the whole length of the supply chain from the processes of transformation materials into goods for final consumption. However, the intention is not that this full-length perspective is to be a determining factor rather it is that logistics can occur anywhere along supply chains as long as the determining activities are included.

4.2 From logistics to third party logistics

Logistics have always been important in the industry. In the last two decades there have been a number of variables that have changed in the world of industry. These variables have led logistics into a new era with new demands and characteristics for business. Logistics now play a critical role for companies. To be able to compete, the importance of efficiently managed logistics are greater than ever.

³⁹ Coyle, J et al (1992)

⁴⁰ Coyle, J et al (2000)

⁴¹ Coyle, J et al (2000) p

The variables that have changed logistics are: Globalisation of business, Deregulation of transportation and a changing governmental infrastructure, Organisational changes in business, Rapidly changing technology.⁴²

Globalisation of business

The globalisation of business has made a great impact on the way companies operate today. The scope of globalisation runs the transformation from foreign sourcing in the procurements area and/or in the selective sales in other countries to multifaceted international distribution, manufacturing, and marketing strategies that encompass international production sites, multiple staging of inventory, countertrading in the sale of product, and so on. For international ventures the complexity of logistics operations usually increases at a geometric rate in the international arena. If procurement is included, logistics is the single most important factor for successful international ventures. Transportation, in particular, has been affected because of the distances involved both inbound to manufacturing from foreign sourcing, and outbound for additional manufacturing or delivery to customers.

Deregulation of transportation and a changing governmental infrastructure

The changes in the transportation marketplace were accelerated in the 1980's and 1990's due to deregulation of air, motor and rail carriers. Overall it is probably fair to say that the cost and/or quality of transportation service have improved for many shippers because of the deregulation. There are also other changes in the governmental infrastructure that has affected the logistic market. These changes include the deregulation of banking and communication, changes in the European economic community, resulting in more open market structures in the mid 90's. The opening up of Eastern Europe and the dissolution of the USSR were additional changes.

⁴² Coyle, J et al (2000)

Organisational changes in business

The restructuring of business organisations has also been a factor affecting logistics (mergers, acquisitions etc.). In some instances, the logistics functions have been consolidated into one to streamline the organisation and gain reduced costs and added efficiencies. The flattening of organisations has also led to other changes, particularly the outsourcing of supplies and/or services.

Rapidly changing technology

The last factor is the rapidly changing technology, and in particular the changes in computer hardware and software. The significant price reductions for powerful computer equipment have helped to get possibilities for better inventory control, better equipment scheduling, more efficient rating of transportation movements, and so on. The technological changes in communications (such as satellite global positioning systems to maintain contact with motor carrier fleets) have helped to improve service quality to the extent that motor carrier companies are now able to meet more narrowly defined time windows for pickups and deliveries. The interface between communication technology and computers is another area that has large potentials for logistics. These items discussed are just a small part of what we can include in this topic, for example we can add techniques such as bar coding and robotics.

Traditionally, the logistic activities have been made by the company itself, but the changes in the industry have set new demands on efficiency, effectiveness, cost reduction and service levels. As a consequence of the complexity firms started to outsource certain activities to subcontractors such as transportation companies and warehousing firms etc. This was done due to the fact that it was more profitable to let someone who has specialised in a certain field to do the operations. In the early stage of outsourcing of logistic activities the producing company controlled, planned and managed the flow/chain of goods and only certain activities were bought from other suppliers. After requests for more extensive services, from the producing companies, some of the logistic suppliers realised that their competence and contacts in the logistic field could be used to offer their customers a larger

variety of activities and to take part in the controlling, planning and managing activities. This extension of operations would create a greater value for both parts. The logistic firms may not do all activities by themselves, instead they use subcontractors for activities that they do not have their core competence in, but they arrange the logistic operations for the producing firm. These companies are what we call Third-Party logistic providers (TPL). The TPL actors of today have their origin in traditional services in logistics.⁴³

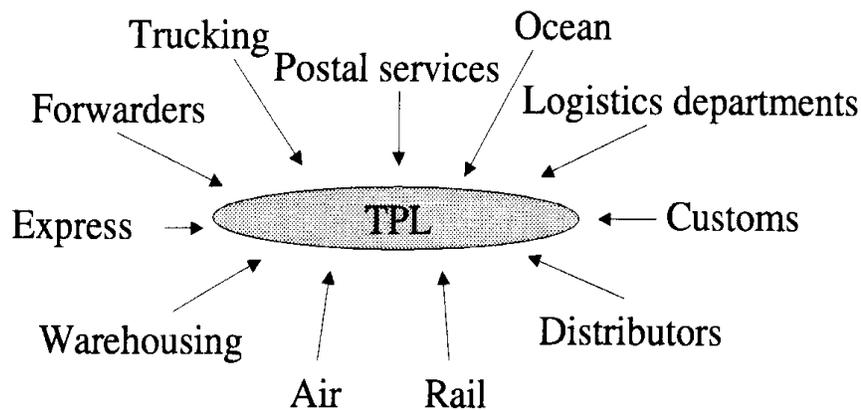


Figure 1: Example of company origins of TPL actors of today.⁴⁴

4.3 Third-party logistics – definition and terminology

So far we have discussed the development from logistics to third-party logistics (TPL). Like logistics the term TPL has several definitions with quite different contents. There are also several different terms for what we in this thesis call TPL. Other terms that can be found and meaning almost the same are, for example, Logistic Alliances, logistic partnerships, contract logistics, contract distribution. The purpose of this section is to give a consistent use of terminology, and to define the terminology to be used in this study.

⁴³ Berglund, M (2000)

⁴⁴ Berglund, M (2000) p. 5

To understand the concept third-party logistics we must first understand the different parts of the concept. The second part, logistics, is explained in previous section. The first component of the term, Third-party, comes from the observation that a company, i.e., party three, acts between two primary participants (parties 1 and 2) in a supply chain without taking title or, at least, no commercial risk for the goods in the flow of materials in the supply chain. These companies are denominated the providers, i.e., as they provide services, whereas their clients are normally called shippers due to a traditional distribution focus. The primary participants have ownership of goods and are therefore named parties one and two.⁴⁵

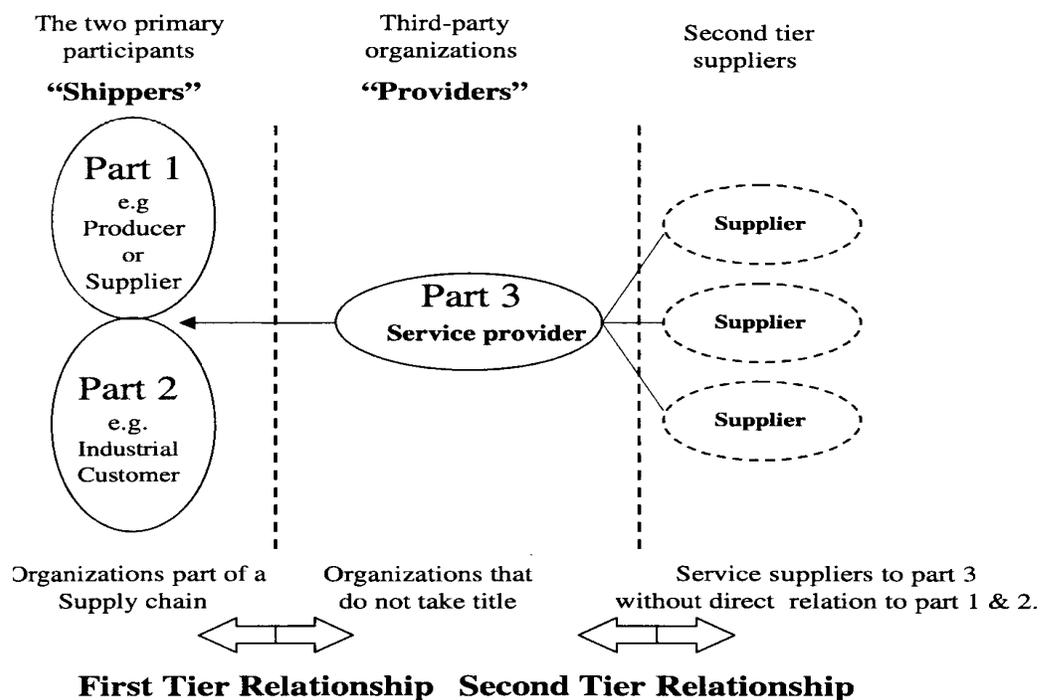


Figure 2:
The relationship between the three parts and the tiered services structure.⁴⁶

⁴⁵ Berglund, M (2000)

⁴⁶ Berglund, M (2000) p. 14

After describing the terminology and giving an understanding of the different parts of the relationship it is time to present the definition of the TPL concept that we will use in this thesis. According to Berglund, M (2000) TPL is defined as:

“Organisations’ use of external providers, in intended continuous relationships bound by formal or informal agreements considered mutually beneficial, which render all or a considerable number of the activities required for the focal logistical needs without taking title”⁴⁷

Even though the TP client is usually referred to as a shipper the logistical need that is fulfilled by the TP (the focal logistical need) can be of any sort, e.g., in-bound, out-bound, reverse etc. Third parties are usually used for outbound operations, but the sales of inbound and reverse operations of the third-party providers are increasing (this will be discussed more in another section).

To give a broader understanding we will use another definition as well. This definition is more extensive and explaining but its content is in a larger scope the same. In Berglund (2000) this definition is also used;

“Activities carried out by a logistic service provider on behalf of a shipper and consisting of at least management and the execution of transportation and warehousing. In addition, other activities can be included, for example inventory management, information related activities, such as trucking and tracing, value added services, e.g. secondary assembly and installation of products, or even supply chain management. Also, the contract is required to contain some management, analytical or design activities, and the length of the co-operation between shipper and provider to be at least one year.”⁴⁸

⁴⁷ Berglund, M (2000) p 3

⁴⁸ Berglund, M (2000) p 17

This definition distinguishes third-party logistics from traditional “arm’s length” sourcing of transportation and/or warehousing. This means that this definition excludes execution of basic transportation activities that are not carried out in combination with warehousing and/or other activities. Warehousing can be excluded only if it is not part of the focal process, as logistic systems without inventories are becoming more common.⁴⁹

This definition requires that the service provider has to be an external, legally separated entity. The relevance of such a limitation can be questioned as internal entities might function in the same way as external ones. The limitation is used in order to secure that the relationship between the TPL provider and the shipper should be based on business requirements rather on the more uncertain intra-firm politics.⁵⁰

4.3.1 Third-party logistics compared to Traditional services

The development of TPL and the services that these companies’ offers have set new demands on the providers of the services not comparable with the traditional offerings. TPL services require a differently composed skill base of the provider compared with the traditional options. Compared to the traditional sources of services for supporting a logistics need, TPL services require TPL providers to have a broader range of activities constituting the services, a deeper understanding of the clients’ business, and different and closer forms of relationships with the buyers.⁵¹

Broader range of activities constituting the services

By definition TPL services are broader in terms of included activities than the functional support services they originate from. The skill base of the service providers must naturally encompass all that is needed to manage the broader range

⁴⁹ Berglund, M (2000)

⁵⁰ Berglund, M (2000)

⁵¹ Berglund, M (2000)

of activities. This represents an important difference between the providers of TPL services and the traditional options available for supporting logistics processes.

Deeper understanding of the clients business

As being an integrated collection of activities the underpinning logic of the service offering changes from functionally supporting clients' logistics processes to taking responsibility over parts of these processes. As the service shifts from being a functional support to a process component, the specifics of a particular client's business requirements becomes much more important. Thus compared to the traditional sources, logistics services require the service provider to have a deeper understanding of the client's businesses.

Different and closer forms of relationships between sellers and buyers

The TPL services, that are being components of client's logistics processes, integrate with client's business systems to a much higher degree. The traditional services e.g. in forwarding, warehousing and transportation have been governed primarily by arms-length contracts whereas the comprehensive TPL services reach closer to the client's core and are deeply integrated with the business systems and thus require a more long-term commitment. Compared to the traditional source for support in logistics, process oriented logistics services require a different and closer form of relationship.

TPL services are process oriented and cover all or a considerable number of the activities that is required for the buyers logistics needs. The traditional service offerings (forwarding, transport, warehousing, etc) all provide functional support within a limited range of activities. Therefore, TPL services can substitute forwarding, transport, or warehousing services as those activities are part of a TPL service, but the relation is not mutual. The traditional support services are not substitutes for TPL services, as they cannot replace the whole function performed by TPL without forcing the buyer to change his internal organisation.⁵²

52 Berglund, M (2000)

4.4 TPL Services and Offerings

In the TPL provider industry they usually talk about four different services as major, transportation, warehousing, IT, and value-adding services. The most dominant activities are transportation and warehousing. Lately, information based and value-added activities are increasing their share of services provided. But the turnover of these types of services is still very low compared to the industry total.⁵³

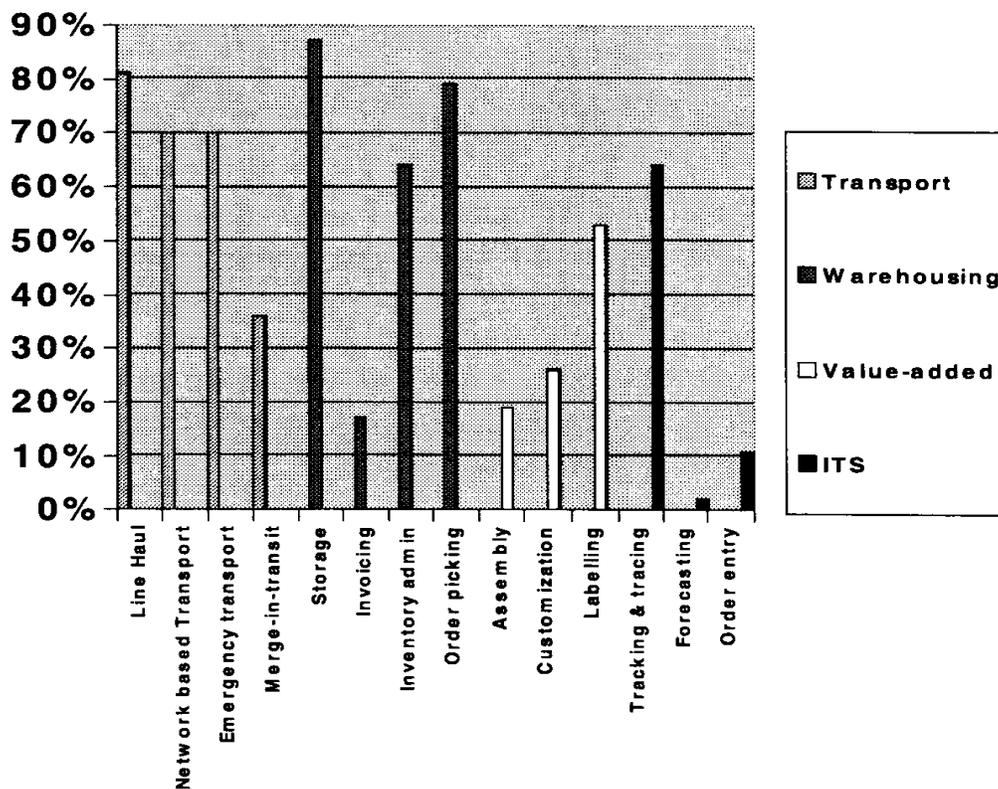


Figure 3 : Frequency of activities carried out by TPLPs as part of logistic offerings⁵⁴

The TPLPs industry has outlined a growth strategy of the business and the offerings. In general this includes growth of the activity portfolio both in terms of

⁵³ Berglund, M (2000)

traditional logistics related activities and more untraditional areas.⁵⁵ Service components such as emergency deliveries, packaging, repackaging, labelling, pricing, postponement, order, information processing, are regarded as newer additions to the TPLPs service portfolios and consequently occur in fewer cases. Emerging services are gaining ground in the market and include cross-docking, merge-in transit, allocation-in transit, call centres, and e-commerce applications. These new value-added services are creating logistic offerings that from an industry life-cycle perspective are at a development stage.⁵⁶

4.4.1 Outsourcing and subcontracting of services

Transportation is the production process (of logistical activities) that most commonly is subcontracted to lower tiers of companies. Warehousing which can be seen as the second major category of activities of logistics is subcontracted to a much lower extent than transport. The reason for warehousing being managed in-house to a large extent is that much of today's TPL contracts are in distribution or inbound logistics with a facility e.g. a warehouse as the center. The main reason for the fact that transportation is subcontracted to such a degree compared to the other activities is that scale determines cost. Furthermore, standard services in transport are generally accessible at a low cost and thus generate low value compared to other processes for TPLPs.⁵⁷

The sub-processes TPLPs would not consider outsourcing or subcontracting to lower tier providers is two different kinds;⁵⁸

- A specific functional activity often linked with respondents' origin or preferred image.

⁵⁴ Berglund, M (2000) p. 79

⁵⁵ Berglund, M (1997)

⁵⁶ Berglund, M (2000)

⁵⁷ Berglund, M (2000)

⁵⁸ Berglund, M (2000)

- Activities connected to management and coordination of logistical systems

The single part of the production process that providers would not consider subcontracting is information systems development. Other activities that are also not suitable for subcontracting in general are development, management, logistic design and engineering, and marketing and sales. This is due to the fact that these activities can be seen as the heart and backbone of the providing company. These activities are the core of the company.⁵⁹

For the foreseeable future the degree of transportation outsourcing will be further increased. Warehousing as the second major component of logistics will be subcontracted to a much higher degree than the current low levels. Value-added services will also be subcontracted to a higher degree.

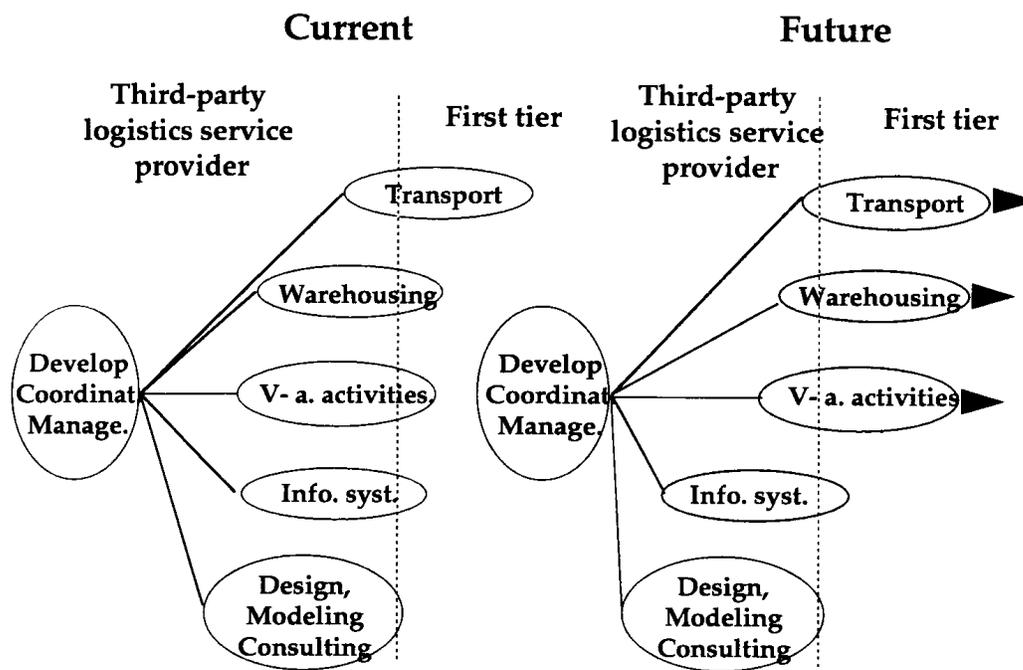


Figure 4: Trends in TPLPs use of subcontractors⁶⁰

⁵⁹ Berglund, M (2000)

⁶⁰ Berglund, M (2000) p. 82

These activities all have in common that they are operational and often labour intensive. It is due to these variables that they are preferably outsourced since there are other operators capable of performing the activities better, with a good service level to a low cost. The components that will be kept in-house by the providers are information systems, design or analysis, and development, coordination, or management activities.

4.4.2 Selecting a Provider

When a company has decided what services or activities to outsource its time to search for a suitable provider of these services. Whether you as a company are going to engage in a simple transactional arrangement or work toward a partnership solution, it is important to first establish the selection criteria. These criteria should encompass those strategic, tactical, and operational requirements that are critical to the company. While specific standards will vary with the outsourcing firm's unique needs, as well as the functions that are being outsourced, there are basic benchmarks that will be applicable to most arrangements. The different selection criteria is presented below.⁶¹

Financial Stability

It is absolutely critical that the selected company is financially sound. Many outsourcing programs can be quite large with significant start up expenses. The provider must have the financial resources to see the project through to profitability.

Business Experience

Experience in providing logistics services in general, as well as in the client industry, are extremely important. The provider must be well grounded in the services being provided and ideally will have experience in the client's own industry.

⁶¹ Lynch, C (2000)

Management Depth and Strength

When outsourcing it is important to remember that one of the products being purchased is expertise in providing the particular services. The logistics service provider must have a strong, skilled organisation, as well as adequate, qualified management.

Reputation With Other Clients

The best substitute for personal experience is that of other customers and clients. The provider should be asked to provide a client list with contacts and telephone numbers. When talking with other clients, it is important to determine if the provider does well in what they are told, or if they have a commitment to continuous improvements in performance and customer satisfaction.

Strategic direction

Just as the outsourcer should have a strategy, so should the provider. Granted, the logistics strategy of the client and the provider eventually should be one and the same, but the well managed service firm is one that will have some sense of its own goals and objectives as well. It should be well grounded in its current activities, but also have a strategy for expanding and improving on these. It should have commitment and direction.

Physical Facilities and Equipment

It goes without saying that the physical facilities must be sufficient to support the outsourced activity. Warehouse and transportation equipment should be clean, painted and well maintained. Regular preventive maintenance and replacement policies should be in place.

Operations

A careful evaluation of the provider's current operations will be required. This evaluation should include not only the basic physical operations, but also such things as commitment to best practices, housekeeping, attention to detail, human resource practices, and quality of procedures manuals.

Information Technology

In any logistics operation, state-of-the-art systems are critical. The evaluation of information technology assets will require knowledgeable experts in the field and should include such areas as hardware, software, operating systems, bar-coding, imaging, handheld devices, sensor based systems, satellite and other tracking systems. Very important will be an understanding of, and compatibility with, various ERP systems. Replacements and developmental budgets and schedules should be in place, and the entire function should be supported by sufficient, qualified staff.

Quality Initiatives

The progressive logistics service provider usually will have a formal quality or continuous improvement program. The provider selected must be one who is committed to continual performance improvement, and has an identified procedure for accomplishing this.

Growth potential

Most firms project ongoing growth and it is important for the logistics provider to be in a position to support that growth. While there probably will not be excess capacity immediately available, the selected provider should be in a position to provide that capacity or new services over a short or long term, depending on client requirements.

Cost

Cost should not be the first and foremost consideration. While it must be considered in the selection process, it should be a factor in deciding among firms that meet all the other criteria. The manager who selects a provider solely on the basis of costs has committed to an outsourcing strategy that will have little chance of success.

4.5 How can TPL providers create value?

The challenge that TPL providers face is to provide clients with services that add more value to the process of transformation, the production, than the client can achieve internally. This is done in a competitive situation against not only a multitude of other service providers, but also against the potential client's internal operations. Berglund (1997) argues that "all firms are in general capable of performing all types of logistical services/functions at the same performance level. The difference between them, therefore, basically depends on the different economical resources available for logistics within different firms".⁶² The basic difference in economic situation is that in logistics firms resources are allocated to logistics, whereas in the clients' organisations its one division among lots of others.⁶³ This naturally depends on the volume of activities, in comparison to the shippers' in-house operations.⁶⁴ Berglund (1997) explains how logistics providers can create value to the market. This value refers to the additional and extra value and external logistics service provider can bring to a client.⁶⁵

Berglund (2000) describes a number of different sources of the provider's advantage. Logistics expertise is one important factor according to Sheffi (1990). Sheffi believes that the main source for logistics expertise is the ability to attract talented personnel interested in logistics. Another source that is mentioned is the development of logistics systems that adds value for clients is affordable for the TPL providers. This is due to the larger sized logistical operations the providers have compared to the individual shipper. In most cases the providers are also able to deliver logistical services at a lower cost, by running several clients' operations in the same systems. The consolidation of volumes makes it possible to cut transport fees and average out seasonal and random variations in flow. However, according to Virum (1993), the providers' strategy is to compete on superior

⁶² Berglund, M (1997) p 61

⁶³ Berglund, M (1997)

⁶⁴ Berglund, M (2000)

performance rather than price. The outsourcing alternatives will be judged by a total cost approach or as a trade-off between the cost and perceived economic benefits. The reasons why external parties may provide more value in relation to cost, is partly to be found within the general area of economies of scale, scope, and factor costs.⁶⁶

Factor costs may be different for different organisations. Labour costs do vary significantly between different types of employees, unions, different geographic locations etc. Costs of other production factors may differ due to accessibility and the cost of resources. Since factor costs vary, different providers have unequal ability for providing low cost alternatives. Besides, it must be recognised that the cost of capital may vary significantly as well as the scale of operations which makes certain companies better positioned to provide services at low cost than others, especially when being asset based.⁶⁷

The relationship between cost and scale can be attributed to a set of sources. The main driving sources are, according to Pratten (1971): “indivisibility, increased dimension, specialisation, massed resources, superior techniques or organisation of production, the learning effect, and control of markets by vertical integration as well as bargaining power”.⁶⁸ Berglund (2000)) also mentions Pratten’s (1971) suggestions of sources of diseconomies: shortage of production factors, technical factors, management, labour relations and selling and distribution.⁶⁹

Economies of scale in transport are mainly achieved through development of networks and shipment consolidation, both requiring advanced rout planning. Moreover, when the size of operations grows large, effects of buying power become important, e.g., when forwarders source transportation and transportation

⁶⁵ Berglund, M (1997)

⁶⁶ Berglund, M (2000)

⁶⁷ Berglund, M (2000)

⁶⁸ Berglund, M (2000) p 113

⁶⁹ Berglund, M (2000)

companies acquire trucks. Warehousing, as the second largest activity within logistics, seems on the other hand not to be so greatly affected by economies of scale. Berglund mentions Pfohl et al. (1992) and their empirically based study showing that economies of scale are low in warehousing, especially in order picking activities. However, economies of scale in warehousing exist to some extent as sharing warehouse among several clients and reduce, overhead costs, capacity needs and increase the possibility of transportation consolidations.⁷⁰

Finally, Berglund (2000) mentions the concept of economies of scope, cost benefits achieved through doing different things, can be realised within logistics system by co-location of activities such as storage, terminal and handling. By using the same facilities, and to some extent (possibly by sequential use), the same production inputs/resources economies will appear.⁷¹

4.5.1 A framework explaining value creation for logistics providers

Berglund describes a framework for value creation available to logistics services providers. The framework explains the corner pillars, of value creation for logistics providers, in a simple understandable manner. This model enables and motivates innovative development of activities, so that these activities can be made to maximum value for customer Below the remainder of value creation is exposed.

⁷⁰ Berglund, M (2000)

⁷¹ Berglund, M (2000)

| | | | | | |
|-------------|------------------------|------------------------------------|--|---|--|
| Description | Operational Efficiency | Integration of client operations | Development of lower tier provider structure or horizontal integration | Engineering and integration of clients' supply chains | |
| | Driver of advantage | Factor costs Effects from focus | Scale | Asset reduction Scale Factor costs | Development of client business process |
| | Skills | Operations (IT) | Operations IT | Operations IT (Conceptual) | Operations IT Conceptual |
| | Example | Run warehouse efficiently | Share warehouse among several shippers | Outsourcing warehousing or transp. to lower tier provider | Cross-docking or other new concept |

Figure 5: Framework for value creation.⁷²

Below follows explanations of the four cornerstones in the figure.

Operational efficiency

The basic way for a logistics service provider is to create value for clients is to achieve operational efficiency at a higher level than alternative sources reach, and thereby provide a better service/cost ratio. This means by performing activities at a higher efficiency, as to say lower cost, than the customer. An example given on operational efficiency can be to run a warehouse efficiently. This requires adequate physical facilities and equipment and excellent operational skills.⁷³

Integration of a client's operations

The next step in the value creation framework builds on the simple idea that sharing resources gives lower costs. This could be done by introducing integration

⁷² Berglund, M (1997) p 65

⁷³ Berglund, M (1997)

of clients or, in other words to share resources among the different customers. An example of integration is given as multiple clients warehousing or transport-networks in which several clients operate jointly, using the same resources. Integration makes economies of scale.⁷⁴

Vertical or horizontal integration

The third corner stone of creating value springs from the advantages of subcontracting and outsourcing. This is a step for creating value to the logistics provider. Berglund (1997) discuss the concept of vertical integration, as the development of a lower tier of service provider structure. In vertical terms the TPL provider focuses on just producing services that are of core competence character, or by buying services where cost and performance benefits can be found. Secondly, Berglund discuss the benefits of horizontal integration. This means that the TPL provider can join forces with similar, probably not competing, companies. For example, this can be done to increase the geographic coverage offered to the customer.⁷⁵

Developing of clients' operations

The final way to create value to the customer, pointed out by Berglund, in his framework is to capitalise on the economic strength of the logistics service provider, which enables him to possess high level skills in logistics. High level skills in logistics are those needed for designing and analysing of customers logistics systems in order to understand the customers' overall business objectives. This view opens possibilities to create customer value from management of the total parts of the customer supply chain. The aim of this way of creating value is not to provide value through internal development, but by developing the client's organisation. This takes the service provider close to what traditional logistics consultants do.⁷⁶

⁷⁴ Berglund, M (1997)

⁷⁵ Berglund, M (1997)

⁷⁶ Berglund, M (1997)

4.5.2 Strategic positions and value creation of the TPL providers.

Positioning as strategy connects to actions and organisation, as Porter (1996) describes it. Berglund mention two different positioned providers, providers that offer a specific standardised service (standard service) versus providers that cover a complete range of services and offer their customers logistics solutions (solutions). When comparing standard service position and the solution position, the average revenues per contact and the average revenues per employee are substantially lower for those providers that concentrate on a particular standardised service, as a result of more requests for proposals. Moreover, the solution providers sub-contract (i.e., use second tire providers) to a much larger extent than those providers that offer standardised services. Finally, the key leverage mechanisms to add value to their customers differ between the providers in the two positions. The standard service providers claim they use operative competence, or in other words being able to execute in a superior way the particular service that they specialise in, whereas the solution category emphasise systems development and range of services.⁷⁷

Further, Berglund (2000) mention another variable or dimension empirically indicated as resulting in differently positioned (read strategy) providers, those that carry out basic logistics versus value-added logistics. The basic logistics category represents those TPLPs that provide integrated services consisting of only traditional transportation and warehousing activities. Value-added logistics are the providers that offer additional activities on top of the traditional transportation and warehousing activities. The providers in the value-added logistics position have a higher percentage of personnel working in general management and business development and have a higher percentage of value-added services.⁷⁸

The difference between the basic logistics position and value-added logistics is not as big as between standard service and solution. However, the difference in

⁷⁷ Berglund, M (2000)

growth expectancy between the two positions is a major one, with the value-added logistics provider expected their revenues to increase twice as much annually. Further, the providers in the value-added logistics position stress different forms of “functional problem solving” competencies, whereas the basic logistics category emphasise “cost efficiency” and operational as the most important for growth and development.⁷⁹

Consequently, the conclusions of Berglund (1997) and Berglund et al (1999) propose a position matrix based on the two main dimensions: degree of complexity in service offer measured through range of activities and standard service vs. solution. In the figure Berglund (2000) does show a first version of the strategic positions in the TPL industry along with examples of business missions along with characteristics of the different segments.⁸⁰

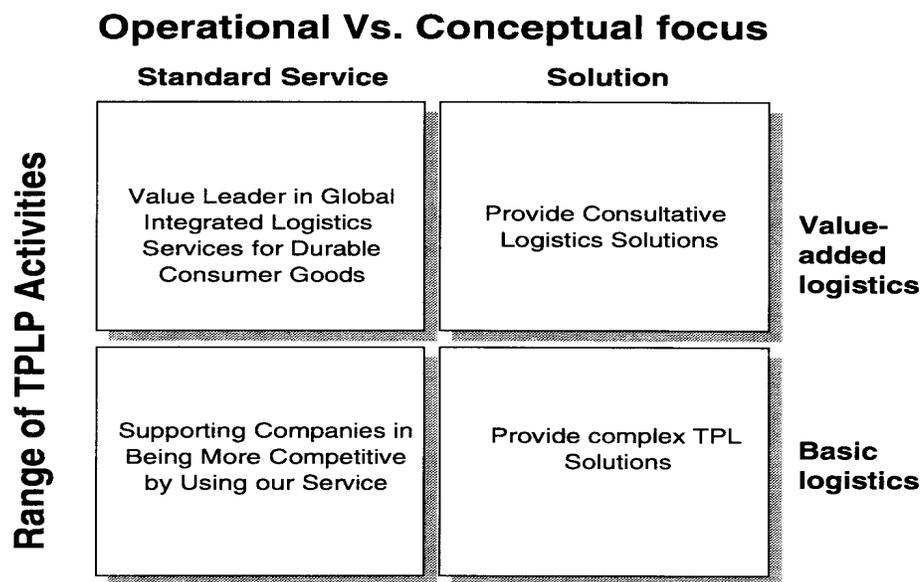


Figure 6 : Segmentation of the TPL industry, exemplified by key words from representative business missions.⁸¹

⁷⁸ Berglund, M (2000)

⁷⁹ Berglund, M (2000)

⁸⁰ Berglund, M (2000)

⁸¹ Berglund, M (2000) p. 131

Berglund (2000) continues by describing how to connect the positions to the value creation modes, the basic logic of the different positions importance and representing different customer value propositions.⁸²

| | Standard Service | Solution |
|-----------------------------------|---|---|
| Customer Value proposition | Specific competitive service at low cost based on specific service requirements. | Customized comprehensive offering at competitive cost based on a specific client's specific needs. |
| Customers | <ul style="list-style-type: none"> - Many - Logistics management is core - Standard concepts - Multiple sources | <ul style="list-style-type: none"> - Few, large - Logistics management is non-core - Complex situations - Single sourcing |
| Advantages | Focus, sharing, scale | Complexity management subcontracting skills |

□

*Figure 7 : Differences between the two main propositions of the operational vs. conceptual focus dimension.*⁸³

4.5.2.1 Standard Service

The standard service position is characterised by the TPLPs ability to create a few standardised logistics processes, and make these efficient. By standardisation the range of variation in service delivery, which naturally yields benefits such as the services, through aspects like focus, learning, sharing, and scale, which are made competitive in terms of cost of performance. These standardised services must be built around some specific service requirements, normally based on specific assets of specific client characteristics. The customer value propositions active in the

⁸² Berglund, M (2000)

⁸³ Berglund, M (2000) p. 137

standard service position are then “specific competitive service at low cost or high performance based on specific requirements”.⁸⁴

This kind of customer value proposition demands certain characteristics of the clients, other than just looking for the specific logistics process available as a standardised service. Clients must accept being one client among many, all using the same service and thus sharing systems and resources. Further, the client must appreciate a standardised service and correspondingly keep logistics management as an internal process. Standardised services must be developed with specific service requirements as specific assets as the base, which is focused on the providers’ internal processes. Consequently, clients opting for a standardised service must retain skills in logistics management in order to be able to evaluate different services and decide which fits their requirements best. If the trading or manufacturing company considering using standardised services has a wide range of service requirements, a total TPL solution will consist of different services from multiple sources.⁸⁵

4.5.2.2 Solution

Considering the other main position of the operational vs. conceptual focus dimension the customer value proposition is much different and Berglund (2000) state it as “customised comprehensive offering at competitive cost based on specific client’s specific needs”.⁸⁶ The logic behind the solution position is that these providers focus on developing solutions for specific clients’ requirements, meaning that the value primarily comes from complexity and the ability to tailor solutions. As with the customers that choose standardised services, those that go for solution providers will have certain characteristics. TPLPs that are good at designing logistics processes as solutions for clients’ logistical requirements do

⁸⁴ Berglund, M (2000) p 136

⁸⁵ Berglund, M (2000)

⁸⁶ Berglund, M (2000) p 137

this in competition with a range of standardised services, management consultants as well as with clients' own ability to co-ordinate services from functional support providers or internal support activities in forwarding, transport and warehousing. Respectively, the clients of solution providers have to be prepared to let the providers take responsibility for logistics management. Logistics management responsibilities for solution providers means to do it from a client's perspective and not only the logistics management that is required for producing a logistics service which naturally even standardised service providers must do. Solution clients consider, logistics management to be a non-core activity and evaluate different providers' capabilities rather than services and decide upon which partner that fits their requirements and management culture best. Moreover, in order for solution providers to be competitive compared to standardised services, the outsourced process must be rather complex and/or specific and hard to standardise and offer too many clients, i.e. a client's ambition to use single sourcing for a wide total business solution.⁸⁷

Solution providers tend to work with larger and fewer client assignments than the standardised service providers, and must base their solutions on efficient operations. In order to achieve efficient operations solutions providers tend to outsource activities to functional support providers to a larger degree than standardised service providers do. Therefore, subcontracting skills, which include external relationship management, are a necessity.⁸⁸

Returning to the value creation modes, operational efficiency and integration of customer operations will tend to dominate in standard service positions. Whereas the vertical or horizontal network development, supply chain management & integration, and change management modes are trademarks of the solution providers' means of creating value.⁸⁹

⁸⁷ Berglund, M (2000)

⁸⁸ Berglund, M (2000)

⁸⁹ Berglund, M (2000)

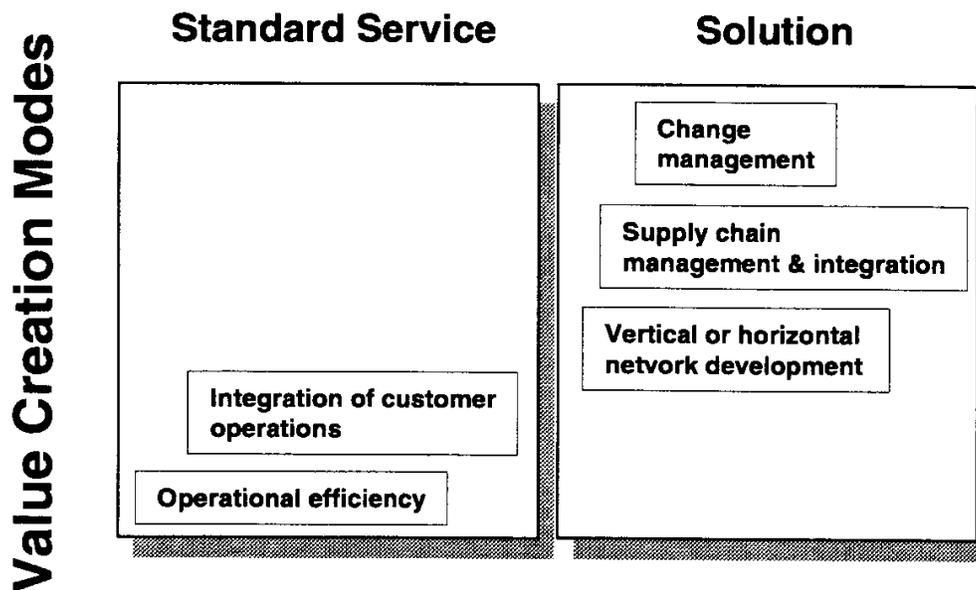


Figure 8 : Dominating connections between value creation modes and the two main positions of the operational vs. conceptual focus dimension.⁹⁰

4.6 Organisation

Every organisation makes a product or performs a service, and at the heart of an organisation is the set of activities directly concerned with making this product/service. These activities are the operations, and are the organisation's most important function. Operations management is concerned with the way operations are performed.⁹¹

4.6.1 Operations management

Operations management function is defined by Waters (1996) as "the management function that is responsible for all activities directly concerned with making a

⁹⁰ Berglund, M (2000) p. 138

⁹¹ Water, D (1996)

product. It is responsible for collecting various inputs and converting them into desired outputs”.⁹²

From this definition one can see how organisations take a variety of inputs, and perform the operations needed to convert these into desired outputs. The inputs can include raw materials, money, people, machines, time, and other resources. Operations can include manufacturing, assembly, packing, serving, training, and so on. The output can include goods, services, staff wages, waste material etc. It is important to emphasise again that products can be either tangible goods or intangible services, and operations are any activities that produce these.⁹³

4.6.1.1 Central functions in an organisation

Waters (1996) argues that “the main purpose of an organisation is to produce goods and services that satisfy customer demand.”⁹⁴ From this statement he identifies three central functions that must exist in all organisations. These are described below.⁹⁵

- *Sales/marketing* – This identifies customer demand, stimulates new demand, collects and analyses information on customer needs, organises advertising, take orders, make sure that products are delivered to customers/ services are performed, give after-sales service, and so on.
- *Operations management* – This is responsible for actually producing the goods and services.
- *Accounting / finance* – This raises capital, invests funds, records financial transactions, collects money, pays bills, collects cost information, maintains accounts, and so on.

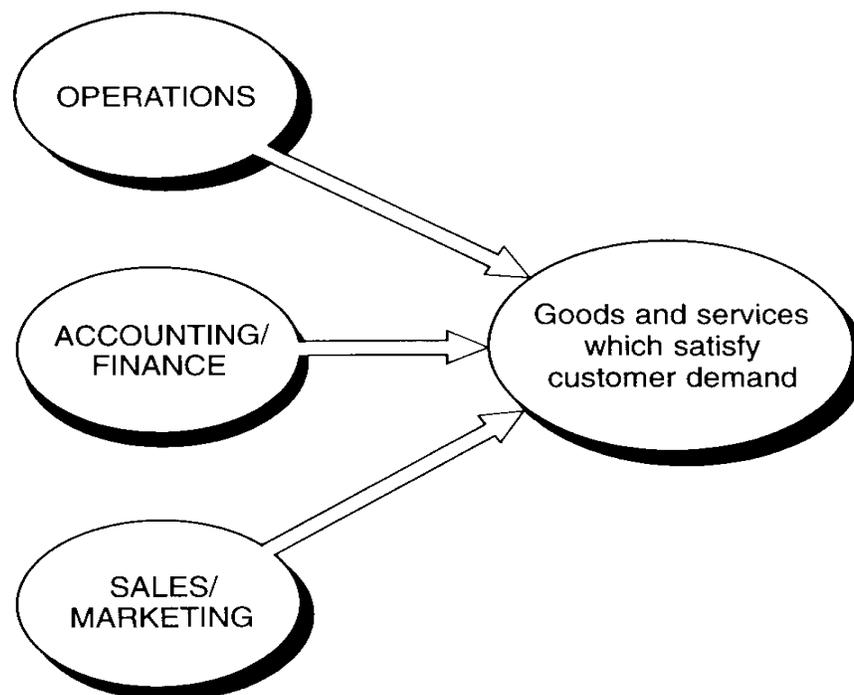
⁹² Waters, D (1996) p. 19

⁹³ Water, D (1996)

⁹⁴ Waters, D (1996) p. 25

⁹⁵ Waters, D (1996)

These central functions are directly concerned with the product, however Waters (1996) argues that many people might say that an organisation needs many other functions, such as human resources, research and development, catering, computer services, administration and public relations, but these can either be included in one of the central functions, or they are not directly concerned with the product. The three central functions work together to achieve the goals of the organisation.



*Figure 9 : Central functions in an organisation.*⁹⁶

The functions exist in all organisations, but the emphasis put on each will vary. Waters (1996) continue by stating that during the 1970s companies tended to emphasise marketing, while 1980s saw a move towards stronger financial management. More recently it has been realised that the long-term survival of any organisation depends on its ability to satisfy customer demand, the emphasis has moved to operations management. This recognises the fact that the operations of a

⁹⁶ Waters, D (1996) p. 27

typical organisation employ the majority of people, use most assets and generate all income.⁹⁷

4.7 Warehouse Management

4.7.1 Warehouse alternatives

In warehousing there are three types of warehouses i.e., private, public and contract. A *private warehouse* facility is owned and managed by the same enterprise that owns the merchandise handled and stored at the facility. A *public warehouse*, in contrast, is operated as an independent business offering a range of services, such as storage, handling, transportation. Public warehouse operators generally offer relatively standardised services to all clients. *Contract warehousing*, which is evolving from the public warehouse segment, provides benefits of both the private and public alternatives. Contract warehousing is a long term, mutually beneficial arrangement which provides unique and specially tailored warehousing and logistics services exclusively to one client, where the vendor and client share the risk associated with the operation. Important dimensions that differentiate contract warehousing operators from public warehouse operators are the extended time frame of the service relationship, tailored services, exclusivity, and shared risk.⁹⁸

4.7.2 Warehousing strategy

When a producing company is about to set the warehousing strategy for its merchandise, there are a number of dimensions that have to be taken into consideration: industry synergies, operating flexibility, location flexibility, scale economies, and presence synergies. These dimensions will be discussed below,

⁹⁷ Waters, D (1996)

first with a description of the dimension and then what kind of warehouse that takes benefit from it. As a warehouse service provider it is important to know about these dimensions so they can be improved in order to be able to offer the best total solution for the customer.⁹⁹

Industry synergies refer to the operating benefits of collocating with other firms serving the same industry. For example, firms in the grocery business often receive substantial benefits when they share public warehouse facilities with other suppliers serving the same industry. Reduced transportation cost is the major benefit since joint use of the same public warehouse allows frequent delivery of consolidated loads from multiple suppliers. Public and contract warehousing increases the potential for industry synergy.

Operating flexibility refers to the ability to adjust internal policies and procedures to meet product and customer needs. Since private warehouses operate under the complete control of the enterprise, they are usually perceived to demonstrate more operating flexibility. On the other hand, a public warehouse often employs policies and procedures that are consistent across its clients to minimise operating confusion. While conventional minds would suggest that private warehouses can offer more operating flexibility, there are many public and contract warehouse operations that have demonstrated substantial flexibility and responsiveness.

Location flexibility refers to the ability to quickly adjust warehouse location and number in accordance with seasonal or permanent demand changes. For example, in-season demand for agricultural chemicals requires that warehouses be located near market that allow customer pick-up. Outside the growing season these local warehouses are unnecessary. Thus, the desirable strategy is to be able to open and close local facilities seasonally. Public and contract warehouses offer the location flexibility to accomplish such requirements.

⁹⁸ Bowersox, D (1996)

Scale economies refer to the ability to reduce material handling and storage cost through application of advanced technologies. High volume warehouses generally have a greater opportunity to achieve these benefits because they can spread technology's fixed cost over larger volumes. In addition, capital investment in mechanised or automated equipment and information technology can reduce direct variable cost. Public and contract warehouses are generally perceived to offer better scale economies since they are able to design operations and facilities to meet higher volumes of several clients.

Presence synergies refer to the marketing benefits of having inventory located nearby in a building that is clearly affiliated with the enterprise. It is widely thought that customers are more comfortable when suppliers maintain inventory in nearby locations. Products and customers that benefit from local presence should be served from private or contract facilities.

4.7.3 Value-Added Warehousing

In addition to traditional economic and service benefits, warehouse operators must offer other value-added services to remain competitive. Warehouse value-added services may focus on packaging and/or production.¹⁰⁰

The most common value-added services relate to packaging. Product is shipped to the warehouse in bulk or unlabeled form, so inventory is undifferentiated. Once a customer receives an order the warehouse operator customises and releases the product. Warehousing can increase the value added by refining product packaging to better meet the needs of customers down the chain.¹⁰¹

Warehousing can also complete production activities to postpone product specialisation and refine product characteristics. At times reassemble at a warehouse may be done to correct a production problem. Another value-added

⁹⁹ Bowersox, D (1996)

¹⁰⁰ Bowersox, D (1996)

¹⁰¹ Bowersox, D (1996)

service is climatising products such as fruits and vegetables. Warehouse operators can promote or delay the ripening process of bananas depending on the storage temperature. The product can be ripened as required by market conditions.¹⁰²

Providing value-added warehousing services sets a special responsibility on the warehouse operator or the distribution center manager overseeing the contract operations. While outsourcing operations may increase inventory effectiveness and operating efficiency, it also takes key responsibilities outside the control of the firm. The warehouse must learn to operate to the same quality and service standards as the outsourcing firm.¹⁰³

The global marketplace represents an added opportunity of value-added services. As goods are shipped over longer supply lines, the importance of value-added services at the warehouse level increases. Deregulation has also provided new opportunities for logistics suppliers to diversify as markets have presented such challenges. Logistic service suppliers have responded to this challenge, and it is likely they will continue to use their creativity to develop new ways to add value to the product at the warehouse level.¹⁰⁴

4.7.4 Initiating warehouse operations

There are a number of things that management must think about before initiating operations. In this part six different areas are covered e.g., stocking the warehouse, personnel training, developing work procedures, security systems, billing and inventory control, safety and maintenance.¹⁰⁵

¹⁰² Bowersox, D (1996)

¹⁰³ Bowersox, D (1996)

¹⁰⁴ Bowersox, D (1996)

¹⁰⁵ Bowersox, D (1996)

Stocking the warehouse

The ideal procedure to follow when stocking a warehouse is to obtain the complete inventory prior to initiating operations. Individual products to be distributed through the warehouse and the quantities of each basic inventory stock-keeping unit should be determined when the warehouse is planned.

Personnel training

Hiring and training qualified personnel to operate a warehouse can be a serious problem. Regardless of how efficient the proposed system is in theory, in practice it will be only as good as the operating personnel. Proper training is necessary to ensure desired results. Training is not a difficult task if executed properly. The full workforce should begin prior to the arrival of merchandise. Personnel hired for specific assignments should be fully integrated in their job requirements and the role they play in the total system. After integration, each group of employees should be given specific training. Personnel hired to operate a warehouse may be grouped in the following categories: administrators, supervisors, selectors, equipment operators, labourers, material handlers, and miscellaneous workers (maintenance, salvage, etc.). Prior to actual operations it is desirable to simulate the various activities that each group of workers will perform. This type of training provides hands-on experience under near typical working conditions.

Developing work procedures

The development of work procedures goes hand-in-hand with training warehouse personnel. Design of a material-handling system generally include work procedures. It is management's responsibility to see that all personnel understand and use these procedures.

In the mechanised warehouse, approximately 65 percent of the floor personnel are employed in some phase of order selection. Modifications of two basic methods of order picking are employed in distribution warehouses: individual selection and area selection. Under the individual system, one selector completes a total order. This system is not widely used. Its primary application occurs when a large

number of small orders are selected for repack or consolidated shipment on the same truck. Under the more commonly used area selection system, each selector is assigned a certain portion of the warehouse and many selectors handle portions of the same order. Because each selector has a thorough knowledge of the selection area, no time is lost in locating items.

Specific procedures must also be established for receiving and shipping. Merchandise received must be checked to ensure its entry into the inventory accounting system. If pallets are used the merchandise must be stacked in patterns to ensure maximum load stability. Personnel working in shipping must have knowledge of loading procedures.

Work procedures are not restricted to floor personnel. A definite procedure must be established for proper handling of inventory control records. Most firms employ some type of automatic data processing equipment. The purchasing or recording of merchandise for the warehouse can cause a serious operational problem if proper procedures are lacking.

Security Systems

Security in a warehouse involves protection against merchandise pilferage and deterioration. Both cases of security are important for the management to take into consideration.

Pilferage protection – Protection against theft of merchandise has become a major factor in warehouse operations. Such protection is required with respect to employees and as a result of the increased vulnerability of firms to riots and civil disturbances. All normal precautions employed throughout the company should be strictly enforced at each warehouse. Security begins at the fence. As standard procedure only authorised personnel should be permitted into the facility and surrounding grounds, and entry to the warehouse yard should be controlled through a single gate. Shortages are always a major consideration in warehouse operations. Many are honest mistakes in order selection and shipment, but the purpose of security is to restrict theft from all angles. The majority of thefts occur

during normal working hours. Computerised inventory control and order processing systems help protect merchandise from being carried out of the warehouse doors. No items should be released from the warehouse unless accompanied by a computer release document. If samples are authorised for use by salespersons, the merchandise should be separate from other inventory.

Product Deterioration – Within the warehouse a number of factors can reduce a product or material to a non-usable or non-marketable state. The most obvious form of product deterioration is damage from careless transfer or storage. Another major form of deterioration is non-compatibility of products stored in the same facility. The primary concern is deterioration that results from improper warehouse work procedures. The warehouse represents an environment that must be carefully controlled or measured to provide proper product protection. A constant concern is the carelessness of warehouse employees. In this respect the forklift truck may well be management's worst enemy. Regardless of how often operators are warned against carrying overloads, some still attempt such shortcuts when not properly supervised. Product deterioration from careless handling within the warehouse is a form of loss that cannot be insured against and constitutes a 100 percent cost with no compensating revenue.

Billing and Inventory Control

Most firms handling a large number of products with varied characteristics find it economical to employ computers for billing and inventory control. Receipt tickets are prepared for each case of merchandise at the warehouse. When an order is received, products are listed according to warehouse placement. The computer inventory should sometimes be compared with a physical inventory in order to ensure accuracy in receiving and shipping records. On a periodic basis all inventory should be cycle counted to match physical inventory with the book inventory maintained by the computer.

Safety and Maintenance

Accident prevention is a major concern within the warehouse. A well-balanced safety program should include constant examination of work procedures and equipment to locate and correct unsafe conditions before they result in accidents. Accidents occur when workers become careless or are exposed to mechanical and/or physical hazards. Work environment has become a major concern of government and cannot be neglected by management.

A preventive maintenance program is necessary for material handling equipment. Unlike production machines, movement equipment is not stationary, and it is easy to neglect proper maintenance. A preventive maintenance program requiring a periodic check of all handling equipment should be installed in every warehouse.

4.8 Information Systems

Information is viewed as one of the keys to logistics competitive advantage for the future. However, just the simple existence of a logistics system is not enough to achieve this goal. Competitive logistics information system (LIS) must build on transaction system foundation to include management control, decision analysis and strategic planning modules. As the modules are developed or refined, state-of-the-art LIS must incorporate the characteristics of information accuracy, timeliness, exceptionality, flexibility, and appropriate formatting.¹⁰⁶ Bowersox (1996) describes this in more detail within the areas of information functionality and the different principles of logistics information, which are discussed in the following sections.

4.8.1 Information Functionality

Logistics information systems are the threads that link logistics activities into an integrated process. Bowersox (1996) describes this integration being built on four

levels of functionality: transaction, management control, decision analysis, and strategic planning systems. The figure below illustrates logistics activities and decisions at each level of information functionality.

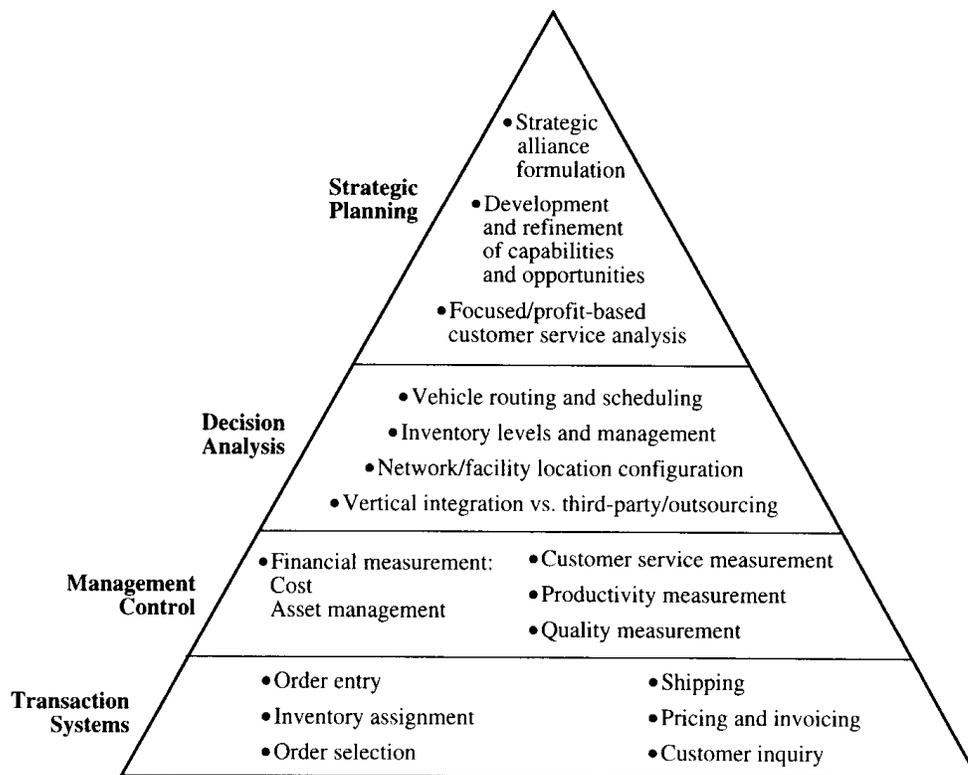


Figure 10 – Information functionality¹⁰⁷

The basic level, the transaction system, initiates and records individual logistics activities. Transaction activities include order entry, inventory assignment, order selection, shipping, pricing, invoicing, and customer inquiry. The transaction system is characterised by formalised rules, inter-functional communications, a large volume of transactions, and an operational day-to-day focus. The

¹⁰⁶ Bowersox, D et al (1996)

¹⁰⁷ Bowersox, D et al (1996) p 187

combination of structured processes a large transaction volume places a major emphasise on information system efficiency.¹⁰⁸

The second level, management control, focuses on performance measurement and reporting. Performance measurement is necessary to provide management feedback regarding service level and resource utilisation. Accordingly, management control is characterised by an evaluative, tactical, intermediate-term focus that evaluates past performance and identifies alternatives. Common performance measures include financial, customer service, productivity, and quality indicators. While it is necessary that logistics information systems (LIS) report past logistic system performance, as is also important that LIS be able to identify exceptions as they are being processed. Management control exception information is useful to identify possible customer or order problems. For example a proactive LIS should be capable of predicting future inventory shortages on the basis of forecasted requirements and anticipated receipts. Some management control measures, such as cost, are very well-defined, other measured such as customer service are less specified.¹⁰⁹

The third level, decision analysis, focuses on decision applications to assist managers in identifying, evaluating, and comparing logistics strategic and tactical alternatives. Common decision analyses include vehicle routing and scheduling, inventory management, facility location, and cost-benefit analysis of operational trade-offs and arrangements. Decision analysis LIS must include database maintenance, modelling and analysis, and reporting components for a wide range of potential alternatives. Decision analysis is characterised by a tactical, evaluative focus. Decision analysis needs to be relatively unstructured and flexible to allow consideration of a wide range of options, as it focuses on evaluating future tactical alternatives. For that reason, users require more expertise and training to benefit from its capacity, and LIS emphasis to effectiveness (identifying profitable versus

¹⁰⁸ Bowersox, D et al (1996)

¹⁰⁹ Bowersox, D et al (1996)

unprofitable accounts) rather than efficiency (faster processing or increased transaction volume while utilising fewer staff resources).¹¹⁰

The final level, strategic planning, focuses on information support to develop and refine logistics strategy. These decisions are often extensions of the decision analysis level but are typically more abstract, less structured, and long-term in focus. Examples of strategic planning decisions include synergies made possible through strategic alliances, development and refinement of firm capabilities and market opportunities, as well as customer responsiveness to improved service. LIS strategic planning level must incorporate lower-level data collection into a wide range of business planning and decision-making models that assist in evaluating the probabilities and payoffs of various strategies.¹¹¹ Bowersox (1996) presents system usage and decision characteristics along with justification for each level of LIS functionality in the following figure.

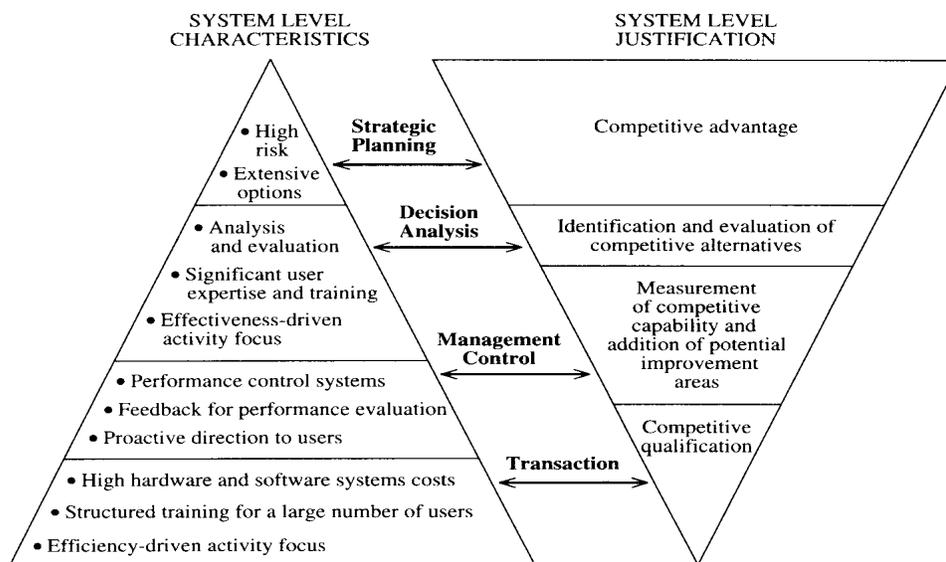


Figure 11 - LIS usage, decision characteristics, and justification¹¹²

¹¹⁰ Bowersox, D et al (1996)

¹¹¹ Bowersox, D et al (1996)

¹¹² Bowersox, D et al (1996) p 189

The relative shape of the figure illustrates LIS development a benefit-cost characteristics. The left side illustrates the development and maintenance characteristics, while the right side shows the benefits. Development and maintenance costs include hardware, software, communications, training, and personnel. A solid base requires greater LIS investments for transaction systems and corresponding reductions in investment for higher system levels. Transaction system costs are high because of the large number of system users, heavy communication demands, high transaction volume, and significant software complexity. Transaction systems are also rather well- defined and show more certainly with respect to benefits or returns. The one that uses higher-level systems must invest more in time, training, and strategic decision making, and respectively acquire more uncertainty and risk with regard to system benefits.¹¹³

Bowersox (1996) does also illustrate relative benefits of each LIS level in his figure. Transactions system benefits of efficiency involve faster processing and fewer staff resources. However, communication and processing speed have increased to the point where these characteristics are a competitive qualifier rather than a competitive advantage. Effective management control and decision analysis provide benefits of strategic insight into competitive capability and alternative strategy formulation, i.e. it may demonstrated a firm's ability to leverage price, or external customer service audits may identify opportunities for selective, customer-focused programs. Finally, strategic planning ability to assess customer/product profitability, segment contribution, or alliance synergies can have a major impact on enterprise profitability and competitiveness.¹¹⁴

Most expenditures used to focus on improving transaction system efficiency, however recent LIS applications focus on management control, decision analysis, and strategic planning components. An example could be warehouse and transportation transaction systems are incorporating significant management controls to measure labour and facilitate productivity. The productivity measures

¹¹³ Bowersox, D et al (1996)

are used to reward good performance and improve poor performance. For decision analysis, many LIS integrate quantitative models to assist in evaluating distribution facility location, inventory levels, and transportation routes. Newer LIS applications are also being developed in combination with reengineering processes, in order to reduce the number of cycles and sequential activities.¹¹⁵

4.8.2 Principles of Logistics Information

Bowersox (1996) describe six principles that must be fulfilled by the logistics information systems in order to meet management information needs, and sufficiently support enterprise planning and operations. Those principles are described below.¹¹⁶

Availability-Logistics information must be readily and consistently available. Rapid availability is necessary to respond to customers and improve management decisions. The decentralised nature of logistics operations requires that information is capable of being accessed and updated from anywhere in the country or world, therefore information availability can reduce operating and planning uncertainty.

Accuracy- Logistics information must accurately reflect both current status and periodic activity for measures such as customer orders and inventory levels. Accuracy is defined by Bowersox (1996) as “the degree to which LIS reports match actual physical counts and status.”¹¹⁷ Increased information accuracy decreases uncertainty and reduces inventory requirements.

Timeliness- Logistics information must be timely to provide quick management feedback. Timeliness refers to the delay between when an activity occurs and

¹¹⁴ Bowersox, D et al (1996)

¹¹⁵ Bowersox, D et al (1996)

¹¹⁶ Bowersox, D et al (1996)

¹¹⁷ Bowersox, D et al (1996) p 191

when the activity is able to be seen in the information system. Timeliness in the information system refers to system status, such as inventory levels, as well as management controls, such as daily or weekly performance reports. Timely information reduces uncertainty and identifies problems, hence reducing inventory requirements and increasing decision accuracy.

Exception-Based LIS- LIS must be exception-based to highlight problem and opportunities, because of the fact that logistics operations contend with a large number of customers, products, suppliers, and service companies. State-of-the-art LIS as Bowesox (1996) describes it, incorporate decision rules to identify these exception situations that require management attention and/or decision making. By doing this, planners or managers are able to focus their efforts on situations that need the most attention or offer the best opportunity to improve service or reduce cost.

Flexibility- Logistics information systems must have the capability to be flexible in order to meet the needs of both customers and system users. Information systems must be able to provide data modified to specific customer requirements.

Appropriate format- Logistics reports and screens should be appropriately formatted, in other words contain the right information in the right structure and sequence.

5 INTERVIEWS

In this section we will present the interviews that we have done in this thesis. The interviews have been made to get an input of information to be able to solve the purpose and problem of this research. The research methodology we have used is presented in Chapter 3.

5.1 Interviews with existing customers

Questionnaire for interview with existing customers will be found in Appendix 3.

5.1.1 Flota Suardiaz

Hyundai Sweden Shipping Agency

Interview with Dennis Bech manager RO-RO-Dept.

4 September 2002

1 Business activities?

Facts about the company, Geographical coverage, Largest customers, Type of goods and origin

Dennis Bech is working at Hyundai Sweden Shipping Agency AB, which is also the agent for Flota Suardiaz. Flota Suardiaz started operating in Sweden 1 of January 1999. At that time they were using Gothenburg as their Swedish port. They started to operate from Wallhamn 1st of January 2000. They decided to do this because of reasons such as, long waiting time to get a quay berth which affected the total time in the port, no further access to more space in the port of Gothenburg which limited their possibilities to grow. By operating in Wallhamn, Flota Suardiaz could lower their costs, get a higher level of service resulting in faster production and get a high level of flexibility. Flota Suardiaz has weekly traffic from Wallhamn and has a geographical coverage including Denmark,

Netherlands, France, Spain, Portugal and Morocco. The goods carried by Flota Suardiaz are mainly trucks, busses heavy machines, wood products, break bulks.

2 How big is Wallhamn's share of the total flow of goods transported?

Wallhamn is the only Swedish port where Flota Suardiaz operates today. During 2001 they handled 11 000 length meters Ro-Ro and 8000 m³ conventional goods. Flota Suardiaz carries 1/5 of the total amount of goods transported by Hyundai Sweden shipping Agency AB.

3 What activities are you as a company buying from Wallhamn today?

The activities that Flota Suardiaz is buying from Wallhamn today are stevedoring, clearance and other terminal work.

4 Are there other activities that you wish/ would like Wallhamn to offer?

In our opinion we believe that Wallhamn is rather complete. It is bad for them that they loose Toyota because that might give the impression on other actors and decrease the possibilities of attracting new customers to the port.

5 What is needed from Wallhamn for you to increase the number of activities you buy from them?

Nothing in particular, it is just a question about were the owners of the shipping companies decides to do their operations. Wallhamn has a very modern PDI plant and that is something that we can use. A possibility could be to transport the cars from the Port of Gothenburg to Wallhamn and do all the necessary PDI work up

there. Another advantage is the space available for storing cars which is a problem in Gothenburg.

In August, 80 % of Hyundai Sweden Shipping Agency AB was sold to Wilhelmsson & Wallenius, and they keep the 20% by themselves to secure their car transports. This will result in a lot of restructuring, and therefore it's hard to tell how they want to operate and which ports in Sweden they decide to use. Another thing concerning adding more activities done by Wallhamn is that most of our customers run their own flows of goods which also include the transport from Wallhamn. They buy the sea transport, reloading and disposition in terminal. This means that we as a shipping agent does not include the whole transport chain from origin to end customer in our services however, we do have the possibility to help our customers finding forwarding agents or other haulage companies.

6 What is your personal opinion/idea about Wallhamn seen as a logistic centre, and their possibilities for success?

They do have all the necessary resources and assets for operating as a car port, including enormous storing areas and a modern PDI plant. A disadvantage is that they lack a connecting railway in the port however, they could develop their transport service from the railway station in Stenungsund to Wallhamn. With modern ways of production i.e., JIT the companies doesn't use railway to the same extent any more, however, railway is still the best transport alternative for wood products coming from north of Sweden.

I do believe there is a future for Wallhamn, it is important to safeguard the competition on the market. Gothenburg wants to be a car and container port so I think it's important for Wallhamn to keep their high level of flexibility to suit customers that Gothenburg and other ports don't want. Use existing customers' names to generate new ones. Another possibility is to make Wallhamn a feeder port to let say Norway and Denmark, however this demands that they find a few feeder operators.

5.1.2 Grimaldi

Grimaldi Maritime Agencies Sweden AB

Interview with Sven Göran Sjöström

5 September 2002

1 Business activities?

Facts about the company, Geographical coverage, Largest customers, Type of goods and origin

Grimaldi is an Italian shipping company that has full service in Sweden and Norway. They use Wallhamn to cover these markets. This makes them the single largest customer of Wallhamn. The goods that arrive at Wallhamn come mainly from the Mediterranean countries but also from Portugal, England and Ireland. The shipping company also offers transport lines to West Africa and South America both via Antwerp. Grimaldi anchors once a week at Wallhamn with Ro-Ro - multi purpose ships. The goods they ship are mainly new cars, Saab and Volvo for export and Fiat, Opel and Alfa Romeo for import. They do also ship a large variety of mixed goods and paper and timber for export. The mixed goods are mainly transported in containers that is rolled on to the ship.

2 How big is Wallhamn's share of the total flow of goods transported?

3 What activities are you as a company buying from Wallhamn today?

The service that Grimaldi buys from Wallhamn is the loading and unloading of the ships. They also uses storage services for certain goods. Grimaldi is also part of a project that includes imported groceries like canned tomatoes that are shipped in containers. Wallhamn is in this project "stripping" the container and puts the

goods on pallets in batch sizes that suits the different end customers needs. The transport company TT-Trans is also a part of this project and they have the road transports as their obligation.

4 Are there other activities that you wish/ would like Wallhamn to offer?

Grimaldi is very pleased with the service they get at Wallhamn today. The quality of the services in the port according to Grimaldi is the best according to an investigation that Volvo made over quality in ports where Wallhamn topped the list in 1997. Grimaldi believes it is mainly due to the extremely good spirit of the workforce and the flexibility of the organisation and operations that Wallhamn can keep the high level of quality.

5 What is needed from Wallhamn for you to increase the number of activities you buy from them?

The Fiat, Opel and Alfa Romeo cars that are unloaded in Wallhamn are stored for a short time and then transported to Gothenburg where all PDI work is done. Since Wallhamn has state-of-the-art facilities for these kind of operation Grimaldi feel it would make sense both in efficiency and economy to do these operations at Wallhamn. But the decision of where to do the PDI work is not theirs, it is the importer Italienska Bil's. Grimaldi and Wallhamn is trying to convince the importer to do the PDI work at Wallhamn but so far without success.

6 What is your personal opinion/idea about Wallhamn seen as a logistic centre, and their possibilities for success?

The respondent's opinion, if Wallhamn can develop their operations into including more logistic activities and attract more customers, was quiet positive. He believes that Wallhamn can handle almost all kinds of goods due to their good flexibility and that they can do it to a good and competitive price. His opinion was also that

Wallhamn should concentrate on goods coming in or going out the seaway with the shipping companies. Wallhamn's competitive strengths are according to the respondent flexibility and price. The negative aspects of Wallhamn are mainly the geographic location and the absence of railway. They also think Wallhamn has to work harder on convincing the importers to choose Wallhamn for their goods. The port has to be more market oriented and work more actively to get new customers and shipping companies to the port.

5.1.3 Samskip

Samskip

Interview with Arne Pålsson, Manager Operations

11 September 2002

1 Business activities?

Facts about the company, Geographical coverage, Largest customers, Type of goods and origin

Samskip is an Icelandic shipping company with headquarters in Reykjavik where they also have got their own logistic centre. They have got their own container , fishing and refrigerated truck fleet, and are offering a lot of door-to-door services. In Sweden Samskip is sailing to Varberg several times a week, they also sailing express lines where they anchor at Wallhamn and Halmstad. They do also sail to Lysekil with paper goods both for export and import. Samskip is also co-operating with other shipping companies for certain markets especially Russia and the Balkan countries. The largest customers are the paper industry, packaging materials and the furniture industry.

In Wallhamn the largest customers are Nordic Bulkers and the industries in Stenungsund, and the goods are mainly shipped in full containers. The Samskip

ships comes to Wallhamn once a week and anchors in the beginning of every week.

2 How big is Wallhamn's share of the total flow of goods transported?

Today, Wallhamn serves 10-15 % of Samskip's goods.

3 What activities are you as a company buying from Wallhamn today?

The services that Samskip are buying today from Wallhamn are mainly stevedoring and administration, and to a very limited extent stripping and stuffing. Samskip is today using Skärhamns Åkeri, GA Transport and Sigurds for the transportation from the port.

4 Are there other activities that you wish/ would like Wallhamn to offer?

The Swedish department is now trying to convince the headquarter to get a second departure from Wallhamn which would increase the amount of goods passing through Wallhamn. With another departure Wallhamn could possibly do more handling of general cargo.

5 What is needed from Wallhamn for you to increase the number of activities you buy from them?

Samskip is pleased with the services and operations today, and in Samskip's opinion, there is nothing more they can do on the goods that come to Wallhamn.

6 What is your personal opinion/idea about Wallhamn seen as a logistic centre, and their possibilities for success?

Samskip believes that Wallhamn has good chances of becoming a logistic centre. They think Wallhamn's main competitive force is the fact that they are a small port with great flexibility. With a good flexibility they can serve almost all kinds of customers. They also believe its important to keep and build up the interest from the industries in Stenungsund which is the most natural customer segment. A competitive disadvantage is the absence of railway and the geographical situation. A suggestion from Samskip is to try to convince the government and SJ to improve the railway from Gothenburg to Stenungsund and also to build a terminal in Stenungsund where goods can be handled efficiently.

5.2 Study tours at logistic/distribution centres

5.2.1 Schenker (Lindex)

Schenker Stinnes Logistics

Interview with Patrik Lind, Process Developer

9 September 2002

At the Bäckebol terminal outside Göteborg, Schenker serves their customer Lindex. Lindex is one of the largest fashion companies in Sweden with stores in Sweden, Norway, Finland, Denmark and Germany. The Schenker terminal serves all these markets. The producers send their goods to the terminal, often in large packages, the goods are received, the packages are split and then packed again together with other types of goods that is going to be sent to the different stores. The transportation to the terminal is done by different actors, lots of clothes come by boat and some come by trucks. The transportation from the terminal is done by Schenker, and usually with their own trucks, but sometimes Schenker buys the transport service from another transport firm.

The processes in the terminal is almost totally automised, after 50 mil Kr of investments the consolidation and picking of goods is done automatically. The processes are in all levels controlled by an information system. The different processes that is done in the terminal are Goods receiving, bar-code registration, storing, goods split, and consolidation.

5.2.2 *Maersk*

Maersk Logistics

Interview with Bernt Lindberg, General Manager Projects

10 September 2002

Maersk logistics is a modern logistic company and is part of the A. P Möller group, one of the world leaders within transport and logistics. At the distribution terminal in Arendal, Maersk handles goods from a few major customers, Canon, Lego and all sorts of goods from the old Elof Hansson. For Canon they perform some packaging and sorting activities, other than that it's mostly receiving of goods, storage and distribution of the goods.

The terminal is situated in connection to the port and has railway tracks in direct connection to the building. This is a huge advantage when handling the goods, and especially heavier goods.

Bernt Lindberg has been working within this field of business for a long time and he was the one who started the old Elof Hansson which is now part of Maersk. His major concern was the importance of working with the right staff. The employees must be motivated and have a feeling of responsibility in order to do a good job. In cities like Gothenburg, Stockholm and Malmö there is a problem of getting the right employees, often there is a high turnover of employees and this is a problem that is affecting both the effectiveness, service level and flexibility at the different activities.

When looking at Wallhamn, Bernt argued that they have a huge advantage in their staff, because they have loyal, flexible people that have been in the port for a long time. This is something that you get when you come to places a bit outside the major centres. By having this strength it is possible for Wallhamn to handle all different types of goods. They should market themselves as a flexible port with possibilities to handle all sorts of goods. However, they have the disadvantage in lack of railway connection in the port, and that might force them to focus on goods that don't necessarily need to go by railway. Further, he can't see any problem in getting customers and goods to the port; it is all about performing a good service, and that will generate new customers. However, Wallhamn need to put more efforts on market themselves as an alternative to i.e. the Port of Gothenburg.

5.2.3 *Danzas ASG*

Danzas ASG Solutions

Interview with Lars Jarlros, Manager Logistic Center

20 September 2002

Danzas ASG Solutions AB has been working with third party logistics since 1990. Their distribution terminal in Arendal was built 1992. Danzas ASG is divided up on three different parts i.e., Euro Cargo, Intercontinental which is sea and air transport and finally Solutions, all representing one stop shopping. They work with Solutions in their terminal in Arendal. Danzas ASG has a yearly turnover of 1, 3 billion and, since they bought DFDS, they are part of a Nordic organisation with Sweden as their main market. All supporting functions like administration and staff are situated in Stockholm. Their focus is on everyday commodities, fast moving consumer goods with a high turnover, steady goods flow, usually on pallets and with low margins. The terminal in Arendal is 22 000 m² and Danzas offer logistical solutions for four major customers i.e., ICA, SCA Hygien Products, Siba Vision and Cashier. ICA is their biggest customer and most of their goods are pallet goods. Most of the activities performed in Danzas Arendal are

storing, picking, packaging and distribution for the ones that want that service, the customer decides usually about the transport themselves. Subcontractors are used for heavier operations like palleting etc.

For ICA, the terminal in Arendal also works as a merge point for local daily deliveries for the stores in the area around Gothenburg. The goods are usually light goods like crackers (Göteborgs kex) and toilet paper that are easy to consolidate with heavier goods like tins and cans. By consolidating the goods like this they manage to get a high filling rate on the trucks.

Most of the ICA goods come with sea transport and are stored in Arendal and then distributed around Sweden. It is the customer who usually decides upon the method transport and that includes even the sea transport. The other customers' goods come by rail or truck. Danzas are receive 3-7 railway wagons a day and is actually SJ's second biggest customer.

Concerning thoughts about the market for logistical centres, Lars Jarlros mentioned criterion like geographical location with goods connection points and closeness to a lot of major cities, and also the need for a good and working organisation in order to achieve the best logistical solutions.

Another benefit about the geographical location is the closeness to other logistics centres and distribution terminals in order to utilise transports by consolidation of goods.

5.3 Market screening of Ports

This is a screening of the port industry on the Swedish West Coast. We chose to investigate these ports to get knowledge and an idea of how other ports in the geographical surroundings are working with logistics and third party logistics. Those ports that are working with logistics and third party logistics in a way that we find interesting for this thesis will be objects for further research. The ports that were objects for our investigation were Uddevalla, Lysekil, Varberg, Falkenberg and Halmstad. This investigation may not be statistically correct and that is not our intention. The interview was made on the telephone and the

respondent at each port was the one best suited to answer these kinds of questions. The interview was done with a number of questions as a base for the discussion, but the answers from each respondent will be presented in running text and not question by question. The questions we asked are presented in Appendix 3.

5.3.1 Lysekil

Lysekils hamn

Interview with Olle Samuelsson , Harbour Master and Managing Director

30 August 2002

Goods flow 2001, 450 000 tonne

The Port of Lysekil is offering their customers storage services of both incoming and outgoing goods, they also do some splitting and consolidation of goods. They do not do any assembly work or any more advanced activities, but in some cases they do reconditioning of transported goods. The port is co-operating with four forwarders that is separated from their own organisation, but they can be seen as a part of the operations. These forwarders arrange and control the flow of goods to and from the port and also the complimentary activities that are to be carried out. They also take care of storing control and custom issues.

The port is also offering transport solutions, and it is the forwarder that takes care of this. They hire distributors on a contract basis. Most of the port's customers are in the paper and wood industry, they are therefore specialised in taking care of this type of goods. The port only deals with goods that are coming in or going out by seaway.

The port see themselves as a third party logistic provider since they do almost everything the customers ask for in logistic terms. Otherwise did they not have any opinions about ports being TPL providers.

5.3.2 *Uddevalla*

Uddevalla hamn

Interview with Morgan Lexberg, Harbour Master

30 August 2002

Goods flow 2001, 952 000 tonne

The Port of Uddevalla has come quiet far in the field of logistic. They offer their customers a door-to-door service, this solution can include pick-up of goods at the customer's location, and transportation to the port and then to the customer's customer. The port organisation also takes care of transportation abroad. The port is co-operating with several distributors that takes care of transportation. In the port they offer storage services, splitting and consolidation of goods, and in some cases also assembly work. They also do quality checks of goods after transportation.

The organisation is rather unique since they have port and stevedoring as well as forwarding operations under the same roof, everything is a part of their own organisation. The port is also acting as an agent for a number of customers in the Port of Gothenburg. Most of the port's customers are from the north of Sweden and Finland, these customers mainly export wood and paper. But the port is working with all kinds of goods, they take anything they can get.

Morgan Lexberg believes that ports that want to act as a TPL provider has to have a great organisation with a lot of knowledge in the field of logistics. It's also important to meet the customers and present different solutions that they maybe have not thought about. It is also important to have a well working marketing organisation. It is important to tell the market your offer and make them aware of your knowledge so that you can sell your services.

5.3.3 *Port of Varberg*

Terminal West Varbergs hamn

Interview with Dan Richardsson, Vice-Managing Director, Marketing Executive
30 August 2002

Goods flow 2001, 1339 000 tonne

The Port of Varberg sees themselves as a full third party logistic provider. They are offering their customers door-to-door solutions. They arrange the transportation of goods through the whole chain. They also offer storage of both imported goods and goods for export, other services in the port is splitting and stuffing of goods, processing and commercialisation of goods. The Port of Varberg have their own forwarding operations. They are not only working with customers that are using the harbour, they are also co-operating with forwarders in Gothenburg that let “their” goods pass Varberg for certain services. The port are working with all kinds of customers but are specialised in the wood/timber industry, and other conventional goods in larger volumes.

To be able to work as a logistic centre it is important to have the right competence and have a close relation to the customers. It is also important to be able to respond to the customers needs and demands, flexibility is critical. In Varberg the development of becoming a third party logistic provider have been done naturally and without any strategic decisions. It has occurred due to customers asking for more services.

5.3.4 Port of Falkenberg**Falkenbergs hamn**

Interview with Bengt Andersson, Harbour Master
30 August 2002

Goods flow 2001, 409 000 tonne

The Port of Falkenberg have got their own forwarding operations that take care of transports and custom issues. Other logistic activities in the port are storage of

goods and splitting and consolidation. They do not offer their customers any assembly activities or other more advanced services. The port is also serving customers that do not use sea transport with reloading of containers from road to rail and vice versa. The port is specialised in raw and bulk material and this could be everything from steel to beer. The port sees themselves as a flexible port that is working to satisfy the customers' needs.

5.3.5 Port of Halmstad

Halmstad hamn

Interview with Göran Lindgren, Harbour Master

30 August 2002

Goods flow 2001, 1964 000 tonne

The Port of Halmstad is doing a large variety of logistic services. They are solving transportation issues and specialises in everything that is large scaled. The port is using local distributors for transportation to and from the port. The port is offering storing possibilities that they have mainly been taking from distributors. They also offer transshipment from railway to truck and vice versa. The port is specialised in the iron industry. The port do not see themselves as a third party logistic provider, and they believe that it is mainly differentiated ports that should work in this field, one example of a port that is suited to work in this way is Wallhamn according to Göran Lindgren.

5.4 Interviews with selected ports

From the pre-study/market screening we find that Uddevalla and Varberg are the most interesting ports for further investigation. After advice from Professor Arne Jensen we have also decided to carry out interviews at the port of Karlshamn. Questionnaire for interviews with selected ports will be found in appendix 3.

5.4.1 The Port of Varberg

Terminal West Varbergs

Interview with Dan Richardsson, Vice-Managing Director, Marketing Executive

11 September 2002

Goods flow 2001, 1330 000 tonne

1 Facts about the company and operations

The Port of Varberg is a medium sized Swedish port with 82 employees on a yearly basis and 65 full-time. The port is 100% owned by the local authority. Earlier, it was mainly owned by the industrial community and the Board consisted mainly of business people. Today there are more politicians on the Board but the port is doing its best to maintain its connection with industrial and business life.

The port has a steady positive development and today they handle over 1 mil tonnes of goods per year. The port mainly deals with forest products, 80 % of goods handled are from the forest industry. Imported goods are timber for the sawmills, sawdust and flakes for the energy and pulp industry and chip board. The port exports mostly pulp and sawed timber as well as a small quantity of reinforcement bars. In recent years the port has improved its capacity by 50 % through more modern cranes and machinery, the Board has also decided to enlarge it with another quay. The port has over 50 000 m² of warehouses and indoor storage area.

Today, the port is offering total logistic services, these services usually include storing and distribution. But the port is also performing more complicated activities when the customer asks for it, the port is, for instance, milling tracks on the imported chipboard. Flexibility is one of the ports most important characteristics.

The ports customers are mainly from Västergötland down to Småland, but they also have some customers from Arvika and Bergslagen. Seen in relation to amount of goods, the most important area is the south Swedish highlands. Seen as a geographic area, Uddevalla is the largest competitor with a customer catch area that is almost the same. The most important way of competing is by having the lowest cost of transport to the customer, thus the geographical location is important.

2 When and what/why did you decide to expand the business to include more activities?

The development of becoming a third party logistic provider has been natural for the port, and has not occurred due to some specific occasion or decision.

3 How did you work with implementation , resources needed, organisation, marketing and impediments.?

The third party logistic activities are seen as a compliment when the port activities are low. The transport services that the port offers their customers are bought from around 20 different distributors, the port always chooses the one with the best quality and economical offer. For the logistic activities the port company is not only working with customers that are using the Port of Varberg, for example , if they have got a customer who is exporting goods to Asia, then the port company will pick-up the goods, and then transport them to Gothenburg where it is shipped. The port controls and arranges the total flow, and takes care of the administration etc.. The port also offers storage service for goods that are not entering or leaving by ship.

The development of logistic services has demanded more from the organisation, and especially marketing activities, in order to get new customers to the port. The port of Varberg has a marketing organisation that has all-market responsibility. The marketing department includes forwarding and sales. They work a lot together

with agents, shipping companies and importers. They also have seeking activities where sales people go to visit producers and other potential customers. The company also arrange special customer days where they have different activities with a view to building a closer relation to the customers. But the most important way of getting new customers is that existing customers attract new ones.

4 What has the trend looked like?

5 Have your way of working with logistic activities attracted new customers?

The door-to-door solutions have made it easier for the customers. They can buy all logistic services from one place. By delivering these services with high quality the existing customers attract new ones.

6 From the start did the customer base consist of already existing customer who expanded their business or new customers?

7 Do you use subcontractors to the activities that you can't perform by yourselves?

The Port of Varberg is trying to do all kinds of operations, but when the competence is not there or it is not economically favourable to do it themselves they can buy the services from others. This is done only to a limited extent.

The transport services that the port offers their customers are bought from around 20 different distributors, the port always chooses the one with the best quality and economical offer.

8 What do you think about Wallhamn's opportunities of becoming a logistic centre?

When we asked about Wallhamn's possibilities in the logistic field the respondent did not want to say much since Wallhamn is seen as a competitor, but we did get some opinions. The respondent believed that the absence of railway connections was a great disadvantage. He also suggested investigating what advantages the port could gain from the surrounding industries, and if there were some possible co-operative partners who could add new competence and services to the organisation. In the field of products he believed that Wallhamn would be well suited for different wood products. It is also important to look over the level of utilisation on the return flows and try to maximise it.

9 What kind of information system are you using and how does it work? Is this system connected to your customers?

5.4.2 The Port of Karlshamn

Karlshamn hamn

Interview with Ulf Sandevärn, Marketing Manager

12 September 2002

Goods flow 2001, 3932 000 tonne

1 Facts about the company and operations

The Port of Karlshamn is the 8th largest port in Sweden, and the most important port for goods in south-east Sweden. During the last ten years the port has had an increase in goods volume by 150 %. The port is own by the municipality to 50 %, and 50 % is owned by Södra Cell, Carlshamns AB and Viking Timber. Their

largest customer is Södra Cell. There are 75 employees in the port and they have a very flat organisation and delegate a lot of decision making. They have a flexible team and a lot of the main responsibility, and are working a lot with competence development.

The Port of Karlshamn has a close relationship with their customers including a lot of personal meetings. They want to achieve a win-win situation with their customers and develop long-term relationships.

The Port of Karlshamn is expediently located, considering the overland transportation infrastructure. All heavy road traffic by road and rail, to and from the port areas, is routed outside the city centre and populated areas. At the same time, access to the main roads and railways is short and direct thus causing less impact on the environment. They are working to promote transportation by railway.

Their geographical coverage is mostly the eastern markets which are regions of great importance. They do not work in co-operation with any haulage companies however, they do mediate the contact between their customer and the haulage companies.

Their major goods are bulk, stone and grain, oil, wood products for Södra Cell and other Ro-Ro units, which is the most expanding part. They started their Ro-Ro traffic in 1995. Two shipping companies are working in the port, Scandlines with 2 ships and 6 departures a week and DFDS Tor line with two ships and 6 departures a week.

2 When and what/why did you decide to expand the business to include more activities?

Also, in relation to the expansion of the port, also the need for more storing and distribution activities. They market themselves as a hub port and do all sorts of reloading. Karlshamn's objective is to develop into a regional cargo terminal in

which cargo can be handled with maximum efficiency between ships railways and trucks. Cargo can be handled indoors and stored in warehouses for further distribution. Customers have access to storage capacity for dry cargo in warehouses, and liquid cargo in tank farms and in ground.

3 How did you work with implementation , resources needed, organisation, marketing and impediments?

Karlshamn did not make any major investments, just a few adjustments. They have storing areas of 45 000 m². They did not do any restructuring in the organisation but they have put a lot of effort into marketing activities.

4 What has the trend looked like?

As mentioned before, the port has had an increased goods volume of 150 %, and this has generated more need for storing and other distribution activities. Some of their customer are only using the storing facilities, and do not have goods that go by sea transport.

5 Have your way of working with logistic activities attracted new customers?

A lot of companies in Karlshamn are looking at the storing possibilities in the port but there is still a lot of space available.

6 From the start did the customer base consist of already existing customer who expanded their business or new customers?

Both. It is hard to say exactly when Karlshamn started with more logistical activities. It has been developed as a result of the expansion in goods volume.

7 Do you use subcontractors to the activities that you can't perform by yourselves?

Karlshamn do not work with a subcontractor. However they mediate the contact to other companies, and have some co-operation with other local suppliers of logistic services.

8 What do you think about Wallhamn's opportunities of becoming a logistic centre?

One drawback is the lack of railway facilities in the port, but other than that they think that Wallhamn should continue to focus on container traffic which is a growing market, and also look on the possibilities of getting feeder traffic to the port. Wallhamn is important for the competition, and especially when considering the Port of Gothenburg's growth.

9 What kind of information system are you using and how does it work? Is this system connected to your customers?

Interested parties in Karlshamn are constantly investing in the port to improve the development of transportation and handling of goods. Efficient technical equipment for handling goods is combined with the latest information technology. Karlshamn are connected via EDI to some of their customers, however it is usually on the initiative of the customers. In the future Karlshamn hope to be able to use e-business in a greater extent.

5.4.3 Port of Uddevalla

Uddevalla hamn

Interview with Morgan Lexberg, Harbour Master
and Lars-Erik Andersson, Manager of Customer Service

17 September 2002

Goods flow 2001, 952 000 tonne

1 Facts about the company and operations

The Port is owned to 54 % by municipality and the other 46 % by private companies where Broströms owns 40 %. The major part of the goods handled in the port (export) is wood products coming from Sweden and even Finland and the Baltic. They also handle a lot of conventional goods, corn and grain and other project cargoes which is a part that is increasing. The imported goods consist of ore and other bulk goods. In the port they perform stevedoring, forwarding and clearance services. Other services that the port offer are storing areas for goods and areas on land for storing ships that need service. The port is part of West Sweden Seaports, which mean that they co-operate with the Port of Gothenburg and Varberg.

They have about 7 shipping companies route traffic working in the port and have feeder traffic (Teamlines) once a month. The feeder traffic is mainly paper products and the criterion to get a feeder in the port is to have 500 tonne which is 20 40 feet containers. In Sweden their main areas of geographical location are Värmland, Dalarna, Gävle, Örebro, Jönköping, some parts of Småland, up to Gothenburg and back to Uddevalla.

2 When and what/why did you decide to expand the business to include more activities?

They were able to offer better service to their customers, in connection with the merger of the port and the shipping and forwarding division,. They can now offer a full door-to-door solution, including all different transports needed. They can also offer all types of shipping operations.

3 How did you work with implementation? , resources needed, organisation, marketing and impediments.

After the merger of the different division they decreased the number of employees, and there are now about 90 persons working in the port.

The port put a lot of resources into their marketing activities. They look into the market and try to find opportunities where they can get new customers. They do customer visits and other visits to different actors on the market that could be of interest for the port. They market themselves as a port with full service and high quality. With a good reputation on the market the old customers generates new customers.

4 What has the trend looked like?

5 Have your way of working with logistic activities attracted new customers?

The door-to-door solutions is an easy way for the customers. They just need to contact one person to arrange all the transports needed from let say producer to the end customer.

6 From the start did the customer base consist of already existing customer who expanded their business or new customers?

7 Do you use subcontractors to the activities that you can't perform by yourselves?

The port can mediate the contact to other companies in the area that perform the activities.

8 What do you think about Wallhamn's opportunities of becoming a logistic centre?

What I know about Wallhamn is that they have a short call at which is good in a way but bad in the way of longer land transports to get access to the port. Another thing that I have heard is that they have worked heavy with marketing activities on the international market.

9 What kind of information system are you using and how does it work? Is this system connected to your customers?

They do not have a system that covers all the customers but we do have systems for keeping track on the store levels etc, that is connected to the customers.

5.5 Interview with TT-Trans

Questionnaire for interview will be found in Appendix 3.

TT-Trans

Interview with Thomas Johansson, C.E.O.

9 September 2002

1 Business activities? Fact about the company, Geographical coverage, Largest customers, Type of goods and origin

TT-Trans is a haulage contractor situated in Stenungsund. They have about 100 employees. They offer their own transport solutions and have their main terminal in Gothenburg. Their customers are spread within a radius of 10 miles from Gothenburg, with a goods flow of 3 miles radius. Their largest customer is Arvid Nilsson in Kungälv, but they carry all types of goods up to 1000 kg and can see an increase in the goods flow to different stores within the consumer market.

2 What kind of services are you offering?

We do the transportation of the goods, sorting and offer some storing activities.

3 Do you specialise on any kind of goods?

See question one.

4 Do you co-operate with any logistic centres today?

We have partners in Jönköping, Helsingborg, Örebro, Norrköping, Sundsvall, Stockholm Gävle, Umeå, Luleå and Oslo. All trucks cover a radius of 15 miles from their “node”.

5 What are your opinion/ideas on the development of a logistical centre in Wallhamn?

I think there are great potential for a logistical centre in Wallhamn, but it will not work if they do not get more traffic to the port. Wallhamn needs more shipping companies in the port and to become a feeder port. The goods handled at the port must be goods coming with sea transport. Another possibility is to work with goods coming from Norway.

6 What goods and which customers do you think they should focus on?

Wallhamn should continue to handle all types of container goods and all types of customers. A major thing is to let everyone on the market know that they exist and that they can offer cheap, flexible solutions and work more with the “uniqueness” they offer out there.

6 ANALYSIS

In this section of the thesis we will analyse the collected information, interviews and theories and relate it to the main and sub problems of this thesis. The analysis will be divided into six parts: Introduction, Value Creation and Positioning, Logistical Activities and Services, Organisation, Market Segments, Goods flow.

6.1 Introduction

Wallhamn has for a long time, maybe without thinking of it themselves, been working as a logistic provider. They have been a part of the distribution chain and has offered several services and resources like, port and harbour services, material handling (loading and unloading of ships), and storage. They have also been working with more complex services like PDI. PDI can be seen as an outsourced value-added service for the car industry. Viewed together with those activities already produced at Wallhamn, the step to becoming a third party logistic provider (TPLP) that creates more value for their customers is, theoretically, not large and it feels like a natural step to take. This is a path of development that almost all actors within the third party logistic(TPL) industry have taken (see Section 4.2).

To describe what the TPL concept is all about we are in this thesis using a definition that is as follows (sSection 4.3):

“Organisations’ use of external providers, in intended continuous relationships bound by formal or informal agreements considered mutually beneficial, which render all or a considerable number of the activities required for the focal logistical needs without taking title”

For Wallhamn to become an actor in the TPL market offering TPL services they have to compared to their traditional operations have a broader range of services

constituting the services, deeper understanding of the clients business, and different and closer forms of relationships between seller and buyers. (Section 4.3.1)

Becoming a TPL provider will not be an easy task without problems. In this thesis we will not be able to solve all problems, due to the limited time frame we will instead focus on a limited number of areas that we believe are critical for Wallhamn in becoming a successful actor in the TPL industry. These areas are: *Value Creation and Positioning, Logistical Activities and Services, Organisation, Market Segments, Flow of Goods.*

6.2 Value creation and Positioning

When developing into a TPL provider it is important for Wallhamn to understand how value is created and how to position the business.

6.2.1 Value creation

When acting as a TPL provider, the most important thing is to create value for the clients. As mentioned in the theory about value creation (Section 4.5), there are number of sources that could be advantages for the provider, however also a disadvantage if they do not exist. Two main factors, *logistics expertise* and *logistics system* are necessary in order to act as a competitive TPL provider. Wallhamn is, by developing their business to include more logistical activities, entering a new logistics market that requires logistics expertise and logistics systems. Without any existing knowledge within this area they need to hire skilled people within this field in order to be able to create value to their clients.

The theory (section 4.5) describes how external parties may provide more value in relation to cost, this through the areas of *factor costs, economies of scale and scope*. Concerning factor costs, *labour costs* is a cost that varies significantly

between organisations, but the most interesting thing is to look how it varies between geographical locations. The major cities and urban areas have difficulties finding the right people which we have understood in our interviews. They usually have a high turnover which will affect effectiveness, service level and flexibility. Wallhamn's geographical location gives them a huge advantage which was also pointed out by one of the respondents from the logistic/distribution centres in Gothenburg. Wallhamn has the strength of loyal, flexible employees that have been working in the port for a long time. This will make Wallhamn to a port with high flexibility and possibilities of handling all sorts of goods. Their strength of keeping a high flexibility is something that is mentioned by all shipping agencies to be one of the reasons why they operate in Wallhamn.

As important as looking at the areas for success, is to look at the areas for diseconomies, which is discussed in the theory by Pratten (Section 4.5). This is of major importance in the case of Wallhamn. Pratten mentions, among others management, selling and distribution as areas for diseconomy. When entering the TPL provider market Wallhamn has to develop and put more resources on these functions in order to be successful and be able to create value to their clients. This will be discussed in more detail in the analysis of Wallhamn's organisation.

With Wallhamn's planned co-operation with TT-Trans they can achieve economies of scale through development of networks and shipment consolidation, however this could be utilised to a much broader sense which also will be discussed in more detail later. Another way to achieve economies of scale is within warehousing, by sharing the warehouse among several clients which also increase the possibility of transportation consolidation. By co-locating activities such as storage, terminal and handling and using the same production inputs/resources, economies of scope will appear. More about this can be found in the theory (Section 4.5).

A very useful framework for explaining value creation is mentioned in the theory (Section 4.5.1 Berglund 2000), and when adapting this to Wallhamn, do they have

the potential of achieving a high level of *operational efficiency*, and utilise their main driver of advantages, factor cost. This makes it possible to perform activities at a higher efficiency, as say lower costs than the customer. We mentioned an example in theory of operational efficiency, of running a warehouse efficiently which requires adequate physical facilities excellent operational skills. The next step in the framework describes the *integration of client's operation* which will generate lower costs. In the eyes of Wallhamn as a TPL provider this can be achieved by, for example, multiple clients warehousing or transport networks, resulting in economies of scale. Today, Wallhamn is using a subcontractor for road transport, and this will create value for the clients, firstly by offering more services and secondly by reaching a broader network of transports. This is a type of vertical integration however there are great benefits by horizontal integration as well, to increase the geographical coverage to the customers.

Subcontracting or outsourcing is very common for TPL providers which we have discovered in our research. In vertical terms this makes it possible for the TPL provider to focus on producing logistics services that are of core competence, and outsource the supporting logistic activities.

We believe that Wallhamn as a TPL provider should focus on some core competencies, utilising their strength in factor costs to create value for their customers. Their high level of flexibility and skilled employees makes it possible to handle all types of goods and customers.

6.2.2 Positioning

After looking into the literature and our empirical material we have seen the importance of a clear positioning strategy. We have in the theory (Section 4.5.2) mentioned two different positioned providers, those offering *standard services*, versus those that offer their customers logistics *solutions*. It is pretty obvious that Wallhamn as a TPL provider should focus on standard services. Another dimension also mentioned by Berglund (2000) (Section 4.5.2) are those providers

that carry out *basic logistics* versus *value added* logistics. Even within this positioning dimension it is rather clear that Wallhamn at the current stage can carry out basic logistics, which represents those TPLPs that provide integrated services consisting only of traditional transportation and warehousing activities, which we also believe are the main logistical activities for Wallhamn as TPL provider to focus on at the first stage. The actual activities will be discussed in more detail later. Moreover, basic logistics category emphasise cost efficiency and operational as the most important for growth and development. However, in our opinion Wallhamn does carry out some value-added services, (additional activities on top of traditional transportation and warehousing activities) by having that high level of flexibility to their customers. All characteristics mentioned by Berglund (2000) of a standard service are well suited for the way Wallhamn should position them as a TPL.

Our recommendations are that Wallhamn should focus on a few standardised logistics processes and make these efficient. The customer value propositions active in the standard service position are then as Berglund points out “specific competitive service at low cost or high performance based on specific requirements”. Usually within standard services the providers have many customers and the client must keep logistics management as an internal process. The fact that Wallhamn is new as a logistic provider within certain activities will affect their knowledge and experience within the field of logistics management. Their lack of experience and knowledge within the field of TPL makes it difficult, at the current stage, to offer solutions, where the providers take responsibility of the client’s logistics management. In order to be able to do this, Wallhamn must have some experience and expertise within logistics and know-how within TPL solutions. If returning back to the value creation modes as we discussed earlier, operational efficiency and integration of customer operations will usually tend to dominate in standard service positions.

To conclude this, we think that Wallhamn must start by developing a positioning strategy suited for their possibilities and goals of entering this new market of TPL

providers. They should focus on standard services, on a few core competencies like warehousing and transportation. The exact logistical activities that we believe they should focus on will be discussed later. With their past history in mind we do believe that they should have a wide customer base which will make them insensitive for fluctuations in clients businesses etc. Wallhamn should as TPL provider emphasise cost and operational efficiency for growth and development. However, as a start, they must get some more logistics expertise in order to be successful as TPL provider, including some restructuring in their existing organisation, necessary in order to develop a successful positioning strategy that will create value for their clients.

6.3 Logistical Activities and Services

When defining what services and activities Wallhamn should offer their customers it is important to clearly have clearly stated the company's position and strategy of operations. The chosen position defines what type of actor the company intends to be. In the previous section of this analysis we have recommended Wallhamn to position themselves as a logistics service provider that concentrates on standard services and basic logistics with some value-added services. The characteristics are two dimensions of positioning that is described in previous section and is Section 4.5.2. But to summarise, a standard service provider is characterised by the providers ability to create a few standardised logistic processes and produce these as efficiently as possible. The basic logistic category of providers represents those third party logistic providers (TPLP) that provide integrated services consisting of only traditional logistical services. The other positions a TPLP can take is solutions provider and value-added logistics. The solutions provider focus on developing solutions for a specific client's requirements, meaning that the value primarily comes from complexity and the ability to tailor solutions. This focus demands a lot from the logistical management and knowledge in all logistical processes is extremely important. The value-added logistics providers offer additional activities on top of the traditional services. This focus also

demands great logistical knowledge in management and various processes.(see Section 4.5.2 and 4.5.2.2)

We believe that Wallhamn has to focus on the activities that they can deliver with superior performance and quality. In the early stage of operations the number of activities that can be produced with such quality is limited due to the lack of competence in more complex logistic services. This is also the main reason as to why we have suggested the stated positioning of the company as a logistic provider. But without concern of position Wallhamn's greatest challenge is to add more knowledge and competence in logistic management to be able to organise the operations efficiently. The standardised and traditional services that we believe Wallhamn can perform with excellence after developing the competence of management is *transportation and warehousing*.

6.3.1 Transportation

Transportation is a service that in general is expected by the customers to be included in the logistical services that are offered by TPLPs. In addition, it is also one of the most requested services since it demands a lot of resources, investments and competence to be handled internally. Wallhamn has traditionally not been working with transportation and has as a consequence does not have the needed competence and resources to handle this service by themselves. During some time Wallhamn have had a relationship with a distribution firm, TT-Trans, that for several years have been working in the transportation and distribution field. During the fall this relationship has developed into a partnership and that adds the needed resources and competence that is critical to handle the transportation service with superior performance(see interview Section 5.5).

In the TPL industry it is very common that the service provider outsource transportation activities to subcontractors. The reason for this is as mentioned earlier, that it demands a lot of resources, heavy investments and competence. And at the same time, standard services in transportation is generally accessible at low

cost(Section 4.4.1). In this Wallhamn case the transportation can be seen as outsourced to TT-Trans that is responsible for the needed resources and competence, and to handle the total transportation service in a superior way. In the future when the business hopefully has grown it could be a great idea to consider outsourcing of transportation services to several transportation firms. We suggest this because there could be other providers that can deliver better services to lower costs in certain geographical or product areas. If outsourcing transportation to companies in different geographical areas the geographical coverage also increases.

6.3.2 Warehousing

Another traditional logistic service that Wallhamn, in our opinion can provide with superior performance is warehousing. The reason for this opinion is that they have the resources that is needed to run warehousing operations. The most important resource are a competent workforce and good facilities. One disadvantage for Wallhamn in providing warehousing services is the geographical location (Section 1.5.1), but by focusing the marketing work on the right customer segments this obstacle will be avoided.

The workforce Wallhamn has, according to almost all interviews, a reputation of having an excellent workforce that is characterised by flexibility, competence and loyalty. The workers of Wallhamn do also have experience in handling warehouse floor operations since this have been a great part of Wallhamn's port activities.. In the new warehouse operations there will be some more processes that will demand more from the workers of Wallhamn. The new demands will be explained further in relation to the new processes and operations that we think Wallhamn should include in their warehousing service.

The second resource that is critical to have to be able to provide warehousing services is facilities. The need of this resource is quiet obvious. Wallhamn has already made a plan of building a warehouse with the characteristics that is

demanded to handle the operations safely and efficiently(Section 1.5.2). Wallhamn also have an investment plan that allows space for expansion of operations if/when necessary. When adding certain activities there will also be new demands on the facilities, and these will be described under each activity.

There are more services and activities coming into the services and activities within the warehousing operations than the actual storing that has to be produced in order to create value for the customer. One obvious operation is the *handling of goods*, including *unloading and loading of transportation vehicles*. This operation demands skills in operating lift-trucks and also knowledge in information systems, to be able to record that the certain goods are coming in or going out of the warehouse (information systems will be discussed in the next section), and also to get the goods placement within the warehouse. The operation of handling goods includes all the services that have traditionally been included in warehousing operations. Another traditional service that Wallhamn should focus on is *order picking*. This service is relatively labour intense when not automatised. This suites Wallhamn well, due to their good and competent workforce and the main owners goal of the operations to create job opportunities. The knowledge that is demanded is the ability to read orders, and knowledge in the location in the warehouse of the different articles, in order to serve the orders quickly. The demands on information systems in this activity is discussed in next section.

6.3.2.1 Warehouse activities in the future

We believe that in order to be competitive in the future, it is important for Wallhamn to increase the level of competence and develop the activities and services to include more complex solutions and value-added logistics. This is because of the trend within the industry is going toward providers who can offer total solutions concerning all logistical activities. The growth for these companies is expected to be substantially higher in the future compared to actors with standard services and basic logistics(Section 4.5.2). As we stated in the introduction of this section Wallhamn should focus on traditional logistic services

like warehousing, and the services should be standardised. But, we believe that Wallhamn can increase the number of activities within the warehousing operation in the future. Due to the level of competence of the workers at Wallhamn do we think that Wallhamn can increase several value-added services in their warehouse offer. As mentioned earlier the greatest obstacle of producing more complex services is the lack of management competence in logistic and warehousing processes, and in order to be able to deliver value-added services with superior performance it is critical that Wallhamn increases the level of competence.

Here are some examples of value-added warehousing activities that could be of interest for Wallhamn in the future.

Packaging and Customisation - This is the most common value-added service. In those cases products are shipped to the warehouse in bulk or unlabelled form, the warehouse operator customises and refines the product packaging to better meet the need of the customers down the chain(Section 4.6.3). In order to manage packaging and customisation services Wallhamn need space in the warehouse for these activities as well as the required equipment. The needed resources demand investments, so we believe that this is a service that Wallhamn should include when they have an adequate customer base for such service. At the same time do we think that it will create great value to Wallhamn and their customers. With the same resources and competence Wallhamn can also offer pricing services.

Postponement and Reassemble - Warehousing can also complete production activities to postpone product specialisation and refine product characteristics. Sometimes reassembling at a warehouse may be done to correct a production problem(Section 4.6.3). These are activities Wallhamn most likely will be able to perform in the future when the workers and management have learned more about logistical operations in the warehouse. These service also demand a closer relationship to the customer than traditional services. This is another reason why Wallhamn should wait to add the service to their offer. Like packaging and customisation these activities also demand investments in space and equipment as well as the education of the workforce. But we believe that the activities will

create value for Wallhamn and the demands for such activities are increasing rapidly.

6.3.3 Information Systems

In the theory of information systems (Section 4.8.1) it is described that logistic information systems are the threads that links logistic activities into an integrated process. This integration is built on four levels of functionality: transaction, management control, decision analysis and strategic planning systems. In the area of logistical activities we should focus on the first level. The transaction level of the system initiates and records individual logistics activities. Transaction activities include order entry, inventory assignment, order selection, shipping, pricing, invoicing and customer inquiry. Within the transaction level of information systems there are a number of services that is create value for the customer, and therefore are increasingly demanded. As regards general storage, the customers usually expect the warehouse service provider to keep track of stock levels. This demands an information system that keeps track of incoming and outgoing goods, this system should preferably be linked to the customers system. Many customer also request information systems that can handle electronic orders, in this case it is important that the Wallhamn's system is compatible with the customer's. In order to satisfy the demands from the customers Wallhamn need to implement a system that can handle these services. They do also need to educate or hire an information system manager/operator and also train the workers that will use the system. The greatest limitation of what Wallhamn will be able to handle with their system is the level of investments that they are prepared to put in, and the level of competence in operating the system.

6.4 Organisation

In order to be a successful TPL provider, there are certain central functions that must exist in a company's organisation. In the theory (Section 4.6.1) we describe

the importance of operations management. Waters (1996) argues that every organisation makes a product or performs a service, and at the heart of an organisation is the set of activities directly concerned with making this product/service. As the theory says these activities are the operations and the organisation's most important function. In the theory we describe Waters (1996) three central functions that are directly concerned with the product/service; *sales/marketing*, *operations management* and *finance/accounting* (Section 4.6.1.1). Once again it mentions the main purpose of an organisation is to produce goods and services that satisfy customer demands.

In Wallhamn's case as TPL provider it is most interesting to look into the sales/marketing and operations management functions, whereas today these have major drawbacks, and almost lack in existence. From our empirical research we discovered that all respondents put a lot of effort and resources into their marketing activities, especially among the other ports that actively work to get goods to their port. One of the respondents from the ports experienced that the development of logistic services has demanded more from the organisation, and especially the marketing activities to get new customers to the port. Moreover, the shipping companies emphasised the importance of Wallhamn to market themselves as a flexible and cheap port and an alternative to Gothenburg. They did also state that Wallhamn must market themselves and convince the importers to choose Wallhamn as their port. Finally, the declared criteria like flexibility, high service level, high quality and the ability to serve all types of customers to be put more in focus. From theory and our empirical material we believe that it is very hard for a company like Wallhamn to survive as a TPL provider without an efficient sales/marketing function.

The other central function described by Waters (1996) is the operations management. With Wallhamn's plans on entering the TPL market by offering more logistical services, it is necessary to develop this function. As mentioned in the value adding and positioning part, Wallhamn need some logistical expertise and knowledge when going into this new field of competitive TPL providers.

6.4.1 Organisation of services and activities

When working as a TPL provider, there are other functions except for the previously mentioned that have to be managed efficiently, i.e., *warehousing*, *information system* and *outsourcing*.

6.4.1.1 Warehousing

Warehousing is the second largest logistical activity, and in the theory (Section 4.7.1) we described the different kind of warehouses used i.e., private, public and contract. We believe that public warehouse is the type that Wallhamn should work with. The specific logistical activities offer by Wallhamn was discussed in the earlier section. A public warehouse is described, in the theory, as an independent business offering a range of services such as, storage, handling and transportation which are the main logistical activities Wallhamn, as TPL provider, should focus on. In our research we found that these activities are the most common ones offered. However, by having a contract warehouse the vendor and client share the risk associated with the operations, which is safe for the provider. On the other hand, usually contract warehousing mean specially tailored warehousing and logistics services exclusively to one client. As discussed earlier we think that Wallhamn should offer standard services and that signify services to a number of customers which are best suited to a public warehouse. More detail about the different warehouses is found in the theory (Section 4.7.1).

As a warehouse service provider it is important to know about the different dimensions that the customers take into consideration when choosing a provider. The different dimensions are discussed in the theory (Section 4.7.2), but with consideration to Wallhamn opportunities as TPL provider, it is most interesting to look at operation flexibility and scale economies which are two concepts that we have discussed earlier. Concerning operating flexibility, which we believe is one of Wallhamn's strengths, this dimension is usually achieved and offered in a public warehouse. Bowersox (1996), used as one of our sources in the theory,

states that many public warehouse operations have demonstrated substantial flexibility and responsiveness. Moreover, the theory mentions the dimension of scale economies, where public and contract warehouses are generally perceived to offer better scale economies since they are able to design operations and facilities to meet the higher volumes of several clients.

In order to stay competitive warehouse operators must offer other value-added services. In the theory (Section 4.7.3), Bowersox (1996) argues that warehouse value-added services may focus on packaging and/or production. The most common value-added services relate to packaging which we think is an activity Wallhamn should offer. In terms of value-adding, warehousing can for example increase the value added by refining product packaging to better meet the needs of customers down the chain. In our research, theoretically and empirically we found that a lot of value-added activities exist within picking and packing, and these activities are not offered to any great extent by TPL providers, so this would be a great potential for Wallhamn within this area. The specific activities offered are discussed under the previous section about logistical activities we think Wallhamn should focus on. From the management point of view, there are number of things that the management must consider before initiating operations. In the theory we described Bowersox's (1996) six area of importance i.e., stocking the warehouse, personnel training, developing work procedures, security systems, billing and inventory control, safety and maintenance. These are all areas that are of importance in order to run an efficient warehouse. More about these different areas are found in the theory (Section 4.7.4).

6.4.1.2 Information

Information is viewed as one of the keys to logistics competitive advantage for the future. We describe its theoretical importance, and logistical information systems are described as the threads that link logistics activities into an integrated process. Bowersox (1996) describes four levels of functionality transaction, management control, decision analysis and strategic planning system. More details about these

are found in the theory about information systems (Section 4.8.1). With Wallhamn's aim of becoming a TPL provider they need to invest in information systems to be competitive. We believe it is the management's responsibility to make sure that this system is created in the most efficient way to meet the needs of the users. Bowersox (1996) describes six principles that must be fulfilled by the logistics information systems in order to meet the management information needs, and sufficient support enterprise planning and operations. More about this can be found in the theory (Section 4.8.2). This leads us back to the importance of logistical expertise and experience among management and employees in order to become a successful TPL provider.

6.4.1.3 Outsourcing/subcontracting

We have previously discussed whether a TPL provider should perform an activity themselves, or if they should outsource it to another company. Transportation is the production process of logistical activities that most commonly is subcontracted to lower tiers of companies, as stated in theory and seen in our empirical research. Today, Wallhamn is outsourcing the road transport to the haulage company TT-trans. This co-operation started just recently. However, we think that Wallhamn should increase the number of haulage companies in order to offer the most competitive price to their customers. One of the ports in our interviews buys transport services from around twenty different hauliers, and chooses the one with the highest quality and lowest price. In addition, when outsourcing transportation Wallhamn should try to use actors that are specialised in different geographical areas. In that way the geographical coverage increases.

Berglund (2000) which we refer to in the theory (Section 4.4.1) state that for the foreseeable future the degree of transportation outsourcing will be further increased. Warehousing as the second major component of logistics will be subcontracted to a much higher degree than the current low levels. Value-added services will also be subcontracted to a higher degree. This statement could generate in an increased need for warehousing and other value-added activities

that are offered by the TPL providers. From Wallhamn's, when turning into a TPL provider, point of view this could mean great potential for growth. The activities mentioned all have in common that they are operational and often labour intensive. These variables are the reasons why the activities are preferably outsourced, since there are other operators capable of performing the activities better, with a good service level to a low cost. Wallhamn as TPL provider has the potential of having strengths of being operational efficient and being labour intensive, relating to the earlier discussion in the section value creation and positioning, about how factor cost can be an advantage for the provider and generate value creation.

In an earlier section we have discussed which activities that Wallhamn most preferably should outsource. The management have the responsibility of searching for suitable providers for these services. It is important to first establish the selection criteria as to whether you as a company are going to engage in a simple transactional arrangement of work toward a partnership solution. These criteria are useful for finding the right subcontractor, but also as a TPL provider to know their customers criteria when choosing a provider. This knowledge will help them to meet the wants and needs of their customers. There are a number of criteria for the customer to look at but also for the provider to keep in mind to meet their customers' demands, and in the theory (Section 4.4.2) we described those stated by Lynch (2000) i.e., financial stability, business experience, management depth and strength, reputation with other clients, strategic directions, physical facilities and equipment, operations, quality initiatives, growth potential and cost. Based on theory and our empirical data, as a TPL provider Wallhamn does have strengths or potential with low costs, high quality, operations, physical facilities and equipment and if marketed in the right way will achieve a good reputation among existing clients that could generate new ones. However, we believe they have drawbacks within the criteria concerning management, information technology, strategic directions and in particular business experience within the TPL market. But, as discussed earlier, these are the major areas for

Wallhamn to deal with in the first stage in order to be able to act as a TPL provider.

To conclude this, we believe that in order to be a successful TPL provider and create value with performed operations it is necessary to create a strong organisational structure including the three mentioned central functions sales/marketing, operations management and finance/accounting, but also include management other functions which is important when acting as TPL provider i.e. warehousing, information systems and outsourcing in an efficient way. The organisation is the base on which you as a company build up a company, and if Wallhamn should enter this new market they have to reorganise to include all the necessary functions mentioned, to be able to act as a TPL provider and be competitive on the market.

6.5 Customer and market segments

After deciding the company's position, services and how to organise operations, warehouse, information systems etc., it is important to find the right customer segments for the logistic activities. There two main characteristics of segments that we will focus our analysis on; type of goods and geographical location. These segment characteristics is important to have defined when Wallhamn is going to attract new customers for the new services. The knowledge of the segments will help them focus their marketing activities on the right things.

6.5.1 Type of Goods

According to the interviews Wallhamn is able to handle almost all kinds of goods due to their flexibility and excellent workforce. But there are some restrictions and characteristics of Wallhamn's operations, location and organisation that make some types of goods more suitable than others for Wallhamn to focus on.

Wallhamn is located 50 km north of Gothenburg, and the port is situated approximately 16 km outside the big transport route E6 that connects Gothenburg with Oslo and the rest of the long distance road transportation network. The nearest industrial area is in Stenungsund 10 km away (Section 1.5 Restrictions). This location is not a natural place for customers to place their warehouse operations, due to the transportation distance and that there are no other industries in the area to consolidate transports with. Wallhamn has, on the other hand, possibilities to have relatively low storage cost compared to the logistic service providers in Gothenburg area. Wallhamn can offer prices for storage services that are almost the half due to lower prices on land and facilities (Section 5 interviews).

With this background information we can set one characteristic of the type of goods to attract to Wallhamn. By placing the warehouse operations at Wallhamn means higher transportation costs for the customer, but at the same time it does mean lower storage costs. Therefore, should Wallhamn concentrate on goods with *long storage time*. With a long storage time the lower costs of storage will compensate the higher transportation cost.

The competition in various industries has become very hard. Therefore companies have been forced to work extremely efficiently in order to reduce costs (Section 4.2 From Logistics to..). A consequence of this is that firms are trying to reduce stocks at any level. The time merchandise is in stock should be minimised, especially if the merchandise is of high value since a lot of capital will be tied in stock. If Wallhamn should focus on goods with long storage time they should also focus on *low-value products* that do not tie up as much capital for the customers when the merchandise is stored.

With regard to the resources at Wallhamn, the greatest one is, according to several interviews with customers and competitors in Section 5, the workforce. The workers at Wallhamn are loyal, flexible and prepared to work hard. And, according to the owner, the Municipality of Tjörn, the main goal of the port

company is to create job opportunities. Therefore, do we suggest, as mentioned in the logistical activities section of this analysis, Wallhamn to offer labour intensive operations. One of the most labour intense warehousing activities is order picking, this activity is also classified as a relatively basic operation. As stated in Section 4.5(How can TPL prov..) the economies of scale in warehousing, and especially in order picking, is small. This suits Wallhamn well since their operation is relatively small and therefore has difficulties in competing with larger competitors in areas where the economies of scale is large. Due to this information we believe that Wallhamn should also focus on goods that are suited for *order picking*.

Seen to the characteristic that Wallhamn is well suited for goods with long storage time gives them an additional area of goods to serve. This area is *goods with seasonal demand peaks*. The producer of such goods produces products and build up a stock of goods in low season to cover the peaks in demand in high seasons. This means that the goods will be kept in stock for a long time waiting for the high demand season to occur. A logistic/warehouse provider is well suited for seasonal goods since they can have several customers with different seasons of demand peaks. This makes it possible to average out the variations in flow so that the warehouse constantly have the optimal filling-rate in the warehouse.(Section 4.5 How can TPL pr..)

In order to be able to make the largest variety of operations at Wallhamn the company should try to get as much goods as possible that either *arrive or departure by sea* (Section 5.1.2 Grimaldi). By getting the goods from ships, Wallhamnsbolagen will also make the unloading and handling of goods from ships. This contributes both to more job opportunities and income. The same is for goods going out by the sea. The sea way is a natural transport route and is therefore not as sensitive to the geographical location of Wallhamn.

Due to the fact that Wallhamn do not have any direct connection to the railway net, there are some goods types that are not suitable or at least not easy to attract to Wallhamn. According to almost all interviews the absence of railway is

Wallhamn's largest disadvantage. In terms of goods it is difficult to attract customers with high volumes of heavy goods that need long distance transportation, and is therefore suited for railway transports. The goods could be bulk goods and forest products coming from north of Sweden (Section 1.5 Restrictions).

6.5.2 Geographical location of customers

The geographical location of customers is another way to define the customer segment that Wallhamn should focus on. It is hard to say precisely what geographical market to focus on but the restrictions, theory of value creations and interviews with TT-Trans gives us an idea of what geographical segments to concentrate the marketing at.

The absence of railway is the single largest characteristic that sets geographical limitations on the possible customer base. Customers that are situated in areas with long distance (>500 km) from Wallhamn are, in general, more efficiently served by railway transportation (according to general transportation theory). Since many of Wallhamn's competitors have direct access to the railway net (Section 5 Interviews) they can most likely serve these customers to a lower cost. Therefore, should Wallhamn not put to much effort on marketing in those distant markets.

Instead, Wallhamn should focus on those markets that are *easily reached by road transportation from the Wallhamn warehouse*. According to TT-Trans the customer base that is easily served by road transport from one warehouse should be located within a radius of 100-150 km round Wallhamn. This limitation in distance is set because that within this distance a truck can go from Wallhamn to the customer and back in the same day. This limitation of distance also makes it easier to have a close relationship with the customers since physical meetings can take place more often. It is also easier to arrange emergency transports and other services, that is outside the contract, and has to be made in short notice. The most natural geographical segment, that is situated within the distance limit, for

Wallhamn to focus on is the industries in Stenungsund. According to interviews with Samskip and TT-Trans Wallhamn should try to develop the relationship with the actors in this market to include as many as possible and also to increase the number of services for each customer. See Appendix 3 for map showing Wallhamn's potential market that is easily served by the Wallhamn warehouse within a radius of 150 km.

When deciding what segment to focus on it is also important to think about economies of scale. In Section 4.5 M. Berglund describes that a logistical provider can achieve economies of scale by having *several customers/clients in the same area*. The economies of scale occurs when goods to or from several customers within the same area can be consolidated and in that sense utilise the truck in a better way. This is especially important to think about when it comes to customers that is situated at longer distances from Wallhamn.

6.6 Goods flow

From our theoretical and empirical research, we have discovered a number of factors that could have the effect of an increase in Wallhamn's goods volume. Most of them have been discussed earlier in the analysis but we will give a brief explanation about each of them. The specific type of goods, geographical location has been discussed earlier under the section about customer and market segment.

6.6.1 Marketing

Marketing/sales are as noted earlier one of the central functions in an organisation. We have used Waters (1996) description in the theory (Section 4.6.1.1) and he describes the marketing/sales function to identify customer demand, stimulates new demand, collects and analyses information on customer needs, organizes advertising, take orders, make sure that products are delivered to customers / services are performed and so on. All respondents have emphasized the

importance of a strong marketing function within the organisation. The other ports in our research work actively towards agents, forwarders, shipping companies and importers. One of the respondents declared that the development of logistic services has demanded more from the organisation and especially the marketing activities, to get new customers to the port. It is usual that the respondents have activities where sales people go to visit producers and other potential customers. After our theoretical and empirical research we believe that Wallhamn has great potential for becoming a TPL provider and offer more logistical services, but this will not work if they do not get more traffic to the port. Wallhamn has to market themselves as a port with high flexibility, high quality, low price, and as an alternative to the port of Gothenburg. Moreover, one of our respondents argued that a major thing is to let everyone on the market know that Wallhamn can offer cheap flexible solutions and that Wallhamn should work more with the uniqueness they offer out there.

6.6.2 Feeder traffic

All respondents emphasised the importance of getting more traffic to the port, and most of them believed that Wallhamn should focus on goods arriving and leaving by sea transport. One alternative to get more traffic is to run feeder traffic in the port. However, if they were able to start a feeder line they must reach a goods volume of $2 * 50$ containers meaning two departures per week. Feeder traffic is growing within Swedish ports and if Wallhamn succeed in getting a feeder line to the port that might in turn generate in more shipping companies interests in operating in Wallhamn. Wallhamn has a project concerning feeder traffic in the port running at the moment.

6.6.3 Forwarders

In our research we have seen that most of the ports have their own forwarding agents or close co-operation with a few forwarding agents. This generates in higher service levels to the customers by being able to offer door-to-door

solutions. A forwarding agent that is connected to Wallhamn will work in the interest of Wallhamn, getting goods flow to go through Wallhamn. A possibility could be to work in co-operation with a few forwarding agents to secure the goods volumes in the port. From other ports respondents we can state that the customers are very pleased with having the opportunity to get all logistical services connecting to the flow of goods offered from one actor.

6.6.4 Hauliers

As important as it is to include forwarding agents, is also to include the land transport service. All respondents mentioned the arrangement of the road transport for their customers. This could be done by performing the service by oneself or by outsource/ subcontract it to another company. As mentioned earlier transportation is the most commonly outsourced logistics service. Today, Wallhamn is using one subcontractor, TT-Trans for their road transports. However, this co-operation did just start. In order to make sure that Wallhamn can offer the lowest price to their customers they must co-operate or work with more than just one haulier. Wallhamn's existing shipping customers are today using local hauliers and are arranging this by themselves. This service or logistical activity could be arranged by Wallhamn in the future, this way they can offer door-to-door solutions to their customers. One criterion is then that they can offer the most economical solution; otherwise will the shipping companies arrange the land transports by themselves. We do believe Wallhamn should offer this service, but in turn outsource/subcontract the actual transport to another haulier that can offer a high quality and a low price. One of our ports respondents uses about twenty different hauliers for their transport services and can therefore always choose the one with the best quality and economical offer.

6.6.5 Subcontractor

Another way of increase the goods flow in Wallhamn is to act as a subcontractor to other TPL providers. By specialising in standard services with the dimensions

of basic and value-added activities, with a high quality and a competitive price, Wallhamn can manage to work as a subcontractor for other TPL providers. However, it is important that they have some state-of-the-art competence or competitive edge like price or quality to be successful on the market. Once again, if working as a subcontractor they have to let the market know that they exist and can perform certain kind of logistical activities.

6.6.6 Importers/ Exporters

It is the importers that decide upon transportation alternatives and which port to use, not the shipping company itself. The shipping company can always suggest and promote for an alternative but in the end it is always the importer that decides. It is also the importers that decide on which logistical activities that needs to be done and were these are performed. One of the shipping companies respondent argued that Wallhamn must heavily market themselves towards the importers and the same towards exporters, and promote for the logistical services that Wallhamn can offer. Moreover, Wallhamn have to convince them to use Wallhamn as their port and/or perform the needed logistical activities.

6.6.7 Shipping companies

From our empirical research we can declare that Wallhamn should focus on goods arriving and leaving by sea transport, and try to include more logistical activities on the goods. We know that Wallhamn is working to get more shipping companies to the port, however, the fact that it is a very long and difficult process to get a shipping company to change port, gives us the question whether it might be better to try and increase the goods volume on the shipping companies operating in Wallhamn today. An increase goods volume might generate in increased number of departures by the existing shipping companies. An increased goods volume is of course a result of a lot of different factors that we have earlier discussed.

7 CONCLUSIONS, RECOMMENDATIONS AND REFLECTIONS

In this concluding section we will draw the conclusions of the thesis and give recommendations and reflections for further research.

7.1 Conclusions

The purpose and main problem of this thesis was to investigate Wallhamn's possibilities to work as a TPL provider and offer more logistical activities/services that adds value for Wallhamn and their customers. This is not a problem that can be answered on its own. Instead the answers to the main problem will be found in the conclusions of the different sub problems.

We believe Wallhamn has great potential of becoming a successful TPL provider, however, becoming a TPL provider will not be an easy task without problems. In this thesis we will not be able to solve all problems, instead we have focused on three critical areas; *Positioning, Customer segments, and Goods flow*. We believe these are areas Wallhamn must develop to become a successful actor in the TPL industry. Our conclusions of these sub problems will be presented thoroughly below, and in the end of each section we have created an item list of the most important issues within the area.

7.1.1 How should Wallhamn as a TPL provider position themselves?

To answer this sub-problem we have look into how Wallhamn can create value for their customers, and how they as a TPL provider should position themselves in the logistic market. To be able to develop a positioning strategy it is necessary to look over the logistical activities and services that

Wallhamn should offer and also how Wallhamn as a TPL provider should be organised in order to create value with performed operations?

7.1.1.1 Value creation and positioning

When acting as a TPL provider, the most important thing is to create value to the customers. Two main factors, logistics expertise and logistics system are necessary in order to act as a competitive TPL provider and thereby create value. Wallhamn is, by developing their business, to include more logistical activities, entering a new logistics market that requires logistics expertise and logistics systems. Without any exiting knowledge within this area they need to hire skilled people within this field in order to be able to create value to their clients.

Value can be created through a number of areas like factor cost, economies of scale and scope. Concerning factor costs, labour cost is a cost that varies significantly between different organisations, but also between geographical locations. Wallhamn has the strength of loyal, flexible employees that have been working in the port for a long time. This will make Wallhamn into a port with high flexibility and possibilities of handling all sorts of goods. Their strength of keeping a high flexibility is something that is mentioned by all shipping agencies to be one of the reasons why they operate in Wallhamn.

Wallhamn have the potential of achieving a high level of operational efficiency, and utilise their main driver of advantages, factor cost. This makes it possible to perform activities at a higher efficiency, as say lower costs than the customer. By integration of the client's operation it is possible to generate lower costs. In the eyes of Wallhamn as a TPL provider this can be achieved by for example multiple clients warehousing or transport networks, resulting in economies of scale.

We believe that Wallhamn as a TPL provider should focus on some core competencies, utilising their strength in factor costs to create value for their customers. They should focus on standard services; focus on a few core competencies like warehousing and transportation. Their high level of flexibility and skilled employees makes it possible to handle all types of goods and customers.

We think that Wallhamn must start by developing a positioning strategy suited for their possibilities and goals of entering this new market of TPL providers. With their past history in mind we do believe that they should have a wide customer base which will make them insensitive for fluctuations in clients businesses etc. Wallhamn should as TPL provider emphasise cost and operational efficiency for growth and development. However, as a start, they must get some more logistics expertise in order to be successful as TPL provider, including some restructuring in their existing organisation, necessary in order to develop a successful positioning strategy that will create value for their clients.

- *Create value to the customers*
- *Need for logistics expertise and logistics system*
- *Value creation through factor cost with strength in labour cost*
- *Loyal and flexible employees*
- *Operational efficiency & Integration of the client's operation*
- *Focus on some core competencies with standard services*
- *Emphasise cost and operational efficiency for growth and development*

7.1.1.2 Logistical Activities and Services

We believe that Wallhamn has to focus on the activities that they can deliver with superior performance and quality. In the early stage of operations the number of activities that can be produced with such quality is limited due to the lack of competence in more complex logistic services. Without concern of positioning Wallhamn's greatest challenge is to add more knowledge and competence in logistic management to be able to organise the operations efficiently. The standardised and traditional services that we believe Wallhamn can perform with excellence after developing the competence of management is transportation and warehousing.

Transportation

In the TPL industry it is very common that the service provider outsource transportation activities to subcontractors. The reason for this is as previously mentioned, that it demands a lot of resources, heavy investments and competence. And in the same time, standard services in transportation are generally accessible at low cost. In Wallhamns case the transportation is outsourced to TT-Trans that are responsible for the needed resources and competence and to handle the total transportation service in a superior way. In the future when the business hopefully has grown it could be a great idea to consider outsourcing of transportation services to several transportation firms. We suggest this because there could be other providers that can deliver better services to lower costs in certain geographical or product areas. If outsourcing transportation to companies in different geographical areas the geographical coverage also increases.

Warehousing

Another traditional logistic service that Wallhamn in our opinion can provide with superior performance is warehousing. The reason for this opinion is that they have the resources that is needed to run warehousing operations. The most important resources are a competent workforce and good facilities. One disadvantage for Wallhamn in providing warehousing services is the geographical location, but by focusing the marketing work on the right customer segments this obstacle will be avoided. Coming into the services and activities within the warehousing operations there are more services and activities than the actual storing that has to be produced in order to create value for the customer. One obvious operation is the handling of goods, including unloading and loading of transportation vehicles. Another service that we think Wallhamn should focus on is order picking. This activity suites Wallhamn well due to their good and competent workforce and the main owners goal of the operations to create job opportunities.

Activities in the future

To be competitive in the future we believe it is important for Wallhamn to increase the level of competence and develop the activities and services to include more complex solutions and value-added logistics. This is because of the trend within the industry is going toward providers who can offer total solutions concerning all logistical activities. The growth for these companies is expected to be substantially higher in the future compared to actors with standard services and basic logistics. We believe that Wallhamn can and should increase the number of activities within the warehousing operation in the future. Due to the level of competence of the workers at Wallhamn, we believe that Wallhamn can increase several value-added services in their warehouse offer. As mentioned previously the greatest obstacle of producing more complex services is the lack of management competence in logistic and warehousing processes, and in order to be able to deliver value-added services with superior performance it is critical that Wallhamn increases the level of competence. If Wallhamn succeeds in developing logistic competence we believe that packaging, customisation, postponement, and reassemble are activities well suited for Wallhamn.

Information Systems

Logistic information systems are the threads that link logistic activities into an integrated process. This integration is built on four levels of functionality: transaction, management control, decision analysis and strategic planning systems. In the area of logistical activities Wallhamn should focus on the transaction level of the system that initiates and records individual logistics activities. Transaction activities include order entry, inventory assignment, order selection, shipping, pricing, invoicing and customer inquiry. One service that Wallhamn should offer their clients is keeping track of stock levels. This demands an information system that keeps track of incoming and outgoing goods, this system should preferably be linked to the customers system. Many customers do also request information systems that can handle electronic orders; in this case it is important that the Wallhamn's system is compatible with the customer's. In order to satisfy the demands from the customers Wallhamn need to implement a system

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that can handle these services. They do also need to educate or hire a information system manager/operator and also train the workers that will use the system. The greatest limitation of what Wallhamn will be able to handle with their system is the level of investments that they are prepared to put in, and the level of competence in operating the system.

- *Transportation*
- *Outsourced*
- *Warehousing*
- *Increase of operational and management competence*
- *Handling of goods*
- *Order picking*
- *Value-added services*
- *Packaging*
- *Customisation*
- *Postponement*
- *Reassemble*
- *Information system*
- *Order entry*
- *Inventory assignment*
- *Order selection*
- *Shipping*
- *Pricing*
- *Invoicing*
- *Customer inquiry*
- *Stock levels*
- *Compatibility with clients*
- *Increase of operational and management competence*

7.1.1.3 Organisation

In order to be a successful TPL provider and create value with performed operations it is necessary to create a strong organisational structure including the three mentioned central functions sales/marketing, operations management and finance/accounting. We believe marketing is the most important area for Wallhamn to focus on.

The shipping companies emphasised the importance of Wallhamn to market themselves as a flexible and cheap port and an alternative to Gothenburg. Wallhamn must market themselves and convince the importers to choose Wallhamn as their port. Furthermore, they must point out their high level of flexibility, high service level, high quality and the ability to serve all types of customers. We believe that it is very hard for a company like Wallhamn to survive as a TPL provider without an efficient sales/marketing function.

With Wallhamn's plans on entering the TPL market by offering more logistical services, it is necessary to develop their operations management function. Wallhamn need some logistical expertise and knowledge within this area when going into this new field of competitive TPL providers.

As a warehouse service provider it is important to know about the different dimensions that the customers take into consideration when choosing a provider. With consideration to Wallhamn opportunities as TPL provider it is most interesting to look at operation flexibility and scale economies. In order to stay competitive warehouse operators must offer other value-added services. A lot of value-added activities are found within picking and packing, and these activities are not offered to any great extent by TPL providers, so we see a great potential for Wallhamn within this area. From the management point of view, there are numbers of things that the management must consider before initiating operations like; stocking of warehouse, personnel training, developing work procedures, security systems, billing and inventory control, safety and maintenance.

Information is viewed as one of the keys to logistics competitive advantage for the future and is described as the threads that link logistics activities into and integrated process. With Wallhamn's aim of becoming a TPL provider they need to invest in information systems to be competitive. We believe it is the management's responsibility to make sure that this system is created in the most efficient way to meet the needs of the users.

Today, Wallhamn is outsourcing the road transport to the haulage company TT-Trans, however, we think that Wallhamn should increase the number of haulage companies in order to offer the most competitive price to their customers. When outsourcing transportation Wallhamn should try to use actors that are specialised in different geographical areas. In that way the geographical coverage increases.

For the foreseeable future the degree of transportation outsourcing will be further increased. Warehousing as the second major component of logistics will be subcontracted to a much higher degree than the current low levels. Value-added services will also be subcontracted to a higher degree. This statement could generate in an increased need for warehousing and other value-added activities that are offered by the TPL providers. From Wallhamn's point of view, when turning into a TPL provider, this could mean great potential for growth. The activities mentioned all have in common that they are operational and often labour intensive. Wallhamn has the potential of having strengths of being operational efficient and being labour intensive.

The management have the responsibility of searching for suitable providers for the services that should be outsourced. When outsourcing an activity Wallhamn must look at different criteria such as; financial stability, business experience, management depth and strength, reputation with other clients, strategic directions, physical facilities and equipment, operations, quality initiatives, growth potential and cost. When acting as a TPL provider does Wallhamn have strengths or potential with low costs, high quality, operations, physical facilities and equipment and if market in the right way, a good reputation among existing clients could generate new ones. However, we believe they have drawbacks within the

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criteria concerning management, information technology, strategic directions and in particular business experience within the TPL market.

- *Strong organisational structure*
- *More resources on Sales/Marketing,*
- *Develop the Operation management function*
- *Managing the warehouse efficient*
- *Offer value-added services, picking and packing,*
- *Information, key to logistics competitive advantage*
- *Higher degree of outsourcing in the future within transportation and warehousing*

7.1.2 What Customer and Market Segments should Wallhamn focus on?

After deciding the company's position, services and how to organise operations, warehouse, information systems etc., it is important to find the right customer segments for the logistic activities. In this thesis we focus on two main characteristics of segments; type of goods and geographical location. These segment characteristics are important to have defined when Wallhamn is going to attract new customers for the new services. Crucial for finding type of goods and geographical location is the landed cost which is described in the third section. The knowledge of the segments will help Wallhamn focus their marketing activities on the right things.

7.1.2.1 Type of Goods

There are some restrictions and characteristics of Wallhamn's operations, location and organisation that make some types of goods more suitable than others for Wallhamn to focus on. The transportation distance and the fact that there are no other industries in the area to consolidate transports with, makes Wallhamn a unnatural location for warehouse and logistical services. Wallhamn has on the

other hand the possibility to have relatively low storage cost compared to the logistic service providers in the Gothenburg area. By placing the warehouse operations at Wallhamn means higher transportation costs for the customer, but at the same time does it mean lower storage costs. Therefore should Wallhamn concentrate on goods with long storage time. With a long storage time the lower costs of storage will compensate the higher transportation cost. Other suitable goods are bulky goods which need large storing areas to low costs. The competition in various industries has become very hard. Therefore companies have been forced to work extremely efficiently in order to reduce costs. So, if Wallhamn should focus on goods with long storage time they should also focus on low-value products that do not tie up as much capital for the customers when the merchandise is stored.

Seen with regard to the resources at Wallhamn, the greatest one is the workforce. According to the owner, the Municipality of Tjörn, the main goal of the port company is to create job opportunities. Therefore do we suggest Wallhamn to offer labour intensive operations. One of the most labour intense warehousing activity is order picking. The economy of scale in warehousing, and especially in order picking, is small. This suits Wallhamn well since their operation is relatively small and therefore has difficulties in competing with larger competitors in areas where the economies of scale are large. Wallhamn should therefore preferably also focus on goods that are suited for order picking for example bolts and screws.

Concerning our suggestion that Wallhamn should focus on goods with long storage time gives them an additional area of goods to serve. This area is goods with seasonal demand peaks. A logistic/warehouse provider is well suited for seasonal goods since they can have several customers with different seasons of demand peaks. This makes it possible to average out the variations in flow so that the warehouse constantly has the optimal filling-rate in the warehouse. One example of this could be fertilizer which is low value goods, needs large storing areas, and has seasonal demands and a rather long storing time. Another example of seasonal goods is winter tires.

In order to be able to make the largest variety of operations at Wallhamn the company should try to get as much goods as possible that either arrive or departure by sea. The sea way is a natural transport route and is therefore not as sensitive to the geographical location of Wallhamn.

- *Type of Goods*
- *Long storage time*
- *Bulky Goods*
- *Low-value products*
- *Order picking goods*
- *Goods with seasonal demand peaks*
- *Goods arriving or departing by sea*

7.1.2.2 Geographical location of Customers

When it comes to the geographical location of Wallhamn's customers, the absence of the railway is the single largest characteristic that sets geographical limitations on the possible customer base. In our opinion Wallhamn should therefore focus on those markets that are easily reached by road transportation. The customer base that is easily served by road transport from one warehouse should be located within a radius of 100-150 km around the Wallhamn warehouse. This limitation of distance also makes it easier to have a close relationship with the customers since physical meetings can take place more often. It is also easier to arrange emergency transports and other services, which is outside the contract, and has to be made in short notice. The most natural geographical segment that is situated within the distance limit, for Wallhamn to focus on is the industries in Stenungsund. Wallhamn should try to develop the relationship with the actors in this market to include as many customers as possible and also to increase the number of services for each customer.

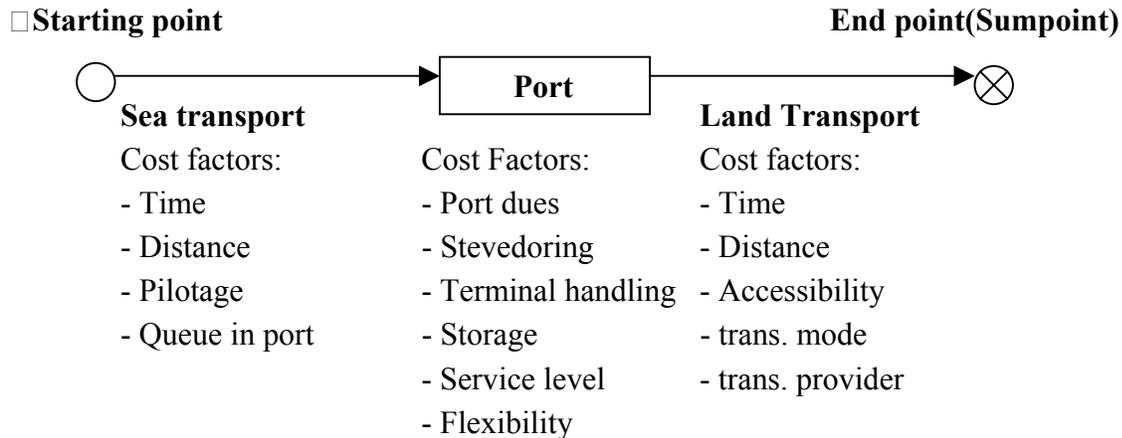
A logistical provider like Wallhamn can achieve economies of scale by having several customers/clients in the same area. The economies of scale occurs when goods to or from several customers within the same area can be consolidated and in that sense utilise the truck in a better way. This is especially important to think about when it comes to customers who are situated at longer distances from Wallhamn.

- *Geographic location of Customers*
- *Markets easily reached by road*
- *The industries in Stenungsund*
- *Several customers in the same area*

7.1.2.3 Landed Cost

A good way of identifying the customer segments is to calculate the landed cost. The landed cost can be seen as the total cost of serving one customer from a specific point in the distribution channel. The landed cost is usually calculated for one unit, i.e., one container and should include all different factors that affects and contributes to the total cost of that specific distribution channel. This way of identifying customer segments is very useful when it comes to comparisons of competitors. The landed cost can for example be calculated for a unit of goods, transported by sea, going from the same starting point, through Wallhamn or the Port of Gothenburg and then to the end customer. When the landed cost is calculated for each distribution channel it is possible to say which channel that serves the customer to the lowest cost. In this case we will present a guideline for how the landed cost can be calculated and how it can be used. Because of the shortage in time we are not able to present any specific figures, but we will give recommendations on which factors to include in the calculations to give a fair landed cost that can be compared to competitors.

To present the different factors that affect the landed cost do we use a schematic figure of the distribution channel.



By summing all cost factors we have identified the landed cost for the distribution channel. To simplify we have made the assumption that the unit of goods is transported on the same type of ship with the same filling rate. To exemplify this schematic figure the starting point can be the geographic point outside Skagen where the ships leaves the large shipping route to sail to each port. The port is, of course, Wallhamn and the end point can be a customer or a geographical region. The landed cost is the sum off all costs that is added from Skagen via Wallhamn to the customer. To compare it to a competitor, for example Gothenburg, the landed cost will be the sum of all costs that are added from Skagen via the Port of Gothenburg to the customer or geographical region.

The landed cost can, as previously mentioned, be calculated for a specific end customer, but in this case when the specific end customer is not identified we will use the landed cost to find a breaking point from where one distribution channel is more cost efficient than another. This breaking point is affected by all the factors that have summed up to the landed cost for each distribution channel. One specific factor that has great effect on the landed cost is the time the product unit is stored in the distribution channel. This is especially true for Wallhamn because compared to for example the Port of Gothenburg the storage cost at Wallhamn is much

lower. With a long storage time the effect on the landed cost will be great. Another factor that is very important is of course the distance. An example of this is that transportation over 500 km railway transports are generally more efficient than road transport. In this case it would, without taking anything else into consideration, mean that all customers located more than 500 km from the port should be served by railway, and in that case Wallhamn can forget all markets that are situated more than 500 km from Wallhamn. But, by looking into all factors of the landed cost we might find that the differences in the other cost factors exceed the increase of efficiency created by using railway transports instead of road transport. For Wallhamn it could mean that a customer situated in distant areas might be served to a lower cost when the goods are going through Wallhamn and transported by road, than if the goods are, for example, going through the Port of Gothenburg and transported by rail.

Besides identifying potential markets and comparing cost structures to competitors' the landed cost and the identified cost factors can be used as a very useful tool when it comes to improvement of processes since they clarifies the efficiency in various activities.

7.1.3 How can Wallhamn increase their flow of goods?

We have discovered a number of factors that could have the effect of an increase in Wallhamn's goods volume.

Marketing - A strong marketing / sales function is necessary to identify customer demand, stimulates new demand, collects and analyses information on customer needs, organises advertising, take orders, and make sure that products are delivered to customers / services are performed and so on.

Wallhamn has great potential for becoming a TPL provider and offer more logistical services, but this will not work if they don't get more traffic to the port. Wallhamn has to market themselves as a port with high flexibility, high quality, low price, and a as an alternative to the port of Gothenburg. Moreover, a major

thing is to let everyone on the market know that Wallhamn can offer cheap flexible solutions and that Wallhamn should work more with the uniqueness they offer out there. The marketing activities should be focused heavily on the customer and market segments that we have identified.

Feeder traffic - We believe that Wallhamn should focus on goods arriving and leaving by sea transport. One alternative to get more traffic is to run feeder traffic in the port. Feeder traffic is growing within Swedish ports and if Wallhamn succeed in getting a feeder line to the port that might in turn

generate in more shipping companies interests in operating in the Port of Wallhamn. By having feeder traffic in the port, Wallhamn can offer continuous transportation to and from the port, and that service might generate new customers.

Forwarders - Another opportunity to increase the goods flow is for Wallhamn to have their own forwarding agents or close co-operation with a few forwarding agents. This generates in higher service levels to the customers by being able to offer door-to-door solutions. A forwarding agent that is connected to Wallhamn will work in interest of Wallhamn and getting goods flow to go through Wallhamn. The customers will have the opportunity to get all logistical services connecting to the flow of goods offered from one actor.

Hauliers - In order to make sure that Wallhamn can offer the lowest price to their customers they must co-operate or work with more than just one haulier. Wallhamn's existing shipping customers are today using local hauliers and are arranging this by themselves. This service or logistical activity could be arranged by Wallhamn in the future, this way they can offer door-to-door solutions to their customers. We do believe Wallhamn should offer this service, but in turn they should outsource/subcontract the actual transport to another haulier that can offer a high quality and a low price. By increasing the number of hauliers Wallhamn can increase their geographical coverage.

Subcontractors- Another way of increase the goods flow in Wallhamn is to act as a subcontractor to other TPL providers. By specialising in standard services with the dimensions of basic and value-added activities, with a high quality and a competitive price, Wallhamn can manage to work as a subcontractor for other TPL providers. It is important that they have some state-of-the-art competence or competitive edge like price or quality to be successful on the market.

Importers/Exporters - Wallhamn must heavily market themselves towards the importers and the same towards exporters, and promote for the logistical services that Wallhamn can offer. Moreover, Wallhamn have to convince them to use Wallhamn as their port and/or perform the needed logistical activities.

Shipping companies - We believe Wallhamn should focus on goods arriving and leaving by sea transport, and try to include more logistical activities on these goods. We know that Wallhamn is working to get more shipping companies to the port, however, the fact that it is a very long and difficult process to get a shipping company to change port, gives us the question whether it might be better to try and increase the goods volume on the shipping companies operating in Wallhamn today. An increase goods volume might generate in increased number of departures by the existing shipping companies. An increased goods volume is of course a result of a lot of different factors that we have earlier discussed.

- *Strong marketing / sales function*
- *Start feeder traffic*
- *Forwarding agents/ agency*
- *Co-operation with more than one haulier*
- *Act as a subcontractor to other TPL providers*
- *Marketing towards importers and exporters*
- *Increase goods volume on existing shipping companies*

7.2 Recommendations and Reflections

The result of our thesis is not to be seen as a complete guide for how Wallhamn should become a TPL provider. Instead we have brought up some major areas that we think are important for Wallhamn to focus on. We believe there is a future for Wallhamn when acting as a TPL provider. Despite the bad geographical location we think they can succeed by concentrating on the right areas for development.

As mentioned in the limitations of this thesis some areas are not discussed. During our study we have found certain areas that could be of interest for further research.

In the interview with the haulier TT-Trans it is mentioned that the Norwegian market is a market segment for Wallhamn to focus on, and especially the Oslo region. In our opinion this is a good idea because of the fact that the highway E6 is the only road connecting Norway with the rest of Europe. Therefore Wallhamn, which is situated close to this transportation route and relatively close to Norway, is a good option for Norwegian companies when it comes to warehousing of goods that either comes from or is going out to the international market. The closeness to the Port of

Gothenburg is another factor that could generate customers from Norway. The Port of Gothenburg is by far the largest port in Scandinavia and has therefore the largest number of long distance departures. By transporting goods from Norway to Gothenburg the Norwegian actors will get direct sea transportation to several markets all over the world. This can be an opportunity for Wallhamn to take advantage of. With its location north of Gothenburg Wallhamn is on the “right side” for the Norwegian market. By offering cheap warehousing services it would be possible to convince

Norwegian actors to place their outgoing or incoming goods in Wallhamn’s warehouse before distributing to the right end location.

Within the area of logistics and warehousing activities and services, we have not been able to investigate the different activities on a detail level because of the limited time. We believe that detailed knowledge is necessary for Wallhamn to have before starting up various activities/services to be able to deliver the services with superior quality and in that way create value for themselves and their customers.

Within the area of customer and market segments we have given an example of what to include in the landed cost. It could be interesting to follow this example and include the actual figures, and thereby see the actual breakpoints for the market area that Wallhamn can serve in a competitive way.

To work with the thesis has been very interesting and educative. During our research we have only experienced positive response from the principals at Wallhamn and all respondents in our empirical research. The availability and possibility for guidance from our supervisor has been very good. It has generated in an efficient work procedure.

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WORDLIST

Arm's length relationship – Buyer / Seller relationship built on a single transaction with the deciding factor on price, usually short in nature.

Assembling - Different parts of a product are put together to one unit.

Bar Code – A series of lines of various widths and spacing which can scanned electronically to identify a carton or individual item.

Breakbulk - Ocean cargo that is not containerised but must be handled manually into and out of a ship.

Business logistics - The process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements. Note that this definition includes inbound, outbound, internal and external movements.

Customisation – Goods put in order in the terminal so that it can be immediately taken over by the final customer.

Consolidation – Collecting smaller shipments to form a larger quantity in order to realise lower transportation rates.

Coordinated transportation –Two or more carries of different modes transporting a shipment.

Cross-docking – To consolidate or deconsolidate at flow centres or distribution centres that reposition goods from the receiving dock to shipping dock directly without putting them into storage.

Economies of scale – The reduction in long-run average cost as the company's size (scale) increases.

Emergency deliveries – Occasional deliveries outside the regular distribution plan.

ERP-System – Enterprise Resource Planning, Business information system that by the help of information technology integrates business functions like finance, logistics, sales etc.

Feeder traffic – Because of the large goods volumes that is demanded in sea transports it becomes necessary to consolidate the goods flow from smaller port towards and through the large ports, feeder operations.

Forwarder – Responsible for receiving and delivery of goods including i.e. clearance service, on behalf of a client.

Goods split – Split of goods consignments with different end locations.

Haulier - Road transporter.

Inbound logistics – Activities relating to logistics that takes place only within the organisation and inside the facilities.

Labelling – Marking and tagging the products for final consumption.

Landed cost – The landed cost of a product includes the cost of the product at the source plus the cost to transport the product to its destination. The landed cost also determines the extent of the market for a business. The greater the distance the product is shipped, the greater the landed cost.

Merge in transit – Merge in transit collects shipments from multiple origin points and consolidates them, in transit, into a single delivery to the customer.

Order picking – Assembling a customer's order from items in storage.

Outbound logistics – Activities relating to logistics that includes an actor outside the own organisation.

Outsourcing- Purchasing a logistics service from an outside firm, as opposed to performing it in-house.

PDI- Pre-delivery –inspection, Final adjustments, of for example passenger cars, after a transport before the customer receives the vehicle.

Postponement (manufacturing) – The final processing are postponed until customer orders have been received and are performed from central warehouse in international supply chain to meet customer or country specific requirements in the finished product based on final manufacturing.

Reconditioning – After transports the goods are restored to its original condition, before reaching the market.

Stevedoring – Activities related to unloading and loading of ships.

Stripping – Unloading of containers.

Stuffing – Loading of containers.

Supply-chain – The network of intermediaries engaged in transfer storage, handling, and communications functions that contribute to the efficient flow of goods.

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Third-Party Logistics – Organisations' use of external providers, in intended continuous relationships bound by formal or informal agreements considered mutually beneficial, which render all or a considerable number of the activities required for the focal logistical needs without taking title

Value added – The value added to the product or service through the utility created by the logistics function.

Value creation – Value is created when the performance quality meets or exceeds customer perceptions of logistics service.

WTL - BUSINESS PLAN

Investments

| | | |
|--------------|----------------|-----------------|
| Before start | concrete floor | SEK 900 000 |
| | pallet stands | SEK 200 000 |
| | | 1100 000 |

| | | |
|---------------|--------------------|----------------|
| During year 1 | information system | SEK 275 000 |
| | pallet stands | SEK 400 000 |
| | | 675 000 |

Variable costs

| | | |
|--------|--------------------|-----------------|
| Year 1 | foreman salaries | SEK 170 000 |
| | employees salaries | SEK 720 000 |
| | equipment | SEK 130 000 |
| | | 1020 000 |

| | | |
|--------|--------------------|-----------------|
| Year 2 | foreman salaries | SEK 170 000 |
| | employees salaries | SEK 720 000 |
| | equipment | SEK 440 000 |
| | | 1330 000 |

Organisation

| | | |
|-------|--------------------|-----|
| Staff | foreman | 0,5 |
| | staff in warehouse | 2,5 |

| | |
|-------------------|----------------|
| Competence | data knowledge |
|-------------------|----------------|

QUESTIONNAIRES**Questionnaire for interview with existing customers**

- 1 Business activities?
 - Fact about the company
 - Geographical coverage
 - Largest customers
 - Type of goods and origin
- 2 How big is Wallhamn's share of the total flow of goods transported?
- 3 What activities are you as a company buying from Wallhamn today?
- 4 Are there other activities that you wish/ would like Wallhamn to offer?
- 5 What is needed from Wallhamn for you to increase the number of activities you buy from them?
- 6 What is your personal opinion/idea about Wallhamn seen as a logistic centre, and their possibilities for success?

Questionnaire for telephone interviews (market screening) with Ports

- 1 Do you offer your customers any logistic activities besides loading and unloading of ships, if you do, what logistic activities do you offer?
- 2 How have you arranged your forwarding operations?
- 3 Are you co-operating with any distributor so that you can offer transportation solutions to and from the port?

- 4 What kind of customers buys your logistic services, and what kind of goods are involved?
- 5 In your opinion, do you think that your port is a third party logistics provider?
- 6 What do you think about ports possibility to work as a TPL provider, and what do you think is necessary to take into consideration when becoming a TPL provider?

Questionnaire for interview with Selected Ports

- 1 Business activities?
 - Fact about the company
 - Geographical coverage
 - Largest customers
 - Type of goods and origin
- 2 When and what/why did you decide to expand the business to include more activities?
- 3 How did you work with implementation? , resources needed, organisation, marketing and impediments.
- 4 What has the trend looked like?
- 5 Have your way of working with logistic activities attracted new customers?
- 6 From the start did the customer base consist of already existing customer who expanded their business or new customers?

- 7 Do you use subcontractors to the activities that you can't perform by yourselves?
- 8 What do you think about Wallhamn's opportunities of becoming a logistic centre?
- 9 What kind of information system are you using and how does it work? Is this system connected to your customers?

Questionnaire for interview with TT-Trans

- 1 Business activities?
 - Fact about the company
 - Geographical coverage
 - Largest customers
 - Type of goods and origin
- 2 What kind of services are you offering?
- 3 Do you specialise on any kind of goods?
- 4 Do you co-operate with any logistic centres today?
- 5 What are your opinion/ideas on the development of a logistical centre in Wallhamn?
- 6 What goods and which customers do you think they should focus on?
- 7 What geographical area do you think should they focus on?
- 8 How will a co-operation between TT-Trans and Wallhamn look like?

Map showing Wallhamn's potential market that is easily served by the Wallhamn warehouse within a radius of 150 km. (see section 6.5.3)

□ □ □

